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SEP 16 2003

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station OP1-17
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED THIRD TEN-YEAR INSERVICE INSPECTION INTERVAL INSERVICE INSPECTION PROGRAM PLAN FOR SUSQUEHANNA SES UNITS 1 AND 2
PLA-5662

Docket Nos. 50-387 and 50-388

In accordance with Title 10, Code of Federal Regulations, Part 50, Section 55a, Paragraph g, Subparagraph (4)(ii) [10 CFR 50.55a(g)(4)(ii)], PPL Susquehanna, LLC (PPL) has updated the Susquehanna Steam Electric Station (SSES), Units 1 and 2 Inservice Inspection (ISI) Program Plan for the Third Ten-Year Inservice Inspection Interval.

In accordance with 10 CFR 50.55a(g), PPL is required to update the ISI program per the American Society of Mechanical Engineers (ASME) Section XI (the Code) for SSES once every ten years. The ISI program is required to comply with the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a one year prior to the start of the interval per 10 CFR 50.55a(g)(4)(ii). The Third ISI Inspection Interval for SSES Units 1 and 2 is currently scheduled to commence on June 1, 2004 and be completed by May 31, 2014. Accordingly, the 1998 Edition with 2000 Addenda of ASME Section XI is the Code that SSES will meet for the Third Ten-Year Inservice Inspection Interval ISI Program Plan.

PPL is submitting for review the attached Third Ten-Year Inservice Inspection Interval ISI Program Plan. The key features of this Plan are the Introduction and Background (Section 1.0), Basis for Inservice Inspection Program (Section 2.0), Component ISI Plan (Section 3.0), Support ISI Plan (Section 4.0), System Pressure Testing ISI Plan (Section 5.0), Containment ISI Plan (Section 6.0), Inservice Inspection Summary Tables (Section 7.0), Relief Requests from ASME Section XI (Section 8.0), and References (Section 9.0).

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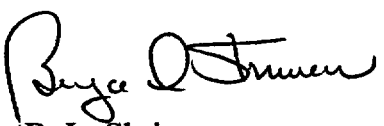
Where alternatives to Code requirements are being proposed or the implementation of certain Code requirements has been determined to be impractical because of configuration of components, radiation level, or other valid reasons, specific relief requests have been included in Section 8.0 of the Third Ten-Year Inservice Inspection Interval ISI Program Plan.

Important changes to the ISI Program that PPL has adopted are: the EPRI Topical Report TR-112657, Rev. B-A methodology, which was supplemented by Code Case N-578-1, for implementing Risk-Informed Inservice Inspections. The Risk-Informed Inservice Inspection (RISI) Program will be in effect the entire Third Ten-Year Inservice Inspection Interval. This approach replaces the categorization, selection, and examination volume requirements of ASME Section XI Categories B-F, B-J, C-F-1, and C-F-2 applicable to SSES with Category R-A as defined in Code Case N-578-1. Implementation of the RISI Program is in accordance with Relief Request 3RR-01. This submittal also consolidates the Containment Inservice Inspection Program Plan scheduling to coincide with the Third Ten-Year Inservice Inspection Interval ASME Section XI component scheduling and updates our Code of Record to the 1998 Edition, 2000 Addenda.

We request that the Third Ten-Year Inspection Interval ISI Program Plan for Susquehanna SES Units 1 and 2 be approved by May 1, 2004.

Should you have any questions, please contact C. T. Coddington at (610) 774-4019.



B. L. Shriver

Attachment: ISI Program Plan Third Ten-Year Inservice Inspection Interval

copy: NRC Region I
Mr. S. Hansell, NRC Sr. Resident Inspector
Mr. R. V. Guzman, NRC Project Manager
Mr. R. Janati, DEP/BRP

Attachment to PLA-5662

ISI Program Plan
Third Ten-Year Inservice Inspection Interval

SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 & 2

ISI Program Plan
Third Ten-Year Inspection Interval

Commercial Service Dates:

Unit 1 - 06/08/83
Unit 2 - 02/12/85

Susquehanna Steam Electric Station
769 Salem Boulevard
Berwick, Pennsylvania 18603

Prepared By:
Innovative Technology Solutions Corporation
Engineering Programs Division
Naperville, Illinois

ITS
CORPORATION

INITIAL APPROVAL SHEET

TITLE: ISI Program Plan
Third Ten-Year Inspection Interval
Susquehanna Steam Electric Station, Units 1 & 2

DOCUMENT: SUS04.G01 REVISION: 0

PROGRAM DEVELOPMENT

PREPARED: Stephen J Coleman 7/18/03
Stephen J Coleman
ITSC Project Engineer

REVIEWED: 7-18-03
Roger T. Bloom
ITSC Project Engineer

APPROVED: 7.18.03
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PROGRAM ACCEPTANCE

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Inservice Inspection Engineer
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REVIEWED: 7/30/03
Douglas B. Ritter
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APPROVED: 7/30/2003
Francis S. Gruscavage, Jr
Supervising Engineer Programs-SPT

REVIEWED: 7/28/03
D. E. Tillery
Authorized Nuclear Inservice Inspector

Each time this document is revised, the Revision Approval Sheet will be signed and the following Revision Control Sheet should be completed to provide a detailed record of the revision history. The signatures above apply only to the changes made in the revision noted. If historical signatures are required, station archives should be retrieved.

REVISION CONTROL SHEET

Major changes to this document should be outlined within the table below. Editorial and formatting revisions are not required to be logged.

Revision	Date	Revision Summary
0	7/18/03	Initial Issue. (This ISI Program Plan was developed by ITS Corporation as part of the Third Interval ISI Program update.) Prepared: S. Coleman Reviewed: R. Bloom Approved: D. Lamond

Notes:

1. This ISI Program Plan (Sections 1 - 9 inclusive) is controlled by the Susquehanna Steam Electric Station Design Engineering Programs Group.

2. Revision 0 of this document was issued as the Third Interval ISI Program Plan and was submitted to the NRC for review, including approval of the initial Third Interval Relief Requests. Future revisions of this document made within the Third Interval will be maintained and controlled on site at the station; however, they are not required to be and will not be submitted to the NRC for approval. The exception to this is that new or revised Relief Requests shall be submitted to the NRC for safety evaluation and approval.

REVISION SUMMARY

Section	Effective Pages	Revision	Date
	i to iv	0	7/18/03
1.0	1-1 to 1-14	0	7/18/03
2.0	2-1 to 2-46	0	7/18/03
3.0	3-1 to 3-3	0	7/18/03
4.0	4-1 to 4-2	0	7/18/03
5.0	5-1	0	7/18/03
6.0	6-1 to 6-2	0	7/18/03
7.0	7-1 to 7-30	0	7/18/03
8.0	8-1 to 8-38	0	7/18/03
9.0	9-1 to 9-3	0	7/18/03

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1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

This Inservice Inspection (ISI) Program Plan details the requirements for the examination and testing of ISI Class 1, 2, 3, MC, and CC pressure retaining components and supports at Susquehanna Steam Electric Station (SSES), Units 1, 2, and Common. Common (Unit Common) components are included in the Unit 1 sections, reports, and tables. This ISI Program Plan also includes Containment Inservice Inspection (CISI), Risk-Informed Inservice Inspections (RISI), augmented inservice inspections, and pressure testing requirements imposed on or committed to by SSES.

The Third ISI Interval is effective from June 1, 2004 through May 31, 2014 for SSES Unit 1, and from June 1, 2004 through May 31, 2014 for SSES Unit 2. With the update to the ISI Program for the Third Inspection Interval for Class 1, 2, and 3 components, including their supports, PPL has elected to update the CISI Program to its Second Interval for Class MC and CC components at the same time (Relief Request 3RR-10). This update will enable all the ISI Program components/elements to be based on the same effective Edition and Addenda of ASME Section XI as well as share a common interval start and end date.

Paragraph IWA-2430(d)(1) of ASME Section XI allows an inspection interval to be extended or decreased by as much as one year, and Paragraph IWA-2430(e) allows an inspection interval to be extended when a unit is out of service continuously for six months or more. The extension may be taken for a period of time not to exceed the duration of the outage. See Tables 1.1-1, 1.1-2, and 1.1-3 for intervals, periods, and extensions that apply to SSES's Third ISI Interval and Second CISI Interval.

The Third ISI Interval and the Second CISI Interval are divided into two or three inspection periods as determined by calendar years within the intervals. Tables 1.1-1, 1.1-2, and 1.1-3 identify the period dates for the Third ISI Interval and the Second CISI Interval as defined by Inspection Program B. In accordance with Paragraph IWA-2430(d)(3), the inspection periods specified in these Tables may be decreased or extended by as much as 1 year to enable inspection to coincide with SSES's refueling outages.

Table 1.1-1

SSES Unit 1 and Unit 2 ISI Interval/Period/Outage Matrix
(for ISI Class 1, 2, and 3 component examinations)

Unit 1		Period	Interval	Period	Unit 2	
Outage Number	**Projected Outage Start Date or Outage Duration**	**Start Date to End Date**	**Start Date to End Date**	**Start Date to End Date**	**Projected Outage Start Date or Outage Duration**	**Outage Number**
14	Scheduled 3/06	1st 6/1/04 to 5/31/07	3rd (Unit 1) 6/1/04 to 5/31/14[1] 3rd (Unit 2) 6/1/04 to 5/31/14[2]	1st 6/1/04 to 5/31/07	Scheduled 3/05	12
15	Scheduled 3/08	2nd 6/1/07 to 5/31/11			Scheduled 3/07	13
16	Scheduled 3/10			2nd 6/1/07 to 5/31/11	Scheduled 3/09	14
17	Scheduled 3/12	3rd 6/1/11 to 5/31/14			Scheduled 3/11	15
18	Scheduled 3/14			3rd 6/1/11 to 5/31/14	Scheduled 3/13	16

Note 1: The Unit 1 Second ISI Interval was extended by 358 days as permitted by IWA-2430(d). This extension is being carried forward to the Third Interval to accommodate both Units 1 and 2 having the same interval start date. As required by IWA-2430(d)(1), successive intervals shall not be altered by more than one year from the original pattern. This means that for the remainder of the Third Interval, only 7 days are available to use under the IWA-2430(d) extension.

Note 2: The Unit 2 Second ISI Interval was reduced by 256 days as permitted by IWA-2430(d). This reduction is being carried forward to the Third Interval to accommodate both Units 1 and 2 having the same interval start date. As required by IWA-2430(d)(1), successive intervals shall not be altered by more than one year from the original pattern. This means that for the remainder of the Third Interval, the allowable one year (365 days) is still available to use under IWA-2430(d).

Table 1.1-2

SSES Unit 1 and Unit 2 ISI Interval/Period/Outage Matrix
(for ISI Class MC component examinations)

Unit 1		Period	Interval	Period	Unit 2	
Outage Number	**Projected Outage Start Date or Outage Duration**	**Start Date to End Date**	**Start Date to End Date**	**Start Date to End Date**	**Projected Outage Start Date or Outage Duration**	**Outage Number**
14	Scheduled 3/06	1st 6/1/04 to 5/31/07	2nd (Unit 1) 6/1/04 to 5/31/14[1] 2nd (Unit 2) 6/1/04 to 5/31/14[1]	1st 6/1/04 to 5/31/07	Scheduled 3/05	12
15	Scheduled 3/08	2nd 6/1/07 to 5/31/11			Scheduled 3/07	13
16	Scheduled 3/10			2nd 6/1/07 to 5/31/11	Scheduled 3/09	14
17	Scheduled 3/12	3rd 6/1/11 to 5/31/14			Scheduled 3/11	15
18	Scheduled 3/14			3rd 6/1/11 to 5/31/14	Scheduled 3/13	16

Note 1: A request for use of subsequent ASME Section XI Code Edition and Addenda was submitted in accordance with Relief Request 3RR-10 which implements the 1998 Edition through the 2000 Addenda of ASME Section XI for the CISI Program as well as share a common interval start and end date with the ISI Program.

Table 1.1-3

SSES Unit 1 and Unit 2 ISI Interval/Period/Outage Matrix
(for ISI Class CC component examinations)

<table>
<tr><th colspan="2">Unit 1</th><th>5-Year Period</th><th>Interval</th><th>5-Year Period</th><th colspan="2">Unit 2</th></tr>
<tr><th>Outage Number</th><th>Projected Outage Start Date or Outage Duration</th><th>Start Date to End Date</th><th>Start Date to End Date</th><th>Start Date to End Date</th><th>Projected Outage Start Date or Outage Duration</th><th>Outage Number</th></tr>
<tr><td>14</td><td>Scheduled 3/06</td><td rowspan="2">1st 6/1/04 to 5/31/09</td><td rowspan="5">2nd (Unit 1) 6/1/04 to 5/31/14[1]

2nd (Unit 2) 6/1/04 to 5/31/14[1]</td><td rowspan="3">1st 6/1/04 to 5/31/09</td><td>Scheduled 3/05</td><td>12</td></tr>
<tr><td>15</td><td>Scheduled 3/08</td><td>Scheduled 3/07</td><td>13</td></tr>
<tr><td>16</td><td>Scheduled 3/10</td><td rowspan="3">2nd 6/1/09 to 5/31/14</td><td>Scheduled 3/09</td><td>14</td></tr>
<tr><td>17</td><td>Scheduled 3/12</td><td rowspan="2">2nd 6/1/09 to 5/31/14</td><td>Scheduled 3/11</td><td>15</td></tr>
<tr><td>18</td><td>Scheduled 3/14</td><td>Scheduled 3/13</td><td>16</td></tr>
</table>

Note 1: A request for use of subsequent ASME Section XI Code Edition and Addenda was submitted in accordance with Relief Request 3RR-10 which implements the 1998 Edition through the 2000 Addenda of ASME Section XI for the CISI Program as well as share a common interval start and end date with the ISI Program.

1.2 Background

PPL Susquehanna, LLC (PPL) obtained construction permits to build SSES Units 1 and 2 in November 1973. The docket numbers assigned to SSES are 50-387 for Unit 1 and 50-388 for Unit 2. After satisfactory plant construction and preoperational testing was completed, PPL was granted a full power operating license for Unit 1, NPF-14, and subsequently commenced commercial operation on June 8, 1983; the full power operating license for Unit 2, NPF-22, was granted and commercial operation commenced on February 12, 1985.

SSES's piping systems and associated components were designed and fabricated before the examination requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI were formalized and published. Since this plant was not specifically designed to meet the requirements of ASME Section XI, literal compliance is not feasible or practical within the limits of the current plant design. Limitations are likely to occur due to conditions such as accessibility, geometric configuration, and/or metallurgical characteristics. For some inspection categories, an alternate component may be selected for examination and the code statistical and distribution requirements can still be maintained. If Code required examination selection criteria cannot be met, a relief request will be submitted in accordance with 10CFR50.55a.

1.3 Second Interval ISI Program

Pursuant to the Code Of Federal Regulations, Title 10, Part 50, Section 55a, *Codes and standards*, (10CFR50.55a), Paragraph (g), *Inservice inspection requirements*, licensees were required to update their ISI Programs to meet the requirements of ASME Section XI once every ten years or inspection interval. The ISI Program was required to comply with the latest edition and addenda of the Code incorporated by reference in 10CFR50.55a twelve (12) months prior to the start of the interval per 10CFR50.55a(g)(4)(ii).

The SSES Second Interval ISI Program Plan was developed in accordance with the requirements of 10CFR50.55a including all published changes through August 6, 1992, and the 1989 Edition, No Addenda of ASME Section XI. This Program Plan addressed Subsections IWA, IWB, IWC, IWD, IWF, Mandatory Appendices, approved ASME Code Cases, approved alternatives through relief requests and SER's, and utilized Inspection Program B as defined therein.

1.4 Third Interval ISI Program

Per 10CFR50.55a(g), licensees are required to update their ISI Programs to meet the requirements of ASME Section XI once every ten years or inspection interval. The ISI Program is required to comply with the latest edition and addenda of the

Code incorporated by reference in 10CFR50.55a twelve (12) months prior to the start of the interval per 10CFR50.55a(g)(4)(ii).

The SSES Third Interval ISI Program Plan was developed in accordance with the requirements of 10CFR50.55a including all published changes through September 26, 2002, and the 1998 Edition through the 2000 Addenda of ASME Section XI, subject to the limitations and modifications contained within Paragraph (b) of the regulation. This ISI Program Plan addresses Subsections IWA, IWB, IWC, IWD, IWF, Mandatory Appendices, approved ASME Code Cases, approved alternatives through relief requests and SER's, and utilizes Inspection Program B as defined therein.

SSES has adopted the EPRI Topical Report TR-112657, Rev. B-A methodology, which was supplemented by Code Case N-578-1, for implementing risk-informed inservice inspections. The RISI Program will be in effect for the entire Third Inspection Interval. This approach replaces the categorization, selection, and examination volume requirements of ASME Section XI Categories B-F, B-J, C-F-1, and C-F-2 applicable to SSES with Category R-A as defined in Code Case N-578-1. Implementation of RISI Program is in accordance with Relief Request 3RR-01.

1.5 First Interval CISI Program

CISI examinations were originally invoked by amended regulations contained within a Final Rule issued by the Nuclear Regulatory Commission (NRC). The amended regulation incorporated the requirements of the 1992 Edition with the 1992 Addenda of the ASME Section XI, Subsections IWE and IWL, subject to specific modifications that were included in Paragraphs 10CFR50.55a(b)(2)(ix) and 10CFR50.55a(b)(2)(x).

The final rulemaking was published in the Federal Register on August 8, 1996 and specified an effective date of September 9, 1996. Implementation of the Subsection IWE and IWL Program from a scheduling standpoint was driven by the five year expedited implementation period per 10CFR50.55a(g)(6)(ii)(B), which specified that the examinations required to be completed by the end of the first period of the first inspection interval (per Table IWE-2412-1) be completed by the effective date (by September 9, 2001).

ASME Section XI Subsections IWE, IWL, Mandatory Appendices, approved ASME Code Cases, and approved alternatives through relief requests and SER's were added to the ISI Program midway through the Second Interval to address CISI. The First CISI Interval for the CISI Program was effective from September 9, 1996 to September 10, 2008 for both SSES Units 1 and 2.

The CISI Program Plan was developed and implemented prior to the required date, and examinations for the first and second periods were performed in

accordance with the First Interval schedule. As detailed in the submittal of the Third Interval ISI Program, the transition from the First to Second Interval CISI Program occurred approximately three years early to allow for a common interval date and Code of record between the ISI and CISI Programs. No significant examination issues were identified in this shortened First CISI Interval requiring application of additional augmented examination requirements as detailed within IWE-1240.

1.6 Second Interval CISI Program

Per 10CFR50.55a(g), licensees are required to update their CISI Programs to meet the requirements of ASME Section XI once every ten years or inspection interval. The CISI Program is required to comply with the latest edition and addenda of the Code incorporated by reference in 10CFR50.55a twelve (12) months prior to the start of the interval per 10CFR50.55a(g)(4)(ii).

The SSES Second Interval CISI Program Plan was developed in accordance with the requirements of 10CFR50.55a including all published changes through September 26, 2002, and the 1998 Edition through the 2000 Addenda of ASME Section XI, subject to the limitation listed in Paragraph (b)(2)(vi), and the modifications listed in Paragraphs (b)(2)(viii) and (b)(2)(ix) of the regulation.

This CISI Program Plan addresses Subsections IWE, IWL, Mandatory Appendices, approved ASME Code Cases, approved alternatives through relief requests and SER's, and utilizes Inspection Program B as defined therein.

1.7 Code of Federal Regulations 10CFR50.55a Requirements

There are certain paragraphs in 10CFR50.55a that list the limitations, modifications, and/or clarifications to the implementation requirements of ASME Section XI. These paragraphs in 10CFR50.55a that are applicable to SSES are detailed in Table 1.7-1.

TABLE 1.7-1
CODE OF FEDERAL REGULATIONS 10CFR50.55A REQUIREMENTS
Sheet 1 of 6

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(viii)(E)	**(CISI)** *Examination of concrete containments:* For Class CC applications, the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. For each inaccessible area identified, the licensee shall provide the following in the ISI Summary Report required by IWA-6000: (*1*) A description of the type and estimated extent of degradation, and the conditions that led to the degradation; (*2*) An evaluation of each area, and the result of the evaluation, and; (*3*) A description of necessary corrective actions.
10CFR50.55a(b)(2)(viii)(F)	**(CISI)** *Examination of concrete containments:* Personnel that examine containment concrete surfaces and tendon hardware, wires, or strands must meet the qualification provisions in IWA-2300. The "owner-defined" personnel qualification provisions in IWL-2310(d) are not approved for use.
10CFR50.55a(b)(2)(ix)(A)	**(CISI)** *Examination of metal containments and the liners of concrete containments:* For Class MC applications, the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. For each inaccessible area identified, the licensee shall provide the following in the ISI Summary Report as required by IWA-6000: (*1*) A description of the type and estimated extent of degradation, and the conditions that led to the degradation; (*2*) An evaluation of each area, and the result of the evaluation, and; (*3*) A description of necessary corrective actions.

TABLE 1.7-1
CODE OF FEDERAL REGULATIONS 10CFR50.55A REQUIREMENTS
Sheet 2 of 6

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(ix)(B)	**(CISI)** *Examination of metal containments and the liners of concrete containments:* When performing remotely the visual examinations required by Subsection IWE, the maximum direct examination distance specified in Table IWA-2210-1 may be extended and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.
10CFR50.55a(b)(2)(ix)(F)	**(CISI)** *Examination of metal containments and the liners of concrete containments:* VT-1 and VT-3 examinations must be conducted in accordance with IWA-2200. Personnel conducting examinations in accordance with the VT-1 or VT-3 examination method shall be qualified in accordance with IWA-2300. The "owner-defined" personnel qualification provisions in IWE-2330(a) for personnel that conduct VT-1 and VT-3 examinations are not approved for use.
10CFR50.55a(b)(2)(ix)(G)	**(CISI)** *Examination of metal containments and the liners of concrete containments:* The VT-3 examination method must be used to conduct the examinations in Items E1.12 and E1.20 of Table IWE-2500-1, and the VT-1 examination method must be used to conduct the examination in Item E4.11 of Table IWE-2500-1. An examination of the pressure-retaining bolted connections in Item E1.11 of Table IWE-2500-1 using the VT-3 examination method must be conducted once each interval. The "owner-defined" visual examination provisions in IWE-2310(a) are not approved for use for VT-1 and VT-3 examinations.

TABLE 1.7-1
CODE OF FEDERAL REGULATIONS 10CFR50.55A REQUIREMENTS
Sheet 3 of 6

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(ix)(H)	**(CISI)** *Examination of metal containments and the liners of concrete containments:* Containment bolted connections that are disassembled during the scheduled performance of the examinations in Item E1.11 of Table IWE-2500-1 must be examined using the VT-3 examination method. Flaws or degradation identified during the performance of a VT-3 examination must be examined in accordance with the VT-1 examination method. The criteria in the material specification or IWB-3517.1 must be used to evaluate containment bolting flaws or degradation. As an alternative to performing VT-3 examinations of containment bolted connections that are disassembled during the scheduled performance of Item E1.11, VT-3 examinations of containment bolted connections may be conducted whenever containment bolted connections are disassembled for any reason.
10CFR50.55a(b)(2)(ix)(I)	**(CISI)** *Examination of metal containments and the liners of concrete containments:* The ultrasonic examination acceptance standard specified in IWE-3511.3 for Class MC pressure-retaining components must also be applied to metallic liners of Class CC pressure-retaining components.
10CFR50.55a(b)(2)(xi)	**(ISI)** *Class 1 piping:* Licensees may not apply IWB-1220, "Components Exempt from Examination," of Section XI, 1989 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, and shall apply IWB-1220, 1989 Edition.

TABLE 1.7-1
CODE OF FEDERAL REGULATIONS 10CFR50.55A REQUIREMENTS
Sheet 4 of 6

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(xiii)	**(ISI)** *Flaws in Class 3 Piping:* Licensees may use the provisions of Code Case N-513, "Evaluation Criteria for Temporary Acceptance of Flaws in Class 3 Piping," Revision 0, and Code Case N-523-1, "Mechanical Clamping Devices for Class 2 and 3 Piping." Licensees choosing to apply Code Case N-523-1 shall apply all of its provisions. Licensees choosing to apply Code Case N-513 shall apply all of its provisions subject to the following: (A) When implementing Code Case N-513, the specific safety factors in paragraph 4.0 must be satisfied. (B) Code Case N-513 may not be applied to: (*1*) Components other than pipe and tube, such as pumps, valves, expansion joints, and heat exchangers; (*2*) Leakage through a flange gasket; (*3*) Threaded connections employing nonstructural seal welds for leakage prevention (through seal weld leakage is not a structural flaw, thread integrity must be maintained); and (*4*) Degraded socket welds.
10CFR50.55a(b)(2)(xviii)(A)	**(ISI)** *Certification of NDE personnel:* Level I and II nondestructive examination personnel shall be recertified on a 3-year interval in lieu of the 5-year interval specified in the 1997 Addenda and 1998 Edition of IWA-2314, and IWA-2314(a) and IWA-2314(b) of the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section.
10CFR50.55a(b)(2)(xviii)(B)	**(ISI)** *Certification of NDE personnel:* Paragraph IWA-2316 of the 1998 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, may only be used to qualify personnel that observe for leakage during system leakage and hydrostatic tests conducted in accordance with IWA-5211(a) and (b), 1998 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section.

TABLE 1.7-1
CODE OF FEDERAL REGULATIONS 10CFR50.55A REQUIREMENTS
Sheet 5 of 6

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(xviii)(C)	**(ISI)** *Certification of NDE personnel:* When qualifying visual examination personnel for VT-3 visual examinations under paragraph IWA-2317 of the 1998 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, the proficiency of the training must be demonstrated by administering an initial qualification examination and administering subsequent examinations on a 3-year interval.
10CFR50.55a(b)(2)(xix)	**(ISI)** *Substitution of alternative methods:* The provisions for the substitution of alternative examination methods, a combination of methods, or newly developed techniques in the 1997 Addenda of IWA-2240 must be applied. The provisions in IWA-2240, 1998 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, are not approved for use. The provisions in IWA-4520(c), 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, allowing the substitution of alternative examination methods, a combination of methods, or newly developed techniques for the methods specified in the Construction Code are not approved for use.
10CFR50.55a(b)(2)(xx)	**(SPT)** *System leakage tests:* When performing system leakage tests in accordance IWA-5213(a), 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, a 10-minute hold time after attaining test pressure is required for Class 2 and Class 3 components that are not in use during normal operating conditions, and no hold time is required for the remaining Class 2 and Class 3 components provided that the system has been in operation for at least 4 hours for insulated components or 10 minutes for uninsulated components.
10CFR50.55a(b)(2)(xxi)(B)	**(ISI)** *Table IWB-2500-1 examination requirements:* The provisions of Table IWB-2500-1, Examination Category B-G-2, Item B7.80, that are in the 1995 Edition are applicable only to reused bolting when using the 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section.

TABLE 1.7-1
CODE OF FEDERAL REGULATIONS 10CFR50.55A REQUIREMENTS
Sheet 6 of 6

10CFR50.55a Paragraphs	Limitations, Modifications, and Clarifications
10CFR50.55a(b)(2)(xxi)(C)	**(ISI)** *Table IWB-2500-1 examination requirements:* The provisions of Table IWB-2500-1, Examination Category B-K, Item B10.10, of the 1995 Addenda must be applied when using the 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section.

1.8 Code Cases

Per Footnote 6 of 10CFR50.55a, ASME Code Cases that have been determined to be suitable for use in ISI Program Plans by the NRC are listed in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability-ASME Section XI, Division 1." The approved Code Cases in Regulatory Guide 1.147 being utilized by SSES are included in Section 2.1.1 of this document. The latest version of Regulatory Guide 1.147 incorporated into this document is Revision 13. As this guide is revised, newly approved Code Cases will be assessed for plan implementation at SSES.

Footnote 6 also states that the use of other Code Cases (than those listed in Regulatory Guide 1.147) may be authorized by the Director of the office of Nuclear Reactor Regulation upon request pursuant to 10CFR50.55a(a)(3). Code Cases not approved for use in Regulatory Guide 1.147, which are being utilized by SSES through associated relief requests that are included in Section 8.0.

1.9 Relief Requests

In accordance with 10CFR50.55a, when a licensee either proposes alternatives to ASME Section XI requirements which provide an acceptable level of quality and safety, determines compliance with ASME Section XI requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, or determines that specific ASME Section XI requirements for inservice inspection are impractical, the licensee shall notify the NRC and submit information to support the determination.

The submittal of this information will be referred to in this document as a "relief request." Relief requests for the Third Interval are included in Section 8.0 of this document. The text of the relief requests contained in Section 8.0 will demonstrate that one of the following: the proposed alternatives provide an acceptable level of quality and safety per 10CFR50.55a(a)(3)(i), compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety per 10CFR50.55a(a)(3)(ii), or the code requirements are considered impractical per 10CFR50.55a(g)(5)(iii).

Per 10CFR50.55a Paragraphs (a)(3) and (g)(6)(i), the Director of the Office of Nuclear Reactor Regulation will evaluate relief requests and "may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility."

2.0 BASIS FOR INSERVICE INSPECTION PROGRAM

2.1 ASME Section XI Examination Requirements

As required by the 10CFR50.55a, this program was developed in accordance with the requirements detailed in the 1998 Edition through the 2000 Addenda, of the ASME Boiler and Pressure Vessel Code, Section XI, Division 1, Subsections IWA, IWB, IWC, IWD, IWE, IWF, IWL, Mandatory Appendices, Inspection Program B of IWA-2432, approved ASME Code Cases, and approved alternatives through relief requests and safety evaluation reports (SER's).

The ISI Program implements Appendix VIII "Performance Demonstration for Ultrasonic Examination Systems," ASME Section XI 1998 Edition through the 2000 Addenda as required by 10CFR50.55a(g)(6)(ii)(C). Appendix VIII requires qualification of the procedures, personnel, and equipment used to detect and size flaws in piping, bolting, and the reactor pressure vessel (RPV). Each organization (e.g., owner or vendor) will be required to have a written program to insure compliance with the requirements. These requirements are implemented through the Performance Demonstration Initiative (PDI) Program according to the schedule defined in 10CFR50.55a(g)(6)(ii)(C).

For the Third ISI Interval, SSES's inspection program for ASME Section XI Categories B-F, B-J, C-F-1, and C-F-2 will be governed by risk-informed requirements. The RISI Program methodology is described in the EPRI Topical Report TR-112657, Rev. B-A. To supplement the EPRI Topical Report, Code Case N-578-1 (as applicable per Relief Request 3RR-01) is also being used for the classification of piping structural elements under the RISI Program. The RISI Program scope will be implemented as an alternative to the 1998 Edition through the 2000 Addenda, ASME Section XI examination program for Class 1 B-F and B-J welds and Class 2 C-F-1 and C-F-2 welds in accordance with 10CFR50.55a(a)(3)(i). The basis for the resulting risk categorizations of the non-exempt Class 1 and 2 piping systems at SSES is defined and maintained in the Final Report, "Risk Informed Inservice Inspection Evaluation," as referenced in Section 10.0 of this document.

2.1.1 ASME Section XI Code Cases

As referenced by 10CFR50.55a Footnote 6 and allowed by NRC Regulatory Guide 1.147, Revision 13, the following Code Cases are being incorporated into the SSES ISI Program:

N-307-2 Revised Ultrasonic Examination Volume for Class 1 Bolting, Table IWB-2500-1, Examination Category B-G-1, When the Examinations Are Conducted From the End of the Bolt or Stud or From the Center-Drilled Hole

N-460	Alternative Examination Coverage for Class 1 and Class 2 Welds
N-498-4	Alternative Requirements for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems

Code Case N-498-4 is acceptable subject to the following condition specified in Regulatory Guide 1.147, Revision 13.

> The provisions of IWA-5213, "Test Condition Holding Times," 1989 Edition, are to be used.

Code Case N-498-4 is only being implemented as it pertains to Class 3 systems. (The portions of the Case that address Class 1 and 2 systems have been incorporated into the ASME Section XI code of record, 1998 Edition through the 2000 Addenda, applicable to the SSES Third Interval.)

N-504-2	Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping
N-516-2	Underwater Welding

Code Case N-516-2 is acceptable subject to the following condition specified in Regulatory Guide 1.147, Revision 13.

> Licensee must obtain NRC approval in accordance with 10CFR50.55a(a)(3) regarding the technique to be used in the weld repair or replacement of irradiated material underwater.

N-523-2	Mechanical Clamping Devices for Class 2 and 3 Piping
N-526	Alternative Requirements for Successive Inspections of Class 1 and 2 Vessels
N-532-1	Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000

Code Case N-532-1 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 13.

Code Case N-532-1 requires an Owner's Activity Report Form OAR-1 to be prepared and certified upon completion of each refueling outage. The OAR-1 forms must be submitted to the NRC within 90 days of the completion of the refueling outage.

N-546 Alternative Requirements for Qualification of VT-2 Examination Personnel

Code Case N-546 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 13.

(1) Qualify examination personnel by test to demonstrate knowledge of Section XI and plant specific procedures for VT-2 visual examination.
(2) Requalify examination personnel by examination every three years.
(3) This Code Case is applicable only to the performance of VT-2 examinations and may not be applied to other VT-2 functions such as verifying the adequacy of procedures and training VT-2 personnel.

N-552 Alternative Methods - Qualification for Nozzle Inside Radius Section from the Outside Surface

Code Case N-552 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 13.

To achieve consistency with the 10CFR50.55a rule change published September 22, 1999 (64 FR 51370), incorporating Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," to ASME Section XI, add the following to the specimen requirements:

"At least 50 percent of the flaws in the demonstration test set must be cracks and the maximum misorientation must be demonstrated with cracks. Flaws in nozzles

with bore diameters equal to or less than 4 inches may be notches."

Add to detection criteria, "The number of false calls must not exceed three."

N-588 Alternative to Reference Flaw Orientation of Appendix G for Circumferential Welds in Reactor Vessels

N-616 Alternative Requirements for VT-2 Visual Examination of Classes 1, 2, 3 Insulated Pressure Retaining Bolted Connections

Code Case N-616 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 13.

(1) Insulation must be removed for VT-2 examination during the system pressure test for any 17-4 PH stainless steel of 410 stainless steel stud or bolt aged at a temperature below 1100°F or with hardness above R_c 30.
(2) For A-286 stainless steel studs or bolts, the preload must be verified to be below 100 Ksi or the thermal insulation must be removed and the joint visually examined.
(3) For nuts conforming to SA-194, removal of the insulation for visual inspection is not necessary.
(4) Prior to conducting the VT-2 examination, the provisions of IWA-5213, "Test Condition Holding Times," 1989 Edition, are to be followed.

N-623 Deferral of Inspections of Shell-to-Flange and Head-to-Flange Welds of a Reactor Vessel

N-624 Successive Inspections

N-640 Alternative Reference Fracture Toughness for Development of P-T Limit Curves

N-647 Alternative to Augmented Examination Requirements of IWE-2500

Code Case N-647 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 13.

A VT-1 examination is to be used in lieu of the "detailed visual examination." [Note: Draft Regulatory Guide DG-1070, "Sampling Plans Used for Dedicating Simple Metallic Commercial Grade Items for Use in Nuclear Power Plants," is being developed to provide acceptable guidelines for sampling criteria.]

N-648-1 Alternative Requirements for Inner Radius Examination of Class 1 Reactor Vessel Nozzles

Code Case N-648-1 is acceptable subject to the following conditions specified in Regulatory Guide 1.147, Revision 13.

In place of a UT examination, licensees may perform a visual examination with enhanced magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria of Table IWB-3512-1 with limiting assumptions on the flaw aspect ratio. The provisions of Table IWB-2500-1, Examination Category B-D, continue to apply except that, in place of examination volumes, the surfaces to be examined are the external surfaces shown in the figures applicable to this table.

Additional Code Cases may be invoked in the future based on new Plan requirements or revisions to Regulatory Guide 1.147. Any Code Cases invoked in the future shall be in accordance with those approved for use in the latest published revision of Regulatory Guide 1.147 at that time.

2.2 Augmented Examination Requirements

Augmented examination requirements are those examinations that are performed above and beyond the requirements of ASME Section XI. Below is a summary of those examinations performed by SSES that are not specifically addressed by ASME Section XI, or the examinations that will be performed in addition to the requirements of the Code on a routine basis during the Third ISI Interval.

2.2.1 (AUG1), FSAR 6.6.8, Augmented Inservice Inspection To Protect Against Postulated Piping Failures

The (AUG1) augmented ISI Program defines the mandatory examination requirements of SSES FSAR Section 6.6.8 as it applies to SSES Units 1 and 2 "no break zone" piping, (i.e., piping for which no breaks have been postulated).

Implementation of the examination commitments is included in Section 7.0 of this ISI Program Plan and the associated ISI database.

2.2.2 (AUG2), Generic Letter 88-01, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping," Revision 2 / Supplement 1 to Generic Letter 88-01, NUREG 0313, "Technical Report on Material Selection and Process Guidelines for BWR Coolant Pressure Boundary Piping," Revision 2, and EPRI Report TR-113932 "BWR Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules (BWRVIP-75)," as conditionally approved by NRC final SER dated May 14, 2002.

These documents discuss the examination requirements for Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping. References to Generic Letter 88-01 (GL 88-01) within the ISI Program refer to the comprehensive commitments to all of these documents. The final SER of BWRVIP-75 revised the GL 88-01 inspection schedules. The BWRVIP-75 revised inspection schedules were based on consideration of inspection results and service experience gained by the industry since issuance of GL 88-01 and NUREG-0313, and includes additional knowledge regarding the benefits of improved BWR water chemistry.

The (AUG2) augmented ISI Program defines the mandatory examination requirements of the IGSCC Program, as applicable to SSES Units 1 and 2.

RISI regulations are being invoked for SSES in this ISI Program Plan. Under these new guidelines, Class 1 and 2 piping structural elements are inspected in accordance with EPRI Topical Report TR-112657, Rev. B-A and Code Case N-578-1. Per this Topical Report and Code Case, welds within the plant that are assigned to IGSCC Categories B through G will continue to meet existing IGSCC schedules, while IGSCC Category A welds will be subsumed into the RISI Program.

Implementation of the examination commitments is included in Section 7.0 of this ISI Program Plan and the associated ISI database.

2.2.3 (AUG8), Augmented Inservice Inspection For Vibration Induced Failures

This (AUG8) augmented ISI Program defines the nondestructive examination requirements established by PPL to investigate and identify areas, throughout SSES Units 1 and 2, where vibration induced cracking/failures could affect plant reliability and/or safety.

(AUG8) program examination requirements are based on industry group recommendations, BWR plant experience, and PPL site experience.

Implementation of the examination commitments is included in Section 7.0 of this ISI Program Plan and the associated ISI database.

2.2.4 (AUG9), BWR Vessel and Internals Project (BWRVIP) In-vessel Inspections

Increased awareness of the presence of in-vessel component degradation has led to the formation of the BWRVIP. BWRVIP is an association of BWR utilities focused on the common purpose of investigating and developing effective, acceptable approaches for addressing in-vessel component degradation through improved detection, mitigation, and/or repair techniques. In accordance with the BWRVIP charter, the organization is tasked with providing generic resolution to BWR issues and representing the member utilities in negotiating with the NRC for approval of the groups' recommended actions. PPL, as a member utility of the BWRVIP, has endorsed the objectives prescribed by the BWRVIP.

The BWRVIP is comprised of a series of Inspection & Evaluation Guidelines and documents that discuss RPV internals. The BWRVIP encompasses pertinent information and requirements presented in General Electric Service Information Letters (SIL's) and Rapid Information Communication Services Information Letters (RICSIL's).

The inspection recommendations of the BWRVIP for in-vessel components have been incorporated into the ISI Program as (AUG9) augmented ISI Program. All in-vessel components within the scope of the BWRVIP are included within the scope of the (AUG9) program.

Implementation of the examination commitments is included in Section 7.0 of this ISI Program Plan and the associated ISI database.

2.2.4.1 Boiling Water Reactor Owners' Group (BWROG) Report GE-NE-523-A71-0594, Revision 1, "Alternate BWR Feedwater Nozzle Inspection Requirements, August 1999, as conditionally approved by NRC final SER dated March 10, 2000

These documents discuss the latest examination requirements for BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking. The alternate approach was developed and submitted to the NRC by the BWROG. The NRC conditionally accepted these alternate requirements in the BWROG - Safety Evaluation of Proposed Alternative to BWR Feedwater Nozzle Inspections, dated June 5, 1998.

This part of the (AUG9) augmented ISI Program defines the mandatory examination requirements of the BWROG for ***In-vessel examinations only*** that are applicable to SSES Units 1 and 2 feedwater nozzles and spargers.

PPL letters PLA-5253 dated November 2, 2000, and PLI-90116 dated December 18, 2000, modified the commitments of letters PLA-807 dated June 11, 1981, and PLA-1075 dated May 3, 1982, for Ultrasonic inspections of the feedwater nozzles from the AUG3 program to ASME Section XI requirements of once every 10 years. Furthermore the requirements of the in-vessel PT examinations are eliminated as long as PPL continues to follow the BWROG's topical report and criteria in the NRC final SER dated June 5, 1998.

Augmented inservice inspections of BWROG associated with the Control Rod Drive Return Line (CRDRL) nozzle/piping system are not required at SSES. The CRDRL nozzles on both Units have been cut and capped and the CRDRL eliminated; therefore, no further actions are required.

Note: the inspection requirements for BWROG Report GE-NE-523-A71-0594, Revision 1 are redundant to inspections required by the BWRVIP.

This was previously the (AUG3) augmented ISI Program in the 2nd Interval ISI Program Plan.

2.2.4.2 BWR Jet Pump Assembly Failure (NUREG/CR-3052)

This part of the (AUG9) augmented ISI Program defines the mandatory examination requirements established in response to IE Bulletin 80-07, as described in NUREG/CR-3052, regarding BWR jet pump hold down beam integrity.

Note: the inspection requirements for jet pump assembly failure are redundant to inspections required by the BWRVIP.

This was previously the (AUG5) augmented ISI Program in the 2nd Interval ISI Program Plan.

2.2.4.3 Augmented Inservice Inspection Of Non-Code Reactor Pressure Vessel Internals: Visual Examination

This part of the (AUG9) augmented ISI Program defines the nondestructive examination requirements established by PPL to investigate and visually examine surfaces/areas within the RPV internals where cracking/failures could affect RPV internals reliability and/or safety.

Components to be examined and frequencies of examination vary; examination requirements are based on industry group recommendations, BWR plant experience, and PPL site experience.

Note: the inspection requirements for augmented inservice inspection of non-code RPV Internals - visual examination are redundant to inspections required by the BWRVIP.

This was previously the (AUG6) augmented ISI Program in the 2nd Interval ISI Program Plan.

2.2.4.4 Augmented Inservice Inspection Of Non-Code Reactor Pressure Vessel Internals: Ultrasonic Examination

This part of the (AUG9) augmented ISI Program defines the nondestructive examination requirements established by PPL to investigate and ultrasonically examine components within the RPV internals where cracking/failures could affect RPV internals reliability and/or safety.

Components to be examined and frequencies of examination vary; examination requirements are based on industry group recommendations, BWR plant experience, and PPL site experience.

Note: the inspection requirements for augmented inservice inspection of non-code RPV Internals - ultrasonic examination are redundant to inspections required by the BWRVIP.

This was previously the (AUG7) augmented ISI Program in the 2nd Interval ISI Program Plan.

2.2.5 NUREG-0803, Generic Safety Evaluation Report Regarding Integrity of BWR Scram System Piping

This document requires periodic ISI for the scram discharge volume (SDV) of the Control Rod Drive system. The SDV piping at SSES is designed to ASME Section III, Class 2 and is within the scope of the ISI Program. As such, SDV piping components and their supports are subject to the applicable ASME Section XI ISI requirements for Class 2; no additional augmented inservice inspections are required.

2.2.6 10CFR50.55a(g)(6)(ii)(A), Augmented Examination of Reactor Pressure Vessel

Effective September 8, 1992, 10CFR50.55a(g)(6)(ii)(A) required implementation of augmented inservice inspections of RPV shell welds - Item Number B1.10 of Examination Category B-A of ASME Section XI. In addition, all previously granted relief requests pertaining to these welds were revoked. The interval in effect on September 8, 1992 was the First ISI Interval for both SSES Units 1 and 2. Per the PPL letter PLA-4011, R. G. Byram (PPL) to C. L. Miller (USNRC), dated September 7, 1993 (RE: Response to Requests for Additional Information Dated 2/11/93 and 5/20/93 on First 10-Year Inservice Inspection (ISI) Program Plan), the SSES Units 1 and 2 ISI Program complied with the regulations for the First ISI Interval.

The Second ISI Interval ISI Program for SSES Units 1 and 2 was prepared in accordance with, and complied with, the 1989 Edition of ASME Section XI, as referenced in 10CFR50.55a(g)(6)(ii)(A)(2). Initially, RPV shell welds were ultrasonically examined during the Second ISI Interval with 96% examination coverage (based on total overall weld length), as evidenced by examinations completed during the First ISI Interval. This examination coverage was achieved using ultrasonic examination techniques conducted from the o.d. of the RPV. RPV shell welds AD (circumferential), B-K and B-M (longitudinal), exhibited limited examination coverage due to permanent physical obstructions. Second ISI Interval Relief Request 2RR-04 originally addressed these welds. Then, the Second ISI Interval Relief Request 2RR-22 was written by PPL and approval was authorized by the NRC for permanent relief of the RPV shell welds for the rest of the interval and the balance of plant life (See below for more details).

This Third ISI Interval augmented ISI Program addresses the specific steps taken by SSES Units 1 and 2 to satisfy the NRC augmented examination requirements mandated by 10CFR50.55a(g)(6)(ii)(A), including alternatives agreed to by the NRC and PPL.

The examinations of RPV shell welds, Examination Category B-A, Item Number B1.10, at SSES, will be conducted in accordance with Relief Request 3RR-05. This Third ISI Interval Relief Request 3RR-05 was previously submitted and approved under the Second ISI Interval ISI Program Plan as Relief Request 2RR-22. The approval authorized under NRC final SER dated February 28, 2001 was for permanent relief and thus applies to the balance of plant life, including this Third ISI Interval. The planned alternative program to the 90% coverage of each weld uses the recommendations of BWRVIP-05 as a basis for doing no additional examinations beyond the described "best effort" approach.

Relief has been authorized to not perform examinations of Examination Category B-A, Item Number B1.11 circumferential (horizontal) welds for the life of the current license. The examinations of the Examination Category B-A, Item Number B1.12 Longitudinal (vertical) welds need only be performed to the maximum extent practical using automated ultrasonic testing (UT) techniques. Manual UT examinations of volumes missed by automated UT techniques are not required.

SSES compliance with 10CFR50.55a(g)(6)(ii)(A) is documented in a letter to the NRC dated November 7, 2000. Subsequently, the NRC issued a SER dated February 28, 2001 accepting Second ISI Interval Relief Request 2RR-22.

Implementation of the examination commitments is included in Sections 7.0 and 8.0 of this ISI Program Plan and the associated ISI database.

2.2.7 NRC NUREG-0737, dated November 1980

This document discusses TMI Action Plan Requirements, and includes requirements in Item III.D.1.1 for leak testing and periodic visual examinations of systems outside of primary containment, which could contain highly radioactive fluids during a serious transient or accident.

SSES has committed to the requirements of this document item as discussed in Technical Specifications Section 5.4.1. Commitments made concerning NUREG-0737 are required to be maintained per the SSES Operating Licenses.

Implementation of the SSES program addressing these requirements is included in the Technical Specifications Leakage Quantification Program.

2.3 System Classifications and ISIM Boundary Drawings

The ISI Classification Basis Document details those systems that are ISI Class 1, 2, 3, or MC that fall within the ISI scope of examinations. The concrete containment structure is ISI Class CC and is shown on the containment roll-out drawings. Below is a summary of the classification criteria used within the ISI Classification Basis Document.

Each safety related, fluid system containing water, steam, air, oil, etc. included in the SSES FSAR was reviewed to determine which safety functions they perform during all modes of system and plant operation. Based on these safety functions, the systems and components were evaluated per classification documents. The systems were then designated as ISI Class 1, 2, 3, MC, or non-classed accordingly. This evaluation followed the guidelines of FSAR Sections 5.2.4 and 6.6. Safety related portions of systems are defined by the Piping and Instrumentation Diagrams (P&ID's) with a three-letter code.

When a particular group of components is identified as performing a ISI Class 1, 2, or 3 safety function, the components are further reviewed to assure the interfaces (boundary valves and boundary barriers) meet the criteria set by 10CFR50.2, 10CFR50.55a(c)(1), 10CFR50.55a(c)(2), and Regulatory Guide 1.26. Although SSES is not committed to or licensed in accordance with these documents, Standard Review Plan (SRP) 3.2.2 "System Quality Group Classification," and American National Standards Institute/American Nuclear Society (ANSI/ANS)-58.14-1993 "Safety and Pressure Integrity Classification Criteria For Light Water Reactors," were also used for guidance in determining the classification boundaries when 10CFR and Regulatory Guide 1.26 did not address a given situation. The valve positions shown on the system flow diagrams are assumed to be the normal positions during system operation unless otherwise noted.

ISI classification boundaries are defined by the Inservice Inspection ISIM Drawings with a classification line code. A summary of the line coding system used on the ISIM Drawings to identify safety related systems or portions of systems subject to examination is included on Drawing ISIM-100-1. A specific line code was used for classifying nonexempt ASME Section XI components. The remaining coding shown on ISIM-100-1 (EX-1, EX-2, EX-3, EX-4, EX-5) was used to identify exempt ASME Section XI components.

The systems and components (piping, pumps, valves, vessels, etc.), which are subject to the examinations of Articles IWB-2000, IWC-2000, IWD-2000, IWE-2000, IWF-2000, and IWL-2000 are identified on the ISIM Drawings as detailed in Table 2.3-1.

TABLE 2.3-1
SSES ISI CLASSIFICATION ISIM BOUNDARY DRAWINGS
Sheet 1 of 2

UNIT 1 & Common	UNIT 2	TITLE
ISIM-101-1	ISIM-2101-1	Main Steam
ISIM-101-3	ISIM-2101-3	Main Steam
ISIM-109-2	ISIM-2109-2	Service Water
ISIM-110-1	ISIM-2110-1	Service Water
ISIM-111-1	ISIM-2111-1	Emergency Service Water
ISIM-111-2		Emergency Service Water
ISIM-111-3		Emergency Service Water
ISIM-112-1	ISIM-2112-1	RHR Service Water
ISIM-112-2		RHR Service Water
ISIM-123-12	ISIM-2123-10	Process Sampling
ISIM-134-1		Diesel Aux.
ISIM-141-1	ISIM-2141-1	Nuclear Boiler
ISIM-141-2	ISIM-2141-2	Nuclear Boiler
ISIM-142-1	ISIM-2142-1	Nuclear Boiler Vessel Instrumentation
ISIM-143-1	ISIM-2143-1	Reactor Recirculation
ISIM-144-1	ISIM-2144-1	Reactor Water Clean-up
	ISIM-2144-2	Reactor Water Clean-up
ISIM-147-1	ISIM-2147-1	Control Rod Drive - Part B
ISIM-147-2	ISIM-2147-2	Control Rod Drive - Part B
ISIM-148-1	ISIM-2148-1	Standby Liquid Control
ISIM-149-1	ISIM-2149-1	Reactor Core Isolation Cooling
ISIM-150-1	ISIM-2150-1	RCIC Turbine - Pump
ISIM-151-1	ISIM-2151-1	Residual Heat Removal
ISIM-151-2	ISIM-2151-2	Residual Heat Removal
ISIM-151-3	ISIM-2151-3	Residual Heat Removal
ISIM-151-4	ISIM-2151-4	Residual Heat Removal

TABLE 2.3-1
SSES ISI CLASSIFICATION ISIM BOUNDARY DRAWINGS
Sheet 2 of 2

UNIT 1 & Common	UNIT 2	TITLE
ISIM-152-1	ISIM-2152-1	Core Spray
ISIM-153-1	ISIM-2153-1	Fuel Pool Cooling and Cleanup
ISIM-155-1	ISIM-2155-1	High Pressure Coolant Injection
ISIM-156-1	ISIM-2156-1	HPCI Turbine and Pump
	ISIM-2172-1	Emergency Switchgear Room Cooling
ISIM-186-1		Control Structure Chilled Water
ISIM-186-2		Control Structure Chilled Water
ISIM-186-3		Control Structure Chilled Water (In the course of preparation)
ISIM-186-4		Control Structure Chilled Water (In the course of preparation)

2.4 ISI Isometric and Component Drawings for Nonexempt ISI Class Components and Supports

ISI isometric and component drawings were developed to detail the ISI Code Class 1, 2, 3, MC, and CC components (welds, bolting, etc.) and support locations at SSES. These components and supports are identified on the ISI isometric and component drawings listed in Tables 2.4-1, 2.4-2, 2.4-3, 2.4-4, 2.4-5, and 2.4-6.

SSES's ISI Program, including the ISI Database, ISI Classification Basis Document, and ISI Selection Document, addresses the non-exempt components, which require examination and testing.

A summary of SSES Units 1 and 2 ASME Section XI nonexempt components and supports is included in Section 7.0.

TABLE 2.4-1
SSES ISI ISOMETRIC DRAWINGS (WELD IDENTIFICATION)
Sheet 1 of 5

UNIT 1 & Common	UNIT 2	TITLE
ISI-DBA-101-1	ISI-DBA-201-1	Reactor Water Clean-up
ISI-DBA-101-2	ISI-DBA-201-2	Reactor Water Clean-up
ISI-DBA-102-1	ISI-DBA-202-1	High Pressure Coolant Injection
	ISI-DBA-202-2	High Pressure Coolant Injection
ISI-DBA-105-1	ISI-DBA-205-1	Reactor Core Isolation Cooling
ISI-DBA-112-1	ISI-DBA-212-1	Nuclear Boiler
ISI-DBB-101-1	ISI-DBB-201-1	Main Steam
ISI-DBB-102-1	ISI-DBB-202-1	Main Steam
ISI-DBB-103-1	ISI-DBB-203-1	Main Steam
ISI-DBB-104-1	ISI-DBB-204-1	Main Steam
ISI-DBB-105-1	ISI-DBB-205-1	Main Steam
ISI-DBB-105-2	ISI-DBB-205-2	Main Steam
ISI-DBB-107-1	ISI-DBB-207-1	Residual Heat Removal
ISI-DBB-107-2	ISI-DBB-207-2	Residual Heat Removal
ISI-DBB-113-1	ISI-DBB-213-1	Core Spray
ISI-DBB-113-2	ISI-DBB-213-2	Core Spray
ISI-DBB-114-1	ISI-DBB-214-1	High Pressure Coolant Injection
ISI-DBB-117-1	ISI-DBB-217-1	High Pressure Coolant Injection
ISI-DBB-118-1	ISI-DBB-218-1	Feedwater
ISI-DBB-119-1	ISI-DBB-219-1	Feedwater
ISI-DBB-120-1	ISI-DBB-220-1	High Pressure Coolant Injection
ISI-DBB-120-2	ISI-DBB-220-2	High Pressure Coolant Injection
ISI-DBB-121-1	ISI-DBB-221-1	Reactor Core Isolation Cooling
ISI-DBB-121-2	ISI-DBB-221-2	Reactor Core Isolation Cooling
ISI-DBB-121-3	ISI-DBB-221-3	Reactor Core Isolation Cooling
ISI-DBB-129-1	ISI-DBB-229-1	Main Steam

TABLE 2.4-1
SSES ISI ISOMETRIC DRAWINGS (WELD IDENTIFICATION)
Sheet 2 of 5

UNIT 1 & Common	UNIT 2	TITLE
ISI-DCA-102-1	ISI-DCA-202-1	Reactor Water Clean-up
ISI-DCA-102-2	ISI-DCA-202-2	Reactor Water Clean-up
ISI-DCA-103-1	ISI-DCA-203-1	Reactor Water Clean-up
ISI-DCA-107-1	ISI-DCA-207-1	Core Spray
ISI-DCA-107-2	ISI-DCA-207-2	Core Spray
ISI-DCA-108-1	ISI-DCA-208-1	Residual Heat Removal
ISI-DCA-109-1	ISI-DCA-209-1	Core Spray
ISI-DCA-109-2	ISI-DCA-209-2	Core Spray
ISI-DCA-110-1	ISI-DCA-210-1	Residual Heat Removal
ISI-DCA-110-2	ISI-DCA-210-2	Residual Heat Removal
ISI-DCA-111-1	ISI-DCA-211-1	Residual Heat Removal
ISI-DCA-111-2	ISI-DCA-211-2	Residual Heat Removal
	ISI-DCA-211-3	Residual Heat Removal
ISI-DCA-141-1	ISI-DCA-241-1	Reactor Recirculation
ISI-DCA-142-1	ISI-DCA-242-1	Reactor Recirculation
ISI-DCB-102-1	ISI-DCB-202-1	Residual Heat Removal
ISI-DLA-101-1	ISI-DLA-201-1	Feedwater
ISI-DLA-102-1	ISI-DLA-202-1	Feedwater
ISI-DLA-103-1	ISI-DLA-203-1	Feedwater
ISI-DLA-104-1	ISI-DLA-204-1	Feedwater
ISI-DLA-104-2		Feedwater
ISI-DLA-104-3		Feedwater
ISI-DLA-104-4		Feedwater
ISI-EBB-102-1	ISI-EBB-202-1	High Pressure Coolant Injection
ISI-EBB-103-1	ISI-EBB-203-1	Reactor Core Isolation Cooling
ISI-GBB-101-1	ISI-GBB-201-1	Core Spray

TABLE 2.4-1
SSES ISI ISOMETRIC DRAWINGS (WELD IDENTIFICATION)
Sheet 3 of 5

UNIT 1 & Common	UNIT 2	TITLE
ISI-GBB-101-2	ISI-GBB-201-2	Core Spray
ISI-GBB-101-3	ISI-GBB-201-3	Core Spray
ISI-GBB-101-4	ISI-GBB-201-4	Core Spray
ISI-GBB-103-1	ISI-GBB-203-1	Core Spray
ISI-GBB-103-2	ISI-GBB-203-2	Core Spray
ISI-GBB-104-1	ISI-GBB-204-1	Residual Heat Removal
ISI-GBB-104-2	ISI-GBB-204-2	Residual Heat Removal
ISI-GBB-104-3	ISI-GBB-204-3	Residual Heat Removal
ISI-GBB-104-4	ISI-GBB-204-4	Residual Heat Removal
ISI-GBB-105-1	ISI-GBB-205-1	Residual Heat Removal
ISI-GBB-105-2	ISI-GBB-205-2	Residual Heat Removal
ISI-GBB-106-1	ISI-GBB-206-1	Residual Heat Removal
ISI-GBB-106-2	ISI-GBB-206-2	Residual Heat Removal
ISI-GBB-107-1	ISI-GBB-207-1	Residual Heat Removal
ISI-GBB-107-2	ISI-GBB-207-2	Residual Heat Removal
ISI-GBB-108-1	ISI-GBB-208-1	Residual Heat Removal
ISI-GBB-109-1	ISI-GBB-209-1	Residual Heat Removal
ISI-GBB-109-2	ISI-GBB-209-2	Residual Heat Removal
ISI-GBB-112-1	ISI-GBB-212-1	Residual Heat Removal
ISI-GBB-112-2	ISI-GBB-212-2	Residual Heat Removal
ISI-GBB-113-1	ISI-GBB-213-1	Residual Heat Removal
ISI-GBB-115-1	ISI-GBB-215-1	Residual Heat Removal
ISI-GBB-116-1	ISI-GBB-216-1	Residual Heat Removal
ISI-GBB-116-2	ISI-GBB-216-2	Residual Heat Removal
ISI-GBB-117-1	ISI-GBB-217-1	Residual Heat Removal
ISI-GBB-119-1	ISI-GBB-219-1	Residual Heat Removal

TABLE 2.4-1
SSES ISI ISOMETRIC DRAWINGS (WELD IDENTIFICATION)
Sheet 4 of 5

UNIT 1 & Common	UNIT 2	TITLE
ISI-GBB-119-2	ISI-GBB-219-2	Residual Heat Removal
ISI-HBB-101-1	ISI-HBB-201-1	Reactor Core Isolation Cooling
ISI-HBB-101-2	ISI-HBB-201-2	Reactor Core Isolation Cooling
ISI-HBB-104-1	ISI-HBB-204-1	Core Spray
ISI-HBB-104-2	ISI-HBB-204-2	Core Spray
ISI-HBB-107-1	ISI-HBB-207-1	High Pressure Coolant Injection
ISI-HBB-108-1	ISI-HBB-208-1	High Pressure Coolant Injection
ISI-HBB-108-2	ISI-HBB-208-2	High Pressure Coolant Injection
ISI-HBB-109-1	ISI-HBB-209-1	High Pressure Coolant Injection
ISI-HBB-110-1	ISI-HBB-210-1	Residual Heat Removal
ISI-HBB-110-2	ISI-HBB-210-2	Residual Heat Removal
ISI-HBB-110-3	ISI-HBB-210-3	Residual Heat Removal
ISI-HBB-110-4	ISI-HBB-210-4	Residual Heat Removal
ISI-HBB-111-2	ISI-HBB-211-2	Residual Heat Removal
ISI-SPDCA-102-1	ISI-SPDCA-202-1	Reactor Recirculation
ISI-SPDCA-102-2	ISI-SPDCA-202-2	Reactor Recirculation
	ISI-SPDCA-203-3	Reactor Water Clean-up
ISI-SPDCA-103-6		Reactor Water Clean-up
ISI-SPDCA-106-1	ISI-SPDCA-206-1	Standby Liquid Control
ISI-SPDCA-106-2	ISI-SPDCA-206-2	Standby Liquid Control
ISI-SPDCA-106-3	ISI-SPDCA-206-3	Standby Liquid Control
ISI-SPDCA-106-4	ISI-SPDCA-206-4	Standby Liquid Control
	ISI-SPDCA-206-5	Standby Liquid Control
ISI-VBB-101-1	ISI-VBB-201-1	High Pressure Coolant Injection
ISI-VBB-102-1	ISI-VBB-202-1	Control Rod Drive
ISI-VBB-102-2	ISI-VBB-202-2	Control Rod Drive

TABLE 2.4-1
SSES ISI ISOMETRIC DRAWINGS (WELD IDENTIFICATION)
Sheet 5 of 5

UNIT 1 & Common	UNIT 2	TITLE
ISI-VNB-B21-1		Main Steam
ISI-VNB-B21-2		Main Steam
	ISI-VNB-B21-3	Main Steam
	ISI-VNB-B21-4	Main Steam
ISI-VRR-B31-1		Reactor Recirculation
ISI-VRR-B31-2		Reactor Recirculation
	ISI-VRR-B31-3	Reactor Recirculation
	ISI-VRR-B31-4	Reactor Recirculation

TABLE 2.4-2
SSES ISI ISOMETRIC DRAWINGS (HANGER IDENTIFICATION)
Sheet 1 of 8

UNIT 1 & Common	UNIT 2	TITLE
ISI-DBA-101-1H	ISI-DBA-201-1H	Reactor Water Clean-up
ISI-DBA-101-2H	ISI-DBA-201-2H	Reactor Water Clean-up
ISI-DBA-102-1H	ISI-DBA-202-1H	High Pressure Coolant Injection
ISI-DBA-105-1H	ISI-DBA-205-1H	Reactor Core Isolation Cooling
ISI-DBB-101-1H	ISI-DBB-201-1H	Main Steam
ISI-DBB-102-1H	ISI-DBB-202-1H	Main Steam
ISI-DBB-103-1H	ISI-DBB-203-1H	Main Steam
ISI-DBB-104-1H	ISI-DBB-204-1H	Main Steam
ISI-DBB-105-1H	ISI-DBB-205-1H	Main Steam
ISI-DBB-105-2H	ISI-DBB-205-2H	Main Steam
ISI-DBB-107-1H	ISI-DBB-207-1H	Residual Heat Removal
ISI-DBB-107-2H	ISI-DBB-207-2H	Residual Heat Removal
ISI-DBB-113-1H	ISI-DBB-213-1H	Core Spray
ISI-DBB-113-2H	ISI-DBB-213-2H	Core Spray
ISI-DBB-114-1H	ISI-DBB-214-1H	High Pressure Coolant Injection
ISI-DBB-115-1H	ISI-DBB-215-1H	Residual Heat Removal
	ISI-DBB-217-1H	High Pressure Coolant Injection
ISI-DBB-118-1H	ISI-DBB-218-1H	Feedwater
ISI-DBB-119-1H	ISI-DBB-219-1H	Feedwater
ISI-DBB-120-1H	ISI-DBB-220-1H	High Pressure Coolant Injection
ISI-DBB-120-2H	ISI-DBB-220-2H	High Pressure Coolant Injection
ISI-DBB-121-1H	ISI-DBB-221-1H	Reactor Core Isolation Cooling
ISI-DBB-121-2H	ISI-DBB-221-2H	Reactor Core Isolation Cooling
	ISI-DBB-221-3H	Reactor Core Isolation Cooling
ISI-DBB-122-1H	ISI-DBB-222-1H	Reactor Water Clean-up
ISI-DBB-122-2H	ISI-DBB-222-2H	Reactor Water Clean-up

TABLE 2.4-2
SSES ISI ISOMETRIC DRAWINGS (HANGER IDENTIFICATION)
Sheet 2 of 8

UNIT 1 & Common	UNIT 2	TITLE
ISI-DBB-129-1H	ISI-DBB-229-1H	Main Steam
ISI-DCA-102-1H	ISI-DCA-202-1H	Reactor Water Clean
ISI-DCA-102-2H	ISI-DCA-202-2H	Reactor Water Clean
ISI-DCA-103-1H	ISI-DCA-203-1H	Reactor Water Clean-up
ISI-DCA-107-1H	ISI-DCA-207-1H	Core Spray
ISI-DCA-107-2H	ISI-DCA-207-2H	Core Spray
ISI-DCA-108-1H	ISI-DCA-208-1H	Residual Heat Removal
ISI-DCA-109-1H	ISI-DCA-209-1H	Core Spray
ISI-DCA-109-2H	ISI-DCA-209-2H	Core Spray
ISI-DCA-110-1H	ISI-DCA-210-1H	Residual Heat Removal
ISI-DCA-110-2H	ISI-DCA-210-2H	Residual Heat Removal
ISI-DCA-111-1H	ISI-DCA-211-1H	Residual Heat Removal
ISI-DCA-111-2H	ISI-DCA-211-2H	Residual Heat Removal
	ISI-DCA-211-3H	Residual Heat Removal
ISI-DCA-141-1H	ISI-DCA-241-1H	Reactor Recirculation
ISI-DCA-142-1H	ISI-DCA-242-1H	Reactor Recirculation
ISI-DCB-102-1H	ISI-DCB-202-1H	Residual Heat Removal
ISI-DLA-101-1H	ISI-DLA-201-1H	Feedwater
ISI- DLA-102-1H	ISI- DLA-202-1H	Feedwater
ISI- DLA-103-1H	ISI- DLA-203-1H	Feedwater
ISI- DLA-104-1H	ISI- DLA-204-1H	Feedwater
ISI-EBB-102-1H	ISI-EBB-202-1H	High Pressure Coolant Injection
ISI- EBB -103-1H	ISI- EBB -203-1H	Reactor Core Isolation Cooling
ISI-GBB-101-1H	ISI-GBB-201-1H	Core Spray
ISI-GBB-101-2H	ISI-GBB-201-2H	Core Spray
ISI-GBB-101-3H	ISI-GBB-201-3H	Core Spray

TABLE 2.4-2
SSES ISI ISOMETRIC DRAWINGS (HANGER IDENTIFICATION)
Sheet 3 of 8

UNIT 1 & Common	UNIT 2	TITLE
ISI-GBB-101-4H	ISI-GBB-201-4H	Core Spray
ISI-GBB-103-1H	ISI-GBB-203-1H	Core Spray
ISI-GBB-103-2H	ISI-GBB-203-2H	Core Spray
ISI-GBB-104-1H	ISI-GBB-204-1H	Residual Heat Removal
ISI-GBB-104-2H	ISI-GBB-204-2H	Residual Heat Removal
ISI-GBB-104-3H	ISI-GBB-204-3H	Residual Heat Removal
ISI-GBB-104-4H	ISI-GBB-204-4H	Residual Heat Removal
ISI-GBB-105-1H	ISI-GBB-205-1H	Residual Heat Removal
ISI-GBB-105-2H	ISI-GBB-205-2H	Residual Heat Removal
ISI-GBB-106-1H	ISI-GBB-206-1H	Residual Heat Removal
ISI-GBB-106-2H	ISI-GBB-206-2H	Residual Heat Removal
ISI-GBB-107-1H	ISI-GBB-207-1H	Residual Heat Removal
ISI-GBB-107-2H	ISI-GBB-207-2H	Residual Heat Removal
ISI-GBB-108-1H	ISI-GBB-208-1H	Residual Heat Removal
ISI-GBB-109-1H	ISI-GBB-209-1H	Residual Heat Removal
ISI-GBB-109-2H	ISI-GBB-209-2H	Residual Heat Removal
ISI-GBB-112-1H	ISI-GBB-212-1H	Residual Heat Removal
ISI-GBB-112-2H	ISI-GBB-212-2H	Residual Heat Removal
ISI-GBB-113-1H	ISI-GBB-213-1H	Residual Heat Removal
ISI-GBB-115-1H	ISI-GBB-215-1H	Residual Heat Removal
ISI-GBB-116-1H	ISI-GBB-216-1H	Residual Heat Removal
ISI-GBB-116-2H	ISI-GBB-216-2H	Residual Heat Removal
ISI-GBB-117-1H	ISI-GBB-217-1H	Residual Heat Removal
	ISI-GBB-219-1H	Residual Heat Removal
	ISI-GBB-219-2H	Residual Heat Removal
ISI-GBC-101-10H	ISI-GBC-201-10H	Main Steam

TABLE 2.4-2
SSES ISI ISOMETRIC DRAWINGS (HANGER IDENTIFICATION)
Sheet 4 of 8

UNIT 1 & Common	UNIT 2	TITLE
ISI-GBC-101-11H	ISI-GBC-201-11H	Main Steam
ISI-GBC-101-12H	ISI-GBC-201-12H	Main Steam
ISI-GBC-101-13H	ISI-GBC-201-13H	Main Steam
ISI-GBC-101-14H	ISI-GBC-201-14H	Main Steam
ISI-GBC-101-15H	ISI-GBC-201-15H	Main Steam
ISI-GBC-101-16H	ISI-GBC-201-16H	Main Steam
ISI-GBC-101-17H	ISI-GBC-201-17H	Main Steam
ISI-GBC-101-18H	ISI-GBC-201-18H	Main Steam
ISI-GBC-101-19H	ISI-GBC-201-19H	Main Steam
ISI-GBC-101-1H		Main Steam
ISI-GBC-101-20H	ISI-GBC-201-20H	Main Steam
ISI-GBC-101-21H	ISI-GBC-201-21H	Main Steam
ISI-GBC-101-22H	ISI-GBC-201-22H	Main Steam
ISI-GBC-101-23H	ISI-GBC-201-23H	Main Steam
ISI-GBC-101-24H		Main Steam
ISI-GBC-101-25H		Main Steam
ISI-GBC-101-26H	ISI-GBC-201-26H	Main Steam
ISI-GBC-101-27H	ISI-GBC-201-27H	Main Steam
ISI-GBC-101-28H	ISI-GBC-201-28H	Main Steam
ISI-GBC-101-29H	ISI-GBC-201-29H	Main Steam
ISI-GBC-101-2H		Main Steam
ISI-GBC-101-30H		Main Steam
ISI-GBC-101-31H		Main Steam
ISI-GBC-101-32H	ISI-GBC-201-32H	Main Steam
	ISI-GBC-201-33H	Main Steam
	ISI-GBC-201-35H	Main Steam

TABLE 2.4-2
SSES ISI ISOMETRIC DRAWINGS (HANGER IDENTIFICATION)
Sheet 5 of 8

UNIT 1 & Common	UNIT 2	TITLE
ISI-GBC-101-3H		Main Steam
ISI-GBC-101-4H	ISI-GBC-201-4H	Main Steam
ISI-GBC-101-5H	ISI-GBC-201-5H	Main Steam
ISI-GBC-101-6H	ISI-GBC-201-6H	Main Steam
ISI-GBC-101-7H	ISI-GBC-201-7H	Main Steam
ISI-GBC-101-8H	ISI-GBC-201-8H	Main Steam
ISI-GBC-101-9H	ISI-GBC-201-9H	Main Steam
	ISI-GBC-205-1H	Main Steam
	ISI-GBC-205-2H	Main Steam
ISI-HBB-101-1H	ISI-HBB-201-1H	Reactor Core Isolation Cooling
ISI-HBB-101-2H	ISI-HBB-201-2H	Reactor Core Isolation Cooling
ISI-HBB-104-1H	ISI-HBB-204-1H	Core Spray
ISI-HBB-104-2H	ISI-HBB-204-2H	Core Spray
ISI-HBB-107-1H	ISI-HBB-207-1H	High Pressure Coolant Injection
ISI-HBB-108-1H	ISI-HBB-208-1H	High Pressure Coolant Injection
ISI-HBB-108-2H	ISI-HBB-208-2H	High Pressure Coolant Injection
ISI-HBB-109-1H	ISI-HBB-209-1H	High Pressure Coolant Injection
ISI-HBB-110-1H	ISI-HBB-210-1H	Residual Heat Removal
ISI-HBB-110-2H	ISI-HBB-210-2H	Residual Heat Removal
ISI-HBB-110-3H	ISI-HBB-210-3H	Residual Heat Removal
ISI-HBB-110-4H	ISI-HBB-210-4H	Residual Heat Removal
ISI-HBB-111-1H		Residual Heat Removal
ISI-HBB-111-2H	ISI-HBB-211-2H	Residual Heat Removal
ISI-HBB-120-1H	ISI-HBB-220-1H	Residual Heat Removal
ISI-HBB-120-2H	ISI-HBB-220-2H	Residual Heat Removal
ISI-HBB-120-3H	ISI-HBB-220-3H	Residual Heat Removal

TABLE 2.4-2
SSES ISI ISOMETRIC DRAWINGS (HANGER IDENTIFICATION)
Sheet 6 of 8

UNIT 1 & Common	UNIT 2	TITLE
ISI-HBB-185-1H		Residual Heat Removal
ISI-HBB-186-1H		Residual Heat Removal
	ISI-HBD-285-1H	Residual Heat Removal
	ISI-HBD-285-2H	Residual Heat Removal
	ISI-HBD-286-1H	Residual Heat Removal
	ISI-HCC-203-1H	Fuel Pool Cooling
	ISI-HCC-203-2H	Fuel Pool Cooling
	ISI-HCC-203-3H	Fuel Pool Cooling
	ISI-HCC-203-4H	Fuel Pool Cooling
ISI-HRC-1-90H		RHR Service Water
ISI-HRC-10-3H		Emergency Service Water
ISI-HRC-101-1H	ISI-HRC-201-1H	Emergency Service Water
ISI-HRC-101-2H		Emergency Service Water
ISI-HRC-102-1H	ISI-HRC-202-1H	Emergency Service Water
ISI-HRC-102-2H		Emergency Service Water
ISI-HRC-102-3H		Emergency Service Water
ISI-HRC-103-1H	ISI-HRC-203-1H	Emergency Service Water
ISI-HRC-104-1H	ISI-HRC-204-1H	Emergency Service Water
ISI-HRC-105-1H	ISI-HRC-205-1H	Emergency Service Water
ISI-HRC-106-1H	ISI-HRC-206-1H	Emergency Service Water
ISI-HRC-107-1H	ISI-HRC-207-1H	Emergency Service Water
ISI-HRC-108-1H	ISI-HRC-208-1H	Emergency Service Water
ISI-HRC-109-1H	ISI-HRC-209-1H	Emergency Service Water
	ISI-HRC-209-2H	Emergency Service Water
ISI-HRC-11-3H		Emergency Service Water
ISI-HRC-110-1H	ISI-HRC-210-1H	Emergency Service Water

TABLE 2.4-2
SSES ISI ISOMETRIC DRAWINGS (HANGER IDENTIFICATION)
Sheet 7 of 8

UNIT 1 & Common	UNIT 2	TITLE
	ISI-HRC-210-2H	Emergency Service Water
ISI-HRC-112-1H	ISI-HRC-212-1H	RHR Service Water
ISI-HRC-112-2H	ISI-HRC-212-2H	RHR Service Water
ISI-HRC-112-3H	ISI-HRC-212-3H	RHR Service Water
ISI-HRC-112-4H	ISI-HRC-212-4H	RHR Service Water
ISI-HRC-113-1H	ISI-HRC-213-1H	RHR Service Water
ISI-HRC-113-2H	ISI-HRC-213-2H	RHR Service Water
ISI-HRC-114-1H	ISI-HRC-214-1H	RHR Service Water
ISI-HRC-114-2H	ISI-HRC-214-2H	RHR Service Water
ISI-HRC-12-2H		Emergency Service Water
ISI-HRC-13-1H		Emergency Service Water
ISI-HRC-13-2H		Emergency Service Water
ISI-HRC-14-1H		Emergency Service Water
ISI-HRC-14-2H		Emergency Service Water
ISI-HRC-16-5H		RHR Service Water
ISI-HRC-16-6H		RHR Service Water
ISI-HRC-17-1H		Emergency Service Water
ISI-HRC-3-1H		Emergency Service Water
ISI-HRC-3-2H		Emergency Service Water
ISI-HRC-3-3H		Emergency Service Water
ISI-HRC-3300-1H		Emergency Service Water
ISI-HRC-3301-1H		Emergency Service Water
ISI-HRC-3302-1H		Emergency Service Water
ISI-HRC-3303-1H		Emergency Service Water
ISI-HRC-4-1H		Emergency Service Water
ISI-HRC-5-3H		Emergency Service Water

TABLE 2.4-2
SSES ISI ISOMETRIC DRAWINGS (HANGER IDENTIFICATION)
Sheet 8 of 8

UNIT 1 & Common	UNIT 2	TITLE
ISI-HRC-7-1H		Emergency Service Water
ISI-HRC-7-2H		Emergency Service Water
ISI-HRC-9-1H		Emergency Service Water
ISI-HRC-9-2H		Emergency Service Water
ISI-HRC-9-3H		Emergency Service Water
ISI-HRC-9-4H		Emergency Service Water
ISI-HRC-9-5H		Emergency Service Water
ISI-SPDCA-102-1H	ISI-SPDCA-202-1H	Reactor Recirculation
ISI-SPDCA-102-2H	ISI-SPDCA-202-2H	Reactor Recirculation
ISI-SPDCA-103-6H	ISI-SPDCA-203-3H	Reactor Water Clean-up
ISI-SPDCA-106-1H	ISI-SPDCA-206-1H	Standby Liquid Control
ISI-SPDCA-106-2H	ISI-SPDCA-206-2H	Standby Liquid Control
ISI-SPDCA-106-3H	ISI-SPDCA-206-3H	Standby Liquid Control
ISI-SPDCA-106-4H	ISI-SPDCA-206-4H	Standby Liquid Control
	ISI-SPDCA-206-5H	Standby Liquid Control
	ISI-VBB-201-1H	High Pressure Coolant Injection
ISI-VBB-102-1H	ISI-VBB-202-1H	Control Rod Drive
ISI-VBB-102-2H	ISI-VBB-202-2H	Control Rod Drive
ISI-VNBB-21-1H	ISI-VNBB-21-3H	Main Steam
ISI-VNBB-21-2H	ISI-VNBB-21-4H	Main Steam
ISI-VRRB-31-1H	ISI-VRRB-31-3H	Reactor Recirculation
ISI-VRRB-31-2H	ISI-VRRB-31-4H	Reactor Recirculation

TABLE 2.4-3
SSES ISI COMPONENT DETAIL DRAWINGS
Sheet 1 of 1

UNIT 1 & Common	UNIT 2	TITLE
C-198607	C-205719	RPV Shell
C-198638	C-199554	Reactor Recirculation Pumps 1P-401A,B
C-205754	C-205754	RPV Stabilizer Brackets
C-205755	C-205755	RPV Skirt
C-198624	C-199558	RPV Top and Bottom Head
C-198623	C-199557	CRD Housing and Incore Penetration
C-198608	C-199556	CRD Housing and Incore Penetration Identification
C-198636	C-199555	RHR Heat Exchangers and Supports 1E-205A,B
	C-199561	RHR Heat Exchanger Supports
C-198635	C-199560	Core Spray Pumps 1P-206A,B,C,D
C-198634	C-199559	RHR Pumps 1P-202A,B,C,D
C-199587	C-199587	ISI Drawing - Examination Categories B-N-1 & B-N-2

TABLE 2.4-4
SSES SYSTEM PRESSURE TEST BOUNDARY DRAWINGS
Sheet 1 of 1

UNIT 1 & Common	UNIT 2	TITLE
SE-016-310		ESW, RHRSW Systems Loop A Flow Path Test
SE-016-311		ESW, RHRSW Systems Loop B Flow Path Test
SE-054-301-1	SE-254-301-1	ESW System Loop A Functional Test
SE-054-301-2	SE-254-301-2	ESW System Loop B Functional Test
SE-100-002	SE-200-002	Reactor Pressure Vessel Boundary Leakage Test
SE-116-301-1	SE-216-301-1	RHRSW System Loop A Functional Test
SE-116-301-2	SE-216-301-2	RHRSW System Loop B Functional Test
SE-135-301	SE-235-301	Fuel Pool Cooling and Clean-up System Open Flow Path Test
SE-145-301	SE-245-301	Feedwater System Inservice Test
SE-149-301-1	SE-249-301-1	RHR System Loop A Functional Leak Test
SE-149-301-2	SE-249-301-2	RHR System Loop B Functional Leak Test
SE-150-301	SE-250-301	RCIC System Functional Test
SE-151-301-1	SE-251-301-1	Core Spray System Loop A Functional Test
SE-151-301-2	SE-251-301-2	Core Spray System Loop B Functional Test
SE-152-301	SE-252-301	HPCI System Functional Test
SE-153-301	SE-253-301	SBLC System Functional Test
SE-155-301-1	SE-255-301-1	CRD System Inservice/Functional Test
SE-155-301-2	SE-255-301-2	CRD Scram Discharge Inservice/Functional Test
SE-183-311	SE-283-311	Main Steam System Inservice Test

TABLE 2.4-5
SSES CONTAINMENT ISI REFERENCE DRAWINGS
Sheet 1 of 4

UNIT 1 & Common	UNIT 2	TITLE
C-276 Sh. 1	C-276 Sh. 1	Liner Plate General Outline
C-276 Sh. 2	C-276 Sh. 2	Liner Plate General Outline
C-277	C-277	Liner Plate Developed Elevation
C-278	C-278	Liner Plate Drywell Anchor Bolts
C-279 Sh. 1	C-279 Sh. 1	Liner Plate Penetration Schedule
C-279 Sh. 2	C-279 Sh. 2	Liner Plate Penetration Schedule
C-279 Sh. 3	C-279 Sh. 3	Liner Plate Penetration Schedule
C-279 Sh. 4	C-279 Sh. 4	Liner Plate Penetration Schedule
C-281	C-281	Liner Plate Base Floor Plan and Details
C-282	C-282	Suppression Chamber Details
C-283	C-283	Liner Plate Suppression Chamber Details
C-284	C-284	Diaphragm Slab Anchorage Details
C-285	C-285	Liner Plate Drywell Details
C-286	C-286	Liner Plate Sections and Details
C-287	C-287	Drywell Penetrations Sections and Details
C-288	C-288	Drywell Penetration Details
C-289	C-289	Pipe Restraint Schedule and Details
C290	C290	Refueling Head & Seal Plate Details
C-291 Sh. 1	C-291 Sh. 1	Pipe Restraint Details
C-291 Sh. 2	C-291 Sh. 2	Pipe Restraint Details
C-292 Sh. 1	C-292 Sh. 1	Pipe Restraint Details
C-292 Sh. 2	C-292 Sh. 2	Pipe Restraint Details
C-293 Sh. 1	C-293 Sh. 1	Diaphragm Floor Plan & Details
C-293 Sh. 2	C-293 Sh. 2	Diaphragm Floor Plan & Details
C-294	C-294	Penetration Details
C-295	C-295	Liner Plate Sections and Details

TABLE 2.4-5
SSES CONTAINMENT ISI REFERENCE DRAWINGS
Sheet 2 of 4

UNIT 1 & Common	UNIT 2	TITLE
C-296 Sh. 1	C-296 Sh. 1	Jet Impingement Fixes
C-296 Sh. 2	C-296 Sh. 2	Jet Impingement Fixes
C-296 Sh. 3	C-296 Sh. 3	Jet Impingement Fixes
C-296 Sh. 4	C-296 Sh. 4	Jet Impingement Fixes
C-296 Sh. 5	C-296 Sh. 5	Jet Impingement Fixes
C-296 Sh. 6	C-296 Sh. 6	Jet Impingement Fixes
C-296 Sh. 7	C-296 Sh. 7	Jet Impingement Fixes
C-298	C-298	Liner Plate Leak Chase System
C-331	C-331	Primary Containment General Arrangement
C-333	C-333	Primary Containment Base Slab Sections and Details
C-334	C-334	Suppression Chamber Wall Sections and Details
C-351	C-351	Drywell Wall Sections
C-352	C-352	Drywell Wall Sections and Details
C-361	C-361	Drywell Interior Misc. Details
C-362 Sh. 1A	C-362 Sh. 1A	Drywell Interior Framing at El. 719' 1"
C-362 Sh. 1B	C-362 Sh. 1B	Drywell Interior Framing at El. 719' 1"
C-362 Sh. 1C	C-362 Sh. 1C	Drywell Interior Framing at El. 719' 1"
C-362 Sh. 1D	C-362 Sh. 1D	Drywell Interior Framing at El. 719' 1"
C-362 Sh. 1E	C-362 Sh. 1E	Drywell Interior Framing at El. 719' 1"
C-363 Sh. 1	C-363 Sh. 1	Drywell Interior Framing at El. 738' 11 ½ "
C-363 Sh. 2	C-363 Sh. 2	Drywell Interior Framing at El. 738' 11 ½ "
C-364 Sh. 1	C-364 Sh. 1	Drywell Interior Framing at El. 744' 7"
C-365 Sh. 1	C-365 Sh. 1	Drywell Interior Framing at El. 752' 2 ½ "
C-365 Sh. 2	C-365 Sh. 2	Drywell Interior Framing at El. 752' 2 ½ "
C-365 Sh. 3	C-365 Sh. 3	Drywell Interior Framing at El. 752' 2 ½ "
C-365 Sh. 4	C-365 Sh. 4	Drywell Interior Framing at El. 752' 2 ½ "

TABLE 2.4-5
SSES CONTAINMENT ISI REFERENCE DRAWINGS
Sheet 3 of 4

UNIT 1 & Common	UNIT 2	TITLE
C-366 Sh. 1	C-366 Sh. 1	Drywell Interior Sections and Detail
C-366 Sh. 2	C-366 Sh. 2	Drywell Interior Sections and Detail
C-367 Sh. 1	C-367 Sh. 1	Drywell Interior Framing El. 767'
C-368 Sh. 1	C-368 Sh. 1	Drywell Interior Pipe Restraints
C-368 Sh. 2	C-368 Sh. 2	Drywell Interior Pipe Restraints
C-369	C-369	Drywell Interior Pipe Restraints and Misc. Details
C-370	C-370	Suppression Chamber Steel Columns
C-371 Sh. 1	C-371 Sh. 1	Vent Pipe Arrangements
C-371 Sh. 2	C-371 Sh. 2	Vent Pipe Arrangements
C-372 Sh. 1	C-372 Sh. 1	Vent Pipe Details
C-372 Sh. 2	C-372 Sh. 2	Vent Pipe Details
C-372 Sh. 3	C-372 Sh. 3	Vent Pipe Details
C-372 Sh. 4	C-372 Sh. 4	Vent Pipe Details
C-373 Sh. 1	C-373 Sh. 1	Suppression Chamber Platforms
C-373 Sh. 2	C-373 Sh. 2	Suppression Chamber Platforms
C-374	C-374	Suppression Chamber Platforms
C-380	C-380	Reactor Shield Seismic Stabilizer
C-381	C-381	Reactor Shield
C-387	C-387	Surface Crack Mapping Areas
C-390	C-390	Containment Construction Details
C-391	C-391	Containment Construction Details
C-392	C-392	Reactor Cavity Seal Ring
C-1177	C-1177	Surface Crack Mapping Areas
C-1180 Sh. 1	C-1180 Sh. 1	Drywell Interior Pipe Restraints
C-1180 Sh. 2	C-1180 Sh. 2	Drywell Interior Pipe Restraints
C-1181	C-1181	Drywell Interior Pipe Restraints

TABLE 2.4-5
SSES CONTAINMENT ISI REFERENCE DRAWINGS
Sheet 4 of 4

UNIT 1 & Common	UNIT 2	TITLE
C-1182	C-1182	Drywell Interior Pipe Restraints
C-1183	C-1183	Drywell Interior Pipe Restraints
C-1186	C-1186	Jet Impingement Barriers
C-1187 Sh. 1	C-1187 Sh. 1	Jet Impingement Barriers
C-1187 Sh. 2	C-1187 Sh. 2	Jet Impingement Barriers
C-1190	C-1190	Quencher Support Base Plates
C-1192	C-1192	CRD Removal Ramp
C-1193	C-1193	Sump Cover Plate
C-1194 Sh. 1	C-1194 Sh. 1	Drywell Platforms
C-1194 Sh. 1	C-1194 Sh. 1	Drywell Platforms
C-1194 Sh. 3	C-1194 Sh. 3	Drywell Platforms

TABLE 2.4-6
SSES CONTAINMENT ISI DRAWINGS
Sheet 1 of 3

UNIT 1 & Common	UNIT 2	TITLE
CISI-001A	CISI-001A	Primary Containment Exterior Elevation
CISI-001B	CISI-001B	Primary Containment Exterior Elevation
CISI-002A	CISI-002A	Drywell Head and Flange (Exterior and Interior)
CISI-002B	CISI-002B	Drywell Head and Flange (Exterior and Interior)
CISI-003A	CISI-003A	Personnel Airlock (Exterior and Interior)
CISI-003B	CISI-003B	Personnel Airlock (Exterior and Interior)
CISI-003C	CISI-003C	Personnel Airlock (Exterior and Interior)
CISI-003D	CISI-003D	Personnel Airlock (Exterior and Interior)
CISI-003E	CISI-003E	Personnel Airlock (Exterior and Interior)
CISI-003F	CISI-003F	Personnel Airlock (Exterior and Interior)
CISI-003G	CISI-003G	Personnel Airlock (Exterior and Interior)
CISI-003H	CISI-003H	Personnel Airlock (Exterior and Interior)
CISI-003I	CISI-003I	Personnel Airlock (Exterior and Interior)
CISI-003J	CISI-003J	Personnel Airlock (Exterior and Interior)
CISI-003K	CISI-003K	Personnel Airlock (Exterior and Interior)
CISI-003L	CISI-003L	Personnel Airlock (Exterior and Interior)
CISI-004A	CISI-004A	Equipment Hatch (Exterior and Interior)
CISI-004B	CISI-004B	Equipment Hatch (Exterior and Interior)
CISI-005	CISI-005	Containment Penetration - Type I
CISI-006	CISI-006	Containment Penetration - Type II
CISI-007	CISI-007	Containment Penetration - Type III, IV, V, and XXII
CISI-008	CISI-008	Containment Penetration - Type VI (Electrical)
CISI-009	CISI-009	Containment Penetration - Type VII, and VIII
CISI-010	CISI-010	Containment Penetration - Type IX (Electrical)
CISI-011	CISI-011	Containment Penetration - Type X
CISI-012	CISI-012	Containment Penetration - Type XXI

TABLE 2.4-6
SSES CONTAINMENT ISI DRAWINGS
Sheet 2 of 3

UNIT 1 & Common	UNIT 2	TITLE
CISI-013	CISI-013	Containment Penetration - XXIII (Mech. And Elect.)
CISI-014	CISI-014	Containment Penetration - Type XXIV (Electrical)
CISI-015	CISI-015	Containment Penetration - Type XXV
CISI-016	CISI-016	Containment Penetration - Type XXVI
CISI-017A	CISI-017A	Electrical Penetration (Canister Type)
CISI-017B	CISI-017B	Electrical Penetration (Canister Type)
CISI-018	CISI-018	Electrical Penetration (Modular Type)
CISI-019	CISI-019	Liner Plate
CISI-020	CISI-020	Drywell Floor / Diaphragm Slab
CISI-021A	CISI-021A	Suppression Chamber Downcomers
CISI-021B	CISI-021B	Suppression Chamber Downcomers
CISI-022	CISI-022	Not Used
CISI-023	CISI-023	Not Used
CISI-024	CISI-024	Not Used
CISI-025	CISI-025	Not Used
CISI-026	CISI-026	Not Used
CISI-027	CISI-027	Not Used
CISI-028	CISI-028	Not Used
CISI-029	CISI-029	Not Used

TABLE 2.4-6
SSES CONTAINMENT ISI DRAWINGS
Sheet 3 of 3

Drywell Exterior (IWE and IWL) - SSES Units 1 and 2					
Elevation	**0° - 90°**	**90° - 180°**	**180° - 270°**	**270° - 360°**	**Other**
704' - 719'	CISI-030	CISI-031	CISI-032	CISI-033	
719' - 749'	CISI-034	CISI-035	CISI-036	CISI-037	
749' - 779'	CISI-038	CISI-039	CISI-040	CISI-041	
779' - 791'	CISI-042	CISI-043	CISI-044	CISI-045	
791' - 794'	CISI-046	CISI-047	CISI-048	CISI-049	

Drywell Interior (IWE Only) - SSES Units 1 and 2					
Elevation	**0° - 90°**	**90° - 180°**	**180° - 270°**	**270° - 360°**	**Other**
704' - 719'	CISI-050	CISI-051	CISI-052	CISI-053	
719' - 738'	CISI-054	CISI-055	CISI-056	CISI-057	
738' - 752'	CISI-058	CISI-059	CISI-060	CISI-061	
752' - 767'	CISI-062	CISI-063	CISI-064	CISI-065	
767' - 779'	CISI-066	CISI-067	CISI-068	CISI-069	
779' - 791'	CISI-070	CISI-071	CISI-072	CISI-073	
791' - 794'	CISI-074	CISI-075	CISI-076	CISI-077	

Drywell Floor/Diaphragm Slab (IWE Only) - SSES Units 1 and 2					
Elevation	**0° - 90°**	**90° - 180°**	**180° - 270°**	**270° - 360°**	**Other**
704' Upper Surface	CISI-078	CISI-079	CISI-080	CISI-081	CISI-082 Under Vessel

Note: Drawings CISI-083 through CISI-087 were deleted.

Suppression Chamber Exterior (IWE and IWL) - SSES Units 1 and 2					
Elevation	**0° - 90°**	**90° - 180°**	**180° - 270°**	**270° - 360°**	**Other**
645' - 670'	CISI-088	CISI-089	CISI-090	CISI-091	
670' - 683'	CISI-092	CISI-093	CISI-094	CISI-095	
683' - 704'	CISI-096	CISI-097	CISI-098	CISI-099	

Suppression Chamber Interior (IWE Only) - SSES Units 1 and 2					
Elevation	**0° - 90°**	**90° - 180°**	**180° - 270°**	**270° - 360°**	**Other**
648' Floor	CISI-100	CISI-101	CISI-102	CISI-103	
648' - 672'	CISI-104	CISI-105	CISI-106	CISI-107	
672' - 683'	CISI-108	CISI-109	CISI-110	CISI-111	
683' - 700'	CISI-112	CISI-113	CISI-114	CISI-115	

2.5 Technical Approach and Positions

When the requirements of ASME Section XI are not easily interpreted, SSES has reviewed general licensing/regulatory requirements and industry practice to determine a practical method of implementing the Code requirements. The technical approach and position documents contained in this section have been provided to clarify SSES's implementation of ASME Section XI requirements. An index which summarizes each technical approach/position is included in Table 2.5-1.

TABLE 2.5-1
TECHNICAL APPROACH AND POSITIONS INDEX/SUMMARIES

Position Number	Revision Date	Status[1]	(Program) Description
3TA-01	0 7/18/03	Active	(SPT) System Leakage Testing of Non-Isolable Buried Components.
3TA-02	0 7/18/03	Active	(SPT) Valve Seats as Pressurization Boundaries.
3TA-03	0 7/18/03	Active	(SPT) Use of RG 1.147, Revision 13 for System Pressure Testing Code Cases Affecting Hold Times.
3TA-04	0 7/18/03	Active	(ISI) Examination Requirements for Step Bolting (Multi-Diameter Bolting) in a Pressure Retaining Application.
3TA-05	0 7/18/03	Active	(CISI) Accessibility for Containment Examinations
3TA-06	0 7/18/03	Active	(CISI) BWR Vent System, Accessible Surface Areas

Note 1: Technical Approach and Position Status Options: Active - Current ISI Program Technical Approach is being utilized at SSES; Deleted - Technical Approach is no longer being utilized at SSES.

TECHNICAL APPROACH AND POSITION NUMBER: 3TA-01

COMPONENT IDENTIFICATION

Code Class:	3
Reference:	IWA-5244(b)(2)
Examination Category:	N/A
Item Number:	N/A
Description:	System Leakage Testing of Non-Isolable Buried Components.
Component Number:	Non-Isolable Buried Pressure Retaining Components

CODE REQUIREMENT

IWA-5244(b)(2) requires non-isolable buried components be tested to confirm that flow during operation is not impaired.

POSITION

Article IWA-5000 provides no guidance in setting acceptance criteria for what can be considered "adequate flow." In lieu of any formal guidance provided by the Code, SSES has established the following acceptance criteria:

- For opened ended lines on systems that require Inservice Testing (IST) of pumps, adherence to IST acceptance criteria is considered as reasonable proof of adequate flow through the lines.

This acceptance criteria will be utilized as proof of adequate flow in order to meet the requirements of IWA-5244(b)(2).

TECHNICAL APPROACH AND POSITION NUMBER: 3TA-02

COMPONENT IDENTIFICATION

Code Class:	1, 2, and 3
Reference:	IWA-5221
	IWA-5222
Examination Category:	B-P, C-H, and D-B
Item Number:	B15.10, B15.50, B15.60, B15.70, C7.10, D2.10
Description:	Valve Seats as Pressurization Boundaries
Component Number:	All Pressure Testing Boundary Valves

CODE REQUIREMENT

IWA-5221 requires the pressurization boundary for system leakage testing extend to those pressure retaining components under operating pressures during normal system service.

System leakage testing is performed in lieu of hydrostatic pressure testing (Paragraph IWA-5222) at or near the end of each inspection interval in accordance Code Case N-498-4 for Class 1, 2, and 3 systems. Code Case N-498-4 require the pressurization boundary extend to all Class 1 components during the system leakage test, and extend to all Class 2 and 3 components included in those portions of systems required to operate or support the system safety function up to and including the first normally closed valve.

POSITION

SSES's position is that the pressurization boundary extends up to the valve seat of the valve utilized for isolation. For example, in order to pressure test the Class 1 components, the valve that provides the Class break would be utilized as the isolation point. In this case the true pressurization boundary, and Class break, is actually at the valve seat.

Any requirement to test beyond the valve seat is dependent only on whether or not the piping on the other side of the valve seat is ISI Class 1, 2, or 3.

The extension of the pressurization boundary during an operational test would require an abnormal valve line-up. Extending the boundary for a hydrostatic test would require the over pressurization of low pressure piping at systems that have a high/low pressure interface (such as RHR and Core Spray).

In order to simplify examination of classed components, SSES will perform a VT-2 visual examination of the entire boundary valve body and bonnet (during pressurization up to the valve seat).

TECHNICAL APPROACH AND POSITION NUMBER: 3TA-03

COMPONENT IDENTIFICATION

Code Class:	1, 2, and 3
Reference:	IWA-2441, IWA-5000, IWB-5000, IWC-5000, IWD-5000
Examination Category:	N/A
Item Number:	N/A
Description:	Use of RG 1.147, Revision 13 for System Pressure Testing Code Cases Affecting Hold Times
Components Number:	All Class 1, 2, and 3 Pressure Retaining Components

CODE REQUIREMENT

IWA-2441(f) states that the use of any Code Case and revisions to previously approved Code Cases are subject to acceptance by the regulatory and enforcement authorities having jurisdiction at the plant site.

Per 10CFR50.55a, Footnote 6, ASME Code Cases that have been determined suitable for use by the Commission staff are listed in NRC Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability – ASME Section XI Division 1".

POSITION

At the time the initial Third Interval ISI Program was prepared for SSES, Draft Regulatory Guide DG-1091 (Proposed Revision 13 to RG 1.147) was issued. For several of the approved Code Cases applicable to the System Pressure Testing Program, detailed conditions were included regarding the Hold Time requirements. These specific requirements were incorporated into the draft Third Interval ISI Program Plan prior to submittal.

In June 2003, the final RG 1.147, Revision 13 was published which took into consideration public comments and final issue resolutions pertaining to the Draft RG. In this version of the Guide, the detailed pressure testing Hold Time conditions were replaced with a more generic statement for several of the Code Cases. This more generic condition reads:

> *Prior to conducting the VT-2 examination, the provisions of IWA-5213, "Test Condition Holding Times," 1989 Edition, are to be followed.*

The code of record for the SSES Third Interval ISI Program is the 1998 Edition with the 2000 Addenda. In the 1989 Edition, the Hold Time requirements of IWA-5213 are based on the test type as described in IWA-5211. These test types have been significantly modified in the 98/00A, and thus there is no direct correlation to define the specific hold time under the RG condition as written. To clarify the implementation of this condition under the SSES system pressure testing program, the following cross-reference table will be utilized.

TECHNICAL APPROACH AND POSITION NUMBER: 3TA-03

POSITION (Continued)

1989 Test Type	98/00A Test Type	Hold Time
Leakage (Class 1 Test)	Leakage (all Classes)*	No Hold Time
Functional	Leakage*	10 Minutes
Inservice	Leakage*	No Hold Time provided system has operated for 4 Hours
Hydrostatic	Hydrostatic	4 Hour Insulated, 10 Minute Noninsulated
Pneumatic	Pneumatic	10 Minutes

* In order to implement the 1989 Hold Times under the 98/00A, the type of Leakage Test will need to be defined and mapped back to the old 1989 Test Descriptions.

The above table will be utilized when a Code Case is implemented with the generic condition from Regulatory Guide 1.147 as quoted above.

(Note that the System Leakage Test identified in the 98/00A should not be directly correlated back to the System Leakage Test in the 1989. This would inappropriately result in the No Hold Time criteria being applied to all pressure tests.)

Utilizing these Hold Times for Code Case application that parallel the old Functional and Inservice Tests of the 1989 Edition will result in similar Hold Times to those which will be implemented for the normal Code required periodic pressure tests. This is the result of a limitation on the use of the 1998 Edition through the 2000 Addenda of ASME Section XI stated in 10CFR50.55a(b)(2)(xx). The limitation is specifically quoted in Section 1.7 of this Program Plan and requires similar 10 minute and 4 hour system run times as stated in the table above.

TECHNICAL APPROACH AND POSITION NUMBER: 3TA-04

COMPONENT IDENTIFICATION

Code Class:	1
Reference:	Table IWB-2500-1
Examination Category:	B-G-1
Item Number:	B6.150, B6.180, B6.210
Description:	Examination Requirements for Step Bolting (Multi-Diameter Bolting) in a Pressure Retaining Application
Components Number:	Class 1 Pressure Retaining Bolting Components

CODE REQUIREMENT

Table IWB-2500-1, Examination Category B-G-1, requires a volumetric examination for pressure retaining bolting greater than 2 in. (> 2") in diameter.

Table IWB-2500-1, Examination Category B-G-2, requires a VT-1, visual examination for pressure retaining bolting 2 in. and less (≤ 2") in diameter.

POSITION

To compensate for damage to bolting holes that occurred when removing bolting from Main Steam Isolation Valves (MSIV's), the damaged holes in the valve body were enlarged and rethreaded to accept larger diameter bolts. Corresponding sized holes were not made in the valve cover. To allow closure of the valve cover, provide for proper anchorage of the bolt, and maintain the ability for a pressure-retaining boundary, dual diameter bolting was manufactured. The larger diameter portion of the bolting (greater than 2 inches) is threaded into the valve bodies and acts as an anchor point. The smaller diameter portion of the bolting (2 inches or less) goes through the valve cover, has the tensioning nut placed on it, and acts as part of the pressure retaining boundary. Since the bolting has a dual diameter, its inspection requirements are covered by two different ASME Section XI Examination Categories. For bolting (> 2"), Code Category B-G-1 requires a volumetric examination of the bolt. For bolting (≤ 2"), Code Category B-G-2 requires a VT-1, visual examination of the bolt. It is expected that the smaller (2 inches or less) side of the bolt would fail first under either the degradation (wastage) or cracking type mechanisms that potentially could be present.

SSES's position is that the ASME Section XI examination requirements for step bolting (multi-diameter bolting) should be inspected based on its largest, limiting size. Therefore, according to ASME Section XI, these components require a volumetric examination for pressure retaining bolting greater than 2 in. (> 2") in diameter.

TECHNICAL APPROACH AND POSITION NUMBER: 3TA-05

COMPONENT IDENTIFICATION

Code Class:	MC
Reference:	Table IWE-2500-1
Examination Category:	E-A
Item Number:	E1.11, E1.12, and E1.20
Description:	Accessibility for Containment Examinations
Components Number:	Various

CODE REQUIREMENT

Table IWE-2500-1, Examination Category E-A, Note 1, requires examination of all accessible interior and exterior surfaces of Class MC components, parts, appurtenances, and metallic shell and penetration liners of Class CC components.

Interpretation XI-1-98-71 was published in Volume 46 of the Section XI Interpretations. This interpretation confirmed that it was the intent of Table IWE-2500-1, Category E-A, Accessible Surface Areas, that surface areas could be considered inaccessible if visual access by line of sight with adequate lighting from permanent vantage points is obstructed by permanent plant structures, equipment, or components, provided these surface areas do not require examination in accordance with the inspection plan for IWE-1240 (i.e.: Surface Areas Requiring Augmented Examination).

This interpretation was incorporated into the 2000 Addenda of the 1998 Edition of sub-paragraphs IWE-1231(b), IWE-1232(c), IWE-2310(a), and IWE-2330(b) under Code Action BC-99-489 and provides the needed clarification to define accessible surface areas.

It should be noted that this definition of accessible surfaces cannot be applied to containment surface areas subject to augmented examination in accordance with IWE-1240 and examined to the requirements of Table IWE-2500-1, Examination Category E-C.

POSITION

SSES's position on accessibility for containment examinations is that surface areas are considered inaccessible if visual access by line of sight with adequate lighting from permanent vantage points is obstructed by permanent plant structures, equipment, or components, provided these surface areas do not require augmented examination.

TECHNICAL APPROACH AND POSITION NUMBER: 3TA-06

COMPONENT IDENTIFICATION

Code Class:	MC
Reference:	Table IWE-2500-1
Examination Category:	E-A
Item Number:	E1.20
Description:	BWR Vent System, Accessible Surface Areas
Components Number:	Various

CODE REQUIREMENT

Table IWE-2500-1, Examination Category E-A, Item E1.20, as it applies to the BWR Vent System accessible surfaces (i.e., drywell to wetwell vacuum breakers and downcomers).

The BWR Vent System includes the downcomers (both the dry and submerged portions) as well as the drywell to wetwell vacuum breakers. This is clarified by Table IWE-2500-1, Examination Category E-A, Note 2 which specifically includes flow channeling devices within containment vessels.

The BWR Vent System surfaces requiring examination to the requirements of Item E1.20 include all accessible interior and exterior surface areas. Refer to Technical Approach and Position Number 3TA-05 for the definition of accessible surfaces. This position has been incorporated into the 2000 Addenda of the 1998 Edition within sub-paragraphs IWE-1231(b), IWE-1232(c), IWE-2310(a), and IWE-2330(b) under Code Action BC-99-489.

It should be noted that this definition of accessible surfaces cannot be applied to containment surface areas subject to augmented examination in accordance with IWE-1240 and examined to the requirements of Table IWE-2500-1, Examination Category E-C.

POSITION

SSES's position on what surfaces should be examined in the CISI Program, considering the downcomers are underwater, is that the scope of examination includes all accessible interior and exterior surface areas.

3.0 COMPONENT ISI PLAN

The SSES Component ISI Plan includes ASME Section XI nonexempt pressure retaining welds, piping structural elements, pressure retaining bolting, attachment welds, pump casings, and valve bodies of ISI Class 1, 2, and 3 components that meet the criteria of Subarticle IWA-1300. These components are identified on the ISIM Drawings listed in Section 2.3, Table 2.3-1. This Component ISI Plan also includes component augmented inservice inspection examinations specified by documents other than ASME Section XI as referenced in Section 2.2 of this document.

3.1 SSES Nonexempt ISI Class Components

The SSES ISI Class 1 components subject to examination are those which are not exempted under the criteria of Subarticle IWB-1220 in the 1989 Edition, No Addenda of ASME Section XI (see Section 3.1.2 below). The SSES ISI Class 2 and 3 components identified in ISIM Drawings are those not exempted under the criteria of Subarticles IWC-1220 and Subarticle IWD-1220 in the 1998 Edition through the 2000 Addenda of ASME Section XI. A summary of SSES Units 1, 2, and Common ASME Section XI nonexempt components is included in Section 7.0.

3.1.1 Identification of ISI Class 1, 2, and 3 Nonexempt Components

ISI Class 1, 2, and 3 components are identified on the ISI Isometric (Weld Identification) and ISI Component Drawings listed in Section 2.4, Tables 2.4-1 and 2.4-3. Welded attachments are also identified by controlled SSES support drawings.

3.1.2

10CFR50.55a(b)(2)(xi) specifies that the 1989 Edition, No Addenda of ASME Section XI, Subarticle IWB-1220 shall be used in lieu of the 1998 Edition, 2000 Addenda of ASME Section XI, Subarticle IWB-1220.

IWB-1220, Components Exempt from Examination (1989 Edition, No Addenda) - The following components (or parts of components) are exempted from the volumetric and surface examination requirements of IWB-2500 per the Code paragraph referenced:

(a) Components that are connected to the Reactor Coolant System and part of the reactor coolant pressure boundary, and that are of such a size and shape so that upon postulated rupture the resulting flow of coolant from the Reactor Coolant System, under normal plant operating conditions, is within the capacity of makeup systems which are operable from on-site emergency power;

ISI Class 1 Piping Size Exemption for Water and Steam - PPL has

determined through the criteria of Subarticle IWB-1220(a) that Class 1 components which are (1) 1.41" ID and smaller for liquid filled components or (2) 2.82" ID and smaller for steam filled components are exempt from the volumetric and surface examinations. The ISI Class 1 piping size exemption for water and steam is referenced in Section 3.3 of this document.

(b)(1) piping of Nominal Pipe Size (NPS) 1 and smaller;

(b)(2) components and their connections in piping of NPS 1 and smaller;

(c) reactor vessel head connections and associated piping, NPS 2 and smaller, made inaccessible by control rod drive penetrations.

3.2 Risk-Informed Examination Requirements

Piping structural elements that fall under RISI Category R-A are risk ranked as High (1, 2, and 3), Medium (4 and 5), and Low (6 and 7). Per the EPRI Topical Report TR-112657, Rev. B-A and Code Case N-578-1, piping structural elements ranked as High or Medium Risk are subject to examination while piping structural elements ranked as Low Risk are not subject to examinations (except for pressure testing). Thin wall welds that were excluded from volumetric examination under ASME Section XI rules per Table IWC-2500-1 are included in the element scope that is potentially subject to RISI examination at SSES.

Piping structural elements may be excluded from examination (other than pressure testing) under the RISI Program if the only degradation mechanism present for a given location is inspected for under certain other SSES programs such as the Flow Accelerated Corrosion (FAC) or IGSCC Programs. These piping structural elements will remain part of the FAC or IGSCC Programs which already perform "for cause" inspections to detect these degradation mechanisms. Piping structural elements susceptible to FAC or IGSCC along with another degradation mechanism (e.g., thermal fatigue) are retained as part of the RISI scope and are included in the element selection for the purpose of performing exams to detect the additional degradation mechanism.

The RISI Program element examinations are performed in accordance with Relief Request 3RR-10.

3.3 ISI Class 1 Piping Size Exemption for Water and Steam

The basis for determining the size of ISI Class 1 water and steam lines exempted for the surface and volumetric examination requirements of ASME Section XI Article IWB-1200 are provided in Calculation No. EC-PIPE-0011.

In determining the size of the liquid and steam lines excluded from surface and volumetric examination, liquid lines were defined as those which penetrate the RPV below the normal water level and steam lines as those which penetrate the RPV above the normal water level.

The ISI Class 1 size exemption for water and steam at SSES (refer to IWB-1220) consists of the following system(s):

System	Pump Flow Rate	Maximum Fluid Temp.	Emergency Power
RCIC - (Reactor Core Isolation Cooling). FSAR, Subsection 5.4.6.2.2.2	600 GPM	140° F	Yes, On-site
CRD - (CRD Cooling Water Flow). FSAR, Subsection 4.6.1.1.2.4.1(3)	37 GPM	140° F	Yes, On-site

4.0 SUPPORT ISI PLAN

The SSES Support Program includes the supports (excluding snubbers) of ASME Section XI nonexempt ISI Class 1, 2, and 3 components as described in Section 3.0.

4.1 SSES Nonexempt ISI Class Supports

The SSES ISI Class 1, 2, and 3 nonexempt supports are those which do not meet the criteria of Subarticle IWF-1230. A summary of SSES Units 1, 2, and Common ASME Section XI nonexempt supports is included in Section 7.0.

4.1.1 Identification of ISI Class 1, 2, and 3 Nonexempt Supports

ISI Class 1, 2, and 3 supports are identified on the ISI Isometric (Hanger Identification) and ISI Component Drawings listed in Section 2.4, Tables 2.4-2 and 2.4-3. Supports are also identified by controlled SSES support drawings.

4.2 Snubber Examination and Testing Requirements

4.2.1 ASME Section XI Paragraphs IWF-5200(a) & (b) and IWF-5300(a) & (b) require VT-3 Visual Examinations and Inservice Tests (functional tests) of snubbers to be performed in accordance with the Operation and Maintenance of Nuclear Power Plants (OM), Standard ASME/ANSI OM, Part 4. Relief Request 3RR-03, which requests relief from the visual examination and functional testing requirements of IWF-5200(a) and IWF-5300(a), IWF-5200(b) and IWF-5300(b), and IWF-5200(c) and IWF-5300(c), was submitted to the NRC. The purpose of this relief was to justify replacing the examination frequency required under OMa-1988 Addenda to ASME/ANSI OM-1987, Part 4 with the requirements of SSES TRM snubber program, Section 3.7.8. SSES procedure NEPM-QA-0595 controls the visual examination and functional testing program for safety related and non-safety related snubbers.

4.2.2 ASME Section XI Paragraphs IWF-5200(c) and IWF-5300(c) require integral and nonintegral attachments for snubbers to be examined in accordance with ASME Section XI Subsection IWF. This results in a visual examination of the snubber attachment hardware including lugs, bolting, pins, and clamps.

The ASME Section XI ISI Program uses Subsection IWF to define the inspection requirements for all ISI Class 1, 2, and 3 supports, regardless of type. The ISI Program does not maintain the ISI Class snubbers in the support populations subject to inspection per Subsection IWF. Per Relief Request 3RR-03, the examination of snubber integral and nonintegral

attachments, including lugs, bolting, pins, and clamps will be performed in accordance with the TRM snubber program.

It should be noted that snubber welded attachments will be performed in accordance with the ASME Section XI Subsections IWB, IWC, and IWD welded attachment examination requirements.

5.0 SYSTEM PRESSURE TESTING ISI PLAN

The SSES System Pressure Testing (SPT) Program includes all pressure retaining ASME Section XI, ISI Class 1, 2, and 3 components, with the exception of those specifically exempted by Paragraphs IWC-5222(b) and IWD-5240(b). All RISI piping structural elements, regardless of risk classification, remain subject to pressure testing as part of the current ASME Section XI program.

The SPT Program performs system pressure tests and visual inspections on the ISI Class 1, 2, and 3 pressure retaining components to verify system and component structural integrity. This program conducts both Periodic and Interval (10-year frequency) pressure tests as defined in ASME Section XI Inspection Program B. Procedure NDAP-QA-0480, "ASME Section XI System and Component Pressure Testing," implements the ASME Section XI System Pressure Testing ISI Plan.

5.1 SSES Nonexempt ISI Classed Systems

All Class 1 pressure retaining components, typically defined as the reactor coolant pressure boundary, are required to be tested. Those portions of Class 2 and 3 systems that are required to be tested include the pressure retaining boundaries of components required to operate or support the system safety functions. Class 2 and 3 open ended discharge piping and components are excluded from the examination requirements per IWC-5222(b) and IWD-5240(b).

5.1.1 Identification of Class 1, 2, and 3 Components

All components subject to ASME Section XI System Pressure Testing are shown on the ISIM Drawings listed in Section 2.3, Table 2.3-1

5.1.2 Identification of System Pressure Tests

The System Pressure Test Boundary Drawings used to define which systems, or portions of systems, fall under a specific test are listed in Section 2.4, Table 2.4-4.

5.2 Risk-Informed Examinations of Socket Welds

Socket welds selected for examination under the RISI Program are to be inspected with a VT-2 exam each refueling outage per ASME Code Case N-578-1 (see footnote 12 in Table 1 of the Code Case). To facilitate this, socket welds selected for inspection under the RISI Program shall be pressurized each refueling outage.

6.0 CONTAINMENT ISI PLAN

The SSES Containment ISI Plan includes ASME Section XI ISI Class MC pressure retaining components and their integral attachments, and Class CC components that meet the criteria of Subarticle IWA-1300. These components are identified on the ISIM Drawings listed in Section 2.3, Table 2.3-1. This Containment ISI Plan also includes information related to augmented examination areas, component accessibility, and, examination review. The CISI Program component examinations are performed in accordance with Relief Request 3RR-10.

6.1 SSES Nonexempt ISI Components

The SSES ISI Class MC and CC components identified in ISIM Drawings are those not exempted under the criteria of Subarticles IWE-1220 and Subarticle IWL-1220 in the 1998 Edition through the 2000 Addenda of ASME Section XI. A summary of SSES Units 1, 2, and Common ASME Section XI nonexempt components is included in Section 7.0.

The process for scoping SSES components for inclusion in the CISI Plan is included in the containment sections of the ISI Classification Basis Document. These sections include a listing and detailed basis for inclusion of each component.

Components that are classified as Class MC and CC must meet the requirements of ASME Section XI in accordance with 10CFR50.55a(g)(4).

6.1.1 Identification of ISI Class MC and CC Nonexempt Components

ISI Class MC and CC components are identified on the Containment ISI reference drawings and the Containment ISI drawings listed in Section 2.4, Tables 2.4-5 and 2.4-6.

6.1.2 Identification of ISI Class MC and CC Exempt Components

The process for exempting SSES components from the CISI Plan per IWE-1220 and IWL-1220 is included in the containment sections of the ISI Classification Basis Document. These sections include a listing and basis for exempting applicable components.

6.2 Augmented Examination Areas

Metal containment components potentially subject to augmented examination per IWE-1240 have been evaluated in the containment sections of the ISI Classification Basis Document. These sections define the areas that are subjected to augmented examination.

Similarly, concrete surfaces may be subject to Detailed Visual examination in accordance with IWL-2310, if declared to be 'Suspect Areas' by the examiner or the Responsible Engineer.

6.3 Component Accessibility

Class MC pressure retaining components subject to examination will remain accessible for visual examination per the requirements of ASME Section XI, Subarticle IWE-1220.

The accessibility for containment examinations is documented in technical approach and position 3TA-05.

6.4 Responsible Individual and Engineer

ASME Section XI Subsection IWE requires the review of examination results by the Responsible Individual. The Responsible Individual will meet the requirements of ASME Section XI, Subarticle IWE-2320.

ASME Section XI Subsection IWL requires the review of examination results by the Responsible Engineer. The Responsible Engineer will meet the requirements of ASME Section XI, Subarticle IWL-2320.

This is the only section in the ISI Program Plan that has information related to the responsible individual and engineer. In addition to an NDE Level III examination review per the requirements of ASME Section XI, the examination review by the responsible individual and engineer exceed the normal piping and component approval requirements.

7.0 INSERVICE INSPECTION SUMMARY TABLES

The following Tables 7.0-1 and 7.0-2 provide a summary of the ASME Section XI component, support, system pressure testing, and augmented examinations and tests for the Third Interval at SSES Units 1, 2, and Common.

The format of the Inservice Inspection Summary Tables is as depicted below and provides the following information:

Examination Category (with Category Description)	Item Number (or Augmented Number or Risk Category Number)	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Examination Category and Examination Category Description:

Provides the examination category and description as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, IWE-2500-1, IWF-2500-1, and IWL-2500-1. Only those examination categories applicable to SSES are identified.

Examination Category "N/A" is used to identify Augmented ISI examinations and other SSES commitments.

Examination Category "R-A" from Code Case N-578-1 is used in lieu of ASME Section XI Examination Categories B-F, B-J, C-F-1, and C-F-2 to identify Class 1 and 2 piping structural elements for the RISI Program.

(2) Item Number (or Augmented Number or Risk Category Number):

Provides the item number as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, IWE-2500-1, IWF-2500-1, and IWL-2500-1. Only those item numbers applicable to SSES are identified.

Specific abbreviations such as AUG1, AUG2, AUG8, and AUG9 have been developed to identify Augmented ISI examinations and other SSES commitments.

For piping structural elements under the RISI Program, the Risk Category Number (e.g., 1-5) is used in place of the Item Number.

(3) Description:

Provides the description as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, IWE-2500-1, IWF-2500-1, and IWL-2500-1.

For Augmented inspection commitments, a description of the Augmented requirement is provided.

For Risk-Informed piping examinations, a statement of the Risk Category is provided.

(4) Exam Requirements:

Provides the examination method(s) required by ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, IWE-2500-1, IWF-2500-1, and IWL-2500-1.

Provides the examination requirements for augmented components from SSES commitments or relief requests.

Provides the examination requirements for piping structural elements under the RISI Program are in accordance with the EPRI Topical Report TR-112657, Rev. B-A and Code Case N-578-1.

(5) Total Number Of Components by System

Provides the system designator (abbreviations). See Section 2.3, Table 2.3-1 for a list of these systems.

This column also provides the number of components within a particular system for that Item Number, Augmented Number, or Risk Category Number.

Note that the total number of components by system are subject to change after completion of the rebaseline project and/or after plant modifications.

(6) Relief Request/TAP Number

Provides a listing of Relief Request/Technical Approach & Position (TAP) numbers applicable to specific components, the ASME Section XI Item Number, Augmented Number, or Risk Category Number. Relief requests that generically apply to all components, or an entire class are not listed. If a Relief Request/ TAP number is identified, see the corresponding relief request in Section 8.0 or the technical approach and position in Section 2.5.

(7) Notes

Provides a listing of program notes applicable to the ASME Section XI Item Number, Augmented Number, or Risk Category Number. If a program note number is identified, see the corresponding program note at the end of the Table 7.0-2.

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-A Pressure Retaining Welds in Reactor Vessel	B1.11	Circumferential Shell Welds	Volumetric	RPV-E: 10	3RR-05	
	B1.12	Longitudinal Shell Welds	Volumetric	RPV-E: 13	3RR-05	
	B1.21	Circumferential Head Welds	Volumetric	RPV-E: 4		
	B1.22	Meridional Head Welds	Volumetric	RPV-E: 14		
	B1.30	Shell-to-Flange Weld	Volumetric	RPV-E: 6		
	B1.40	Head-to-Flange Weld	Volumetric & Surface	RPV-E: 3		
B-D Full Penetration Welds of Nozzles in Vessels	B3.90	Nozzle-to-Vessel Welds (Reactor Vessel)	Volumetric	RPV-E: 30		
	B3.100	Nozzle Inside Radius Section (Reactor Vessel)	Volumetric	RPV-E: 30		

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-G-1 Pressure Retaining Bolting, Greater Than 2 in. In Diameter	B6.10	Closure Head Nuts (Reactor Vessel)	Visual, VT-1	RPV-E: 76		
	B6.20	Closure Studs, in place (Reactor Vessel)	Volumetric	RPV-E: 76		
	B6.30	Closure Studs, when removed (Reactor Vessel)	Volumetric & Surface	RPV-E: 76		
	B6.40	Threads in Flange (Reactor Vessel)	Volumetric	RPV-E: 76		
	B6.50	Closure Washers, Bushings (Reactor Vessel)	Visual, VT-1	RPV-E: 76		
	B6.180	Bolts and Studs (Pumps)	Volumetric	RR: 32		
	B6.190	Flange Surface, when connection disassembled (Pumps)	Visual, VT-1	RR: 32		
	B6.200	Nuts, Bushings, and Washers (Pumps)	Visual, VT-1	RR: 32		
	B6.210	Bolts and Studs (Valves)	Volumetric	MS: 1	3TA-04	
B-G-2 Pressure Retaining Bolting, 2 in. and Less In Diameter	B7.10	Bolts, Studs, and Nuts (Reactor Vessel)	Visual, VT-1	RPV-E: 3		
	B7.50	Bolts, Studs, and Nuts (Piping)	Visual, VT-1	MS: 16 RHR: 2 RR: 4 RWCU: 2		
	B7.70	Bolts, Studs, and Nuts (Valves)	Visual, VT-1	CS: 2 FW: 4 MS: 24 RHR: 2 RR: 4		
	B7.80	Bolts, Studs, & Nuts in CRD Housing	Visual, VT-1	RPV-E: 185		10

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-K Welded Attachments for Vessels, Piping, Pumps, and Valves	B10.10	Welded Attachments to Pressure Vessels	Surface	RPV-E: 9		11
	B10.20	Welded Attachments to Piping	Surface	MS: 36 RHR: 5 RR: 48		
	B10.30	Welded Attachments to Pumps	Surface	RR: 8		
B-L-2 Pump Casings	B12.20	Pump Casings	Visual, VT-3	RR: 2		
B-M-2 Valve Bodies	B12.50	Valve Bodies (NPS 4 or Larger)	Visual, VT-3	CS: 6 FW: 7 HPCI: 2 MS: 24 RHR: 12 RR: 4 RWCU: 3		

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-N-1 Interior of Reactor Vessel	B13.10	Vessel Interior	Visual, VT-3	RPV-I: 12		
B-N-2 Welded Core Support Structures and Interior Attachments to Reactor Vessels	B13.20	Interior Attachments Within Beltline Region	Visual, VT-1	RPV-I: 23		
	B13.30	Interior Attachments Beyond Beltline Region	Visual, VT-3	RPV-I: 47		
	B13.40	Core Support Structure	Visual, VT-3	RPV-I: 472		
B-O Pressure Retaining Welds in Control Rod Housings	B14.10	Welds in CRD Housing (10% of Peripheral CRD Housings)	Volumetric or Surface	RPV-E: 80	3RR-04	

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-P All Pressure Retaining Components (Periodic)	B15.10	Reactor Vessel - System Leakage Test (IWB-5220)	Visual, VT-2	CRD CS FW HPCI MS RCIC RHR RPV RR RWCU SBLC	3TA-02 3TA-03	
	B15.50	Piping - System Leakage Test (IWB-5220)	Visual, VT-2			
	B15.60	Pumps - System Leakage Test (IWB-5220)	Visual, VT-2			
	B15.70	Valves - System Leakage Test (IWB-5220)	Visual, VT-2			

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
C-A Pressure Retaining Welds in Pressure Vessels	C1.10	Shell Circumferential Welds	Volumetric	RHR: 2		
	C1.20	Head Circumferential Welds	Volumetric	RHR: 2		
C-B Pressure Retaining Nozzle Welds in Vessels	C2.21	Nozzle-to-Shell (Nozzle to Head or Nozzle to Nozzle) Welds	Surface	RHR: 4		
	C2.22	Nozzle Inside Radius Section	Volumetric	RHR: 4		
C-C Welded Attachments for Vessels, Piping, Pumps, and Valve	C3.10	Welded Attachments to Pressure Vessels	Surface	RHR: 16		
	C3.20	Welded Attachments to Piping	Surface	CS: 133 FW: 16 HPCI: 86 MS: 170 RCIC: 33 RHR: 272		
	C3.30	Welded Attachments to Pumps	Surface	RCIC: 4		
C-G Pressure Retaining Welds in Pumps and Valves	C6.10	Pump Casing Welds (Pumps)	Surface	CS: 64 RCIC: 1 RHR: 60	3RR-02	

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
C-H All Pressure Retaining Components (Periodic)	C7.10	System Leakage Test (IWC-5220)	Visual, VT-2	CRDSDV CRD CS FW HPCI MS RCIC RHR SBLC	3RR-07 3RR-08 3TA-02 3TA-03	

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
D-A Welded Attachments for Vessels, Piping, Pumps, and Valves	D1.10	Welded Attachments to Pressure Vessels	Visual, VT-1	ESW: 0+28		2
	D1.20	Welded Attachments to Piping	Visual, VT-1	ESW: 304 FPC: 18 MS: 337 RHRSW: 38		
D-B All Pressure Retaining Components (Periodic)	D2.10	System Leakage Test (IWD-5221)	Visual, VT-2	ESW FPC&CU RHRSW	3TA-01 3TA-02 3TA-03	
D-B All Pressure Retaining Components (Interval)	D2.20	System Hydrostatic Test (IWD-5222)	Visual, VT-2	ESW FPC&CU RHRSW	3TA-01 3TA-02 3TA-03	

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components	Relief Request/ TAP Number	Notes
E-A Containment Surfaces	E1.11	Accessible Surface Areas	General Visual & VT-3 (bolted Connections)	592	3RR-10 3TA-05	6
	E1.12	Wetted Surfaces of Submerged Areas	VT-3	24	3RR-10 3TA-05	7
	E1.20	BWR Vent System Accessible Surface Areas	VT-3	12	3RR-10 3TA-05 3TA-06	7
E-C Containment Surfaces Requiring Augmented Examination	E4.11	Visible Surfaces	VT-1	0	3RR-10	8
	E4.12	Surface Area Grid Grid Line Intersections and Minimum Wall Thickness Locations	Ultrasonic Thickness	0	3RR-10	9

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
F-A Supports	F1.10	Class 1 Piping Supports	Visual, VT-3	CS: 8 FW: 12 HPCI: 6 MS: 22 RCIC: 9 RHR: 37 RR: 10 RWCU: 26 SBLC: 24	3RR-03	1
	F1.20	Class 2 Piping Supports	Visual, VT-3	CRD: 30 CS: 73 FW: 2 HPCI: 61 MS: 62 RCIC: 37 RHR: 172	3RR-03	1
	F1.30	Class 3 Piping Supports	Visual, VT-3	ESW: 318 FPC: 25 MS: 195 RHRSW: 49	3RR-03	1
	F1.40	Supports Other Than Piping Supports (Class 1, 2, and 3)	Visual, VT-3	CS: 4 ESW: 0+29 HPCI: 2 RCIC: 1 RHR: 8 RHRSW: 2 RPV-E: 9 RR: 10	3RR-03	1 2

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components	Relief Request/ TAP Number	Notes
L-A	L1.11	Concrete Surface - All Accessible Surface Areas	General Visual	28	3RR-10	
Concrete	L1.12	Concrete Surface - Suspect Areas	Detailed Visual	0	3RR-10	

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components	Relief Request/ TAP Number	Notes
N/A Augmented Components	AUG1	FSAR 6.6.8, Augmented Inservice Inspection to Protect Against Postulated Piping Failures	Volumetric or Surface	COND: 3 FW: 14 HPCI: 17 MS: 63 RCIC: 17 RWCU: 29		
	AUG2	Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping Components and BWRVIP-75 "Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules"	Volumetric	Category B: 110 Category C: 22 Category D: 10		4
	AUG8	Augmented Inservice Inspection For Vibration Induced Failures	Volumetric	RPV-I: 1 RR: 149		
	AUG9	BWRVIP In-vessel Inspections (IGSCC Management Program BWR Vessel Internals and Piping Components) - BWROG, BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking Components - NUREG/CR-3052, BWR Jet Pump Assembly Failure - Augmented Inservice Inspection Of Non-Code Reactor Pressure Vessel Internals: Visual Examination - Augmented Inservice Inspection Of Non-Code Reactor Pressure Vessel Internals: Ultrasonic Examination	Various	In accordance with the BWRVIP Program		

Unit 1 & Common
Inservice Inspection Summary Table 7.0-1

Examination Category (with Category Description)	Risk Category Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
R-A Risk-Informed Piping Examinations	1	Risk Category 1 Elements	See Notes	FW: 56 RPV-E: 6	3RR-01	3 5
	2	Risk Category 2 Elements	See Notes	CS: 8 RHR: 15 RPV-E: 16	3RR-01	3 5
	4	Risk Category 4 Elements	See Notes	CS: 2 HPCI: 10 RPV-E: 10 RR: 72 RWCU: 58	3RR-01	3 5
	5	Risk Category 5 Elements	See Notes	FW: 10 HPCI: 24 RCIC: 24 RHR: 23	3RR-01	3 5

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-A Pressure Retaining Welds in Reactor Vessel	B1.11	Circumferential Shell Welds	Volumetric	RPV-E: 10	3RR-05	
	B1.12	Longitudinal Shell Welds	Volumetric	RPV-E: 13	3RR-05	
	B1.21	Circumferential Head Welds	Volumetric	RPV-E: 4		
	B1.22	Meridional Head Welds	Volumetric	RPV-E: 14		
	B1.30	Shell-to-Flange Weld	Volumetric	RPV-E: 6		
	B1.40	Head-to-Flange Weld	Volumetric & Surface	RPV-E: 3		
B-D Full Penetration Welds of Nozzles in Vessels	B3.90	Nozzle-to-Vessel Welds (Reactor Vessel)	Volumetric	RPV-E: 30		
	B3.100	Nozzle Inside Radius Section (Reactor Vessel)	Volumetric	RPV-E: 30		

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-G-1 Pressure Retaining Bolting, Greater Than 2 in. in Diameter	B6.10	Closure Head Nuts (Reactor Vessel)	Visual, VT-1	RPV-E: 76		
	B6.20	Closure Studs, in place (Reactor Vessel)	Volumetric	RPV-E: 76		
	B6.30	Closure Studs, when removed (Reactor Vessel)	Volumetric & Surface	RPV-E: 76		
	B6.40	Threads in Flange (Reactor Vessel)	Volumetric	RPV-E: 76		
	B6.50	Closure Washers, Bushings (Reactor Vessel)	Visual, VT-1	RPV-E: 76		
	B6.180	Bolts & Studs (Pumps)	Volumetric	RR: 32		
	B6.190	Flange Surface, when connection disassembled (Pumps)	Visual, VT-1	RR: 32		
	B6.200	Nuts, Bushings, and Washers (Pumps)	Visual, VT-1	RR: 32		
	B6.210	Bolts and Studs (Valves)	Volumetric	MS: 7	3TA-04	
	B6.220	Flange Surface, when connection disassembled (Valves)	Visual, VT-1	MS: 7		
B-G-2 Pressure Retaining Bolting, 2 in. and Less	B7.10	Bolts, Studs, and Nuts (Reactor Vessel)	Visual, VT-1	RPV-E: 3		
	B7.50	Bolts, Studs, and Nuts (Piping)	Visual, VT-1	MS: 16 RHR: 2 RR: 4		
	B7.70	Bolts, Studs, and Nuts (Valves)	Visual, VT-1	CS: 2 FW: 4 MS: 24 RHR: 2 RR: 4		
	B7.80	Bolts, Studs, & Nuts in CRD Housing	Visual, VT-1	RPV-E: 185		10

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-K Welded Attachments for Vessels, Piping, Pumps, and Valves	B10.10	Welded Attachments to Pressure Vessels	Surface or Volumetric	RPV-E: 9		11
	B10.20	Welded Attachments to Piping	Surface	MS: 32 RHR: 4 RR: 32		
	B10.30	Welded Attachments to Pumps	Surface	RR: 8		
B-L-2 Pump Casings	B12.20	Pump Casings	Visual, VT-3	RR: 2		
B-M-2 Valve Bodies	B12.50	Valve Bodies, (NPS 4 or Larger)	Visual, VT-3	CS: 6 FW: 6 HPCI: 2 MS: 24 RHR: 12 RR: 4 RWCU: 3		

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-N-1 Interior of Reactor Vessel	B13.10	Vessel Interior	Visual, VT-3	RPV-I: 12		
B-N-2 Welded Core Support Structures and Interior Attachments to Reactor Vessels	B13.20	Interior Attachments Within Beltline Region	Visual, VT-1	RPV-I: 23		
	B13.30	Interior Attachments Beyond Beltline Region	Visual, VT-3	RPV-I: 48		
	B13.40	Core Support Structure	Visual, VT-3	RPV-I: 640		
B-O Pressure Retaining Welds in Control Rod Housings	B14.10	Welds in CRD Housing (10% of Peripheral CRD Housings)	Volumetric or Surface	RPV-E: 80	3RR-04	

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
B-P All Pressure Retaining Components (Periodic)	B15.10	Reactor Vessel - System Leakage Test (IWB-5220)	Visual, VT-2	CRD CS FW HPCI MS RCIC RHR RPV RR RWCU SBLC	3TA-02 3TA-03	
	B15.50	Piping - System Leakage Test (IWB-5220)	Visual, VT-2			
	B15.60	Pumps - System Leakage Test (IWB-5220)	Visual, VT-2			
	B15.70	Valves - System Leakage Test (IWB-5220)	Visual, VT-2			

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
C-A Pressure Retaining Welds in Pressure Vessels	C1.10	Shell Circumferential Welds	Volumetric	RHR: 2		
	C1.20	Head Circumferential Welds	Volumetric	RHR: 2		
C-B Pressure Retaining Nozzle Welds in Vessels	C2.21	Nozzle-to-Shell (Nozzle to Head or Nozzle to Nozzle) Welds	Surface	RHR: 4		
	C2.22	Nozzle Inside Radius Section	Volumetric	RHR: 4		
C-C Welded Attachments for Vessels, Piping, Pumps, and Valves	C3.10	Welded Attachments to Pressure Vessels	Surface	RHR: 15		
	C3.20	Welded Attachments to Piping	Surface	CS: 73 FW: 16 HPCI: 70 MS: 183 MSIV: 1 RCIC: 42 RHR: 275		
	C3.30	Welded Attachments to Pumps	Surface	RCIC: 4		
C-G Pressure Retaining Welds In Pumps and Valves	C6.10	Pump Casing Welds (Pumps)	Surface	CS: 64 RCIC: 1 RHR: 71	3RR-02	

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
C-H All Pressure Retaining Components (Periodic)	C7.10	System Leakage Test (IWC-5220)	Visual, VT-2	CRDSDV CRD CS FW HPCI MS RCIC RHR SBLC	3RR-07 3RR-08 3TA-02 3TA-03	

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
D-A Welded Attachments for Vessels Piping, Pumps and Valves	D1.20	Welded Attachments - Piping	Visual, VT-1	ESW: 97 FPC: 16 MS: 306 RHRSW: 39		
D-B All Pressure Retaining Components (Periodic)	D2.10	System Leakage Test (IWD-5221)	Visual, VT-2	ESW FPC&CU RHRSW	3TA-01 3TA-02 3TA-03	
D-B All Pressure Retaining Components (Interval)	D2.20	System Hydrostatic Test (IWD-5222)	Visual, VT-2	ESW FPC&CU RHRSW	3TA-01 3TA-02 3TA-03	

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components	Relief Request/ TAP Number	Notes
E-A Containment Surfaces	E1.11	Accessible Surface Areas	General Visual & VT-3 (bolted Connections)	592	3RR-10 3TA-05	6
	E1.12	Wetted Surfaces of Submerged Areas	VT-3	24	3RR-10 3TA-05	7
	E1.20	BWR Vent System Accessible Surface Areas	VT-3	12	3RR-10 3TA-05 3TA-06	7
E-C Containment Surfaces Requiring Augmented Examination	E4.11	Visible Surfaces	VT-1	0	3RR-10	8
	E4.12	Surface Area Grid Grid Line Intersections and Minimum Wall Thickness Locations	Ultrasonic Thickness	0	3RR-10	9

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
F-A Supports	F1.10	Class 1 Piping Supports	Visual, VT-3	CS: 11 FW: 12 HPCI: 4 MS: 22 RCIC: 11 RHR: 36 RR: 12 RWCU: 27 SBLC: 22	3RR-03	1
	F1.20	Class 2 Piping Supports	Visual, VT-3	CRD: 30 CS: 87 FW: 2 HPCI: 64 MS: 63 RCIC: 35 RHR: 184	3RR-03	1
	F1.30	Class 3 Piping Supports	Visual, VT-3	ESW: 85 FPC: 17 MS: 196 RHRSW: 32	3RR-03	1
	F1.40	Supports Other Than Piping Supports (Class 1, 2, AND 3)	Visual, VT-3	CS: 4 HPCI: 2 RCIC: 1 RHR: 8 RHRSW: 2 RPV-E: 9 RR: 10	3RR-03	1

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components	Relief Request/ TAP Number	Notes
L-A	L1.11	Concrete Surface - All Accessible Surface Areas	General Visual	28	3RR-10	
Concrete	L1.12	Concrete Surface - Suspect Areas	Detailed Visual	0	3RR-10	

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components	Relief Request/ TAP Number	Notes
N/A Augmented Components	AUG1	FSAR 6.6.8, Augmented Inservice Inspection to Protect Against Postulated Piping Failures	Volumetric or Surface	FW: 18 HPCI: 10 MS: 58 RCIC: 20 RWCU: 25		
	AUG2	Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping Components and BWRVIP-75 "Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules"	Volumetric	Category B: 109 Category C: 30		4
	AUG8	Augmented Inservice Inspection For Vibration Induced Failures	Volumetric	RPV-I: 1 RR: 22		
	AUG9	BWRVIP In-vessel Inspections (IGSCC Management Program BWR Vessel Internals and Piping Components) - BWROG, BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking Components - NUREG/CR-3052, BWR Jet Pump Assembly Failure - Augmented Inservice Inspection Of Non-Code Reactor Pressure Vessel Internals: Visual Examination - Augmented Inservice Inspection Of Non-Code Reactor Pressure Vessel Internals: Ultrasonic Examination	Various	In accordance with the BWRVIP Program		

Unit 2
Inservice Inspection Summary Table 7.0-2

Examination Category (with Category Description)	Item Number	Description	Exam Requirements	Total Number of Components by System	Relief Request/ TAP Number	Notes
R-A Risk-Informed Piping Examinations	1	Risk Category 1 Elements	See Notes	FW: 67 RPV-E: 6	3RR-01	3 5
	2	Risk Category 2 Elements	See Notes	CS: 7 RHR: 12 RPV-E: 15	3RR-01	3 5
	4	Risk Category 4 Elements	See Notes	CS: 3 HPCI: 12 RPV-E: 10 RR: 63 RWCU: 54	3RR-01	3 5
	5	Risk Category 5 Elements	See Notes	FW: 12 HPCI: 22 RCIC: 20 RHR: 24	3RR-01	3 5

Inservice Inspection Summary Table Program Notes

Note #	Note Summary
1	ISI snubber visual examinations and functional testing are performed in accordance with the SSES TRM snubber program. The number of SSES Unit 1, 2, and Common supports identified, include snubbers for the visual examination and testing of the snubber per Paragraphs IWF-5200(a) and IWF-5300(a), and IWF-5200(b) and IWF-5300(b), and the integral and nonintegral attachments, including lugs, bolting, pins, and clamps per Paragraphs IWF-5200(c) and IWF-5300(c). The snubbers are scheduled and administratively tracked in the ISI Program; however, the TRM snubber program will be the mechanism for actually performing the visual examinations and tests scheduled within the ISI Program. It should be noted that snubber welded attachments will be performed in accordance with the ASME Section XI Subsections IWB, IWC, and IWD welded attachment examination requirements.
2	The Unit 1 population counts include those components that are common to both units (typically designated as "Common") and are listed in Table following a "+" symbol.
3	For the Third Inspection Interval, SSES's Class 1 and 2 piping inspection program will be governed by risk-informed regulations. The RISI Program methodology is described in the EPRI Topical Report TR-112657, Rev. B-A and Code Case N-578-1. The RISI Program scope will be implemented as an alternative to the 1998 Edition through the 2000 Addenda of the ASME Section XI examination program for Class 1 B-F and B-J welds and Class 2 C-F-1 and C-F-2 welds in accordance with 10CFR50.55a(a)(3)(i).
4	IGSCC Category A welds subsumed into the RISI Program.
5	Examination requirements within the RISI Program are determined by the various degradation mechanisms present at each individual piping structural element. See EPRI TR-112657, Rev. B-A and Code Case N-578-1 for specific exam method requirements.
6	Bolted connections within Item E1.11 require VT-3 for bolted connections followed by VT-1 if degradation or flaws are identified, as modified by 10CFR50.55a(b)(2)(ix)(G) and 10CFR50.55a(b)(2)(ix)(H).
7	Items E1.12 and E1.20 require VT-3 visual examination in lieu of General Visual examination, as modified by 10CFR50.55a(b)(2)(ix)(G).
8	Item E4.11 requires VT-1 visual examination in lieu of Detailed Visual examination, as modified by 10CFR50.55a(b)(2)(ix)(G).
9	The ultrasonic examination acceptance standard specified in IWE-3511.3 for Class MC pressure-retaining components must also be applied to metallic liners of Class CC pressure-retaining components, as modified by 10CFR50.55a(b)(2)(ix)(I).
10	Per 10CFR50.55a(b)(2)(xxi)(B), *Table IWB-2500-1 examination requirements*, the provisions of Table IWB-2500-1, Examination Category B-G-2, Item B7.80, that are in the 1995 Edition are applicable only to reused bolting when using the 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section.
11	Per 10CFR50.55a(b)(2)(xxi)(C), *Table IWB-2500-1 examination requirements*, the provisions of Table IWB-2500-1, Examination Category B-K, Item B10.10, of the 1995 Addenda must be applied when using the 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section.

8.0 RELIEF REQUESTS FROM ASME SECTION XI

This section contains relief requests written per 10CFR50.55a(a)(3)(i) for situations where alternatives to ASME Section XI requirements provide an acceptable level of quality and safety; per 10CFR50.55a(a)(3)(ii) for situations where compliance with ASME Section XI requirements results in a hardship or an unusual difficulty without a compensating increase in the level of quality and safety; and per 10CFR50.55a(g)(5)(iii) for situations where ASME Section XI requirements are considered impractical.

The following NRC guidance was utilized to determine the correct 10CFR50.55a Paragraph citing for SSES relief requests. 10CFR50.55a(a)(3)(i) and 10CFR50.55a(a)(3)(ii) provide alternatives to the requirements of ASME Section XI, while 10CFR50.55a(g)(5)(iii) recognizes situational impracticalities.

10CFR50.55a(a)(3)(i): Cited in relief requests when alternatives to the ASME Section XI requirements which provide an acceptable level of quality and safety are proposed. Examples are relief requests which propose alternative non-destructive examination (NDE) methods and/or examination frequency.

10CFR50.55a(a)(3)(ii): Cited in relief requests when compliance with the ASME Section XI requirements is deemed to be a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Examples of hardship and/or unusual difficulty include, but are not limited to, excessive radiation exposure, disassembly of components solely to provide access for examinations, and development of sophisticated tooling that would result in only minimal increases in examination coverage.

10CFR50.55a(g)(5)(iii): Cited in relief requests when conformance with ASME Section XI requirements is deemed impractical. Examples of impractical requirements are situations where the component would have to be redesigned, or replaced to enable the required inspection to be performed.

An index for SSES relief requests is included in Table 8.0-1. The "3RR-XX" relief request is applicable to ISI, CISI, and SPT.

TABLE 8.0-1
INSERVICE INSPECTION PROGRAM RELIEF REQUEST INDEX
Sheet 1 of 2

Relief Request	Revision Date[3]	Status[2]	(Program) Description/ Approval Summary[1]
3RR-01	0 7/18/03	Submitted	(ISI) Alternate Risk-Informed Selection and Examination Criteria for Category B-F, B-J, C-F-1, and C-F-2 Pressure Retaining Piping Welds. **Revision 0 Submitted.**
3RR-02	0 7/18/03	Submitted	(ISI) Alternative Requirements to the Examination of Pressure Retaining Welds in Pumps. **Revision 0 Submitted.**
3RR-03	0 7/18/03	Submitted	(ISI) ISI Snubbers Included in the TRM Snubber Visual Examination Program. **Revision 0 Submitted.**
3RR-04	0 7/18/03	Submitted	(ISI) Alternative Requirements to the Examination of Pressure Retaining Welds in Control Rod Housings. **Revision 0 Submitted.**
3RR-05	0 7/18/03	Authorized	(ISI) Circumferential Shell Weld Inspections. **Authorized per SER dated 2/28/01.**
3RR-06	0 7/18/03	Submitted	(ISI) Evaluation Criteria for Temporary Acceptance of Flaws. **Revision 0 Submitted.**
3RR-07	0 7/18/03	Submitted	(SPT) Exemption from Pressure Testing Reactor Pressure Vessel Head Flange Seal Leak Detection System. **Revision 0 Submitted.**

TABLE 8.0-1
INSERVICE INSPECTION PROGRAM RELIEF REQUEST INDEX
Sheet 2 of 2

Relief Request	Revision Date[3]	Status[2]	(Program) Description/ Approval Summary[1]
3RR-08	0 7/18/03	Submitted	(SPT) Continuous Pressure Monitoring of the Control Rod Drive (CRD) System Accumulators. **Revision 0 Submitted.**
3RR-09	0 7/18/03	Submitted	(SPT) Alternative Rules for Corrective Measures if Leakage Occurs at Bolted Connections. **Revision 0 Submitted.**
3RR-10	0 7/18/03	Submitted	(CISI) Synchronization of Ten-Year Interval for Class MC and CC Pressure Retaining Components and Their Integral Attachments to Coincide With the Ten-Year Interval for Class 1, 2 and 3 Components and Their Supports. **Revision 0 Submitted.**
3RR-11	0 7/18/03	Submitted	(CISI) Alternative Requirements for IWE-5240 Visual Examination. **Revision 0 Submitted.**

Note 1: The NRC grants relief requests pursuant to 10CFR50.55a(g)(6)(i) when Code requirements cannot be met and proposed alternatives do not meet the criteria of 10CFR50.55(a)(3). The NRC authorizes relief requests pursuant to 10CFR50.55a(a)(3)(i) if the proposed alternatives would provide an acceptable level of quality and safety or under (3)(ii) if compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of safety.

Note 2: This column represents the status of the latest revision. Relief Request Status Options: Authorized - Approved for use in an NRC SER (See Note 1); Granted - Approved for use in an NRC SER (See Note 1); Authorized Conditionally - Approved for use in an NRC SER which imposes certain conditions; Granted Conditionally - Approved for use in an NRC SER which imposes certain conditions; Denied - Use denied in an NRC SER; Expired - Approval for relief has expired; Withdrawn - Relief has been withdrawn by the station; Not Required - The NRC has deemed the relief unnecessary in an SER or RAI; Cancelled - Relief has been cancelled by the station prior to issue; Submitted - Relief has been submitted to the NRC by the station and is awaiting approval.

Note 3: The revision listed is the latest revision of the subject relief request. The date this revision became effective is the date of the approving SER which is listed in the fourth column of the table. The date noted in the second column is the date of the ISI Program Plan revision when the relief request was incorporated into the document.

RELIEF REQUEST NUMBER: 3RR-01
(Page 1 of 4)

COMPONENT IDENTIFICATION

Code Class:	1 and 2
Examination Category:	B-F, B-J, C-F-1, and C-F-2
Item Number:	B5.10, B5.140, B9.11, B9.21, B9.31, B9.32, B9.40, C5.11, C5.51, and C5.81
Description:	Alternate Risk-Informed Selection and Examination Criteria for Category B-F, B-J, C-F-1, and C-F-2 Pressure Retaining Piping Welds
Component Number:	Pressure Retaining Piping
Reference:	1) Electric Power Research Institute (EPRI) Topical Report (TR) 112657 Rev. B-A, "Revised Risk-Informed Inservice Inspection Evaluation Procedure" 2) W. H. Bateman (NRC) to G. L. Vine (EPRI) letter dated October 28, 1999 transmitting "Safety Evaluation Report Related to EPRI Risk-Informed Inservice Inspection Evaluation Procedure (EPRI TR-112657, Revision B, July 1999)" 3) American Society of Mechanical Engineers (ASME) Code Case N-578-1, "Risk-Informed Requirements for Class 1, 2, or 3 Piping, Method B" 4) Risk-Informed Inservice Inspection Evaluation, Final Report - Susquehanna Steam Electric Station Units 1 and 2 (Dated July 2003)

CODE REQUIREMENT

Table IWB-2500-1, Examination Category B-F, requires volumetric and/or surface examinations on all welds for Items B5.10 and B5.140.

Table IWB-2500-1, Examination Category B-J, requires volumetric and/or surface examinations on a sample of welds for Items B9.11, B9.21, B9.31, B9.32, and B9.40. The weld population selected for inspection includes the following:

1. All terminal ends in each pipe or branch run connected to vessels.

2. All terminal ends and joints in each pipe or branch run connected to other components where the stress levels exceed either of the following limits under loads associated with specific seismic events and operational conditions:

   a. primary plus secondary stress intensity range of $2.4S_m$ for ferritic steel and austenitic steel.
   b. cumulative usage factor U of 0.4.

RELIEF REQUEST NUMBER: 3RR-01
(Page 2 of 4)

CODE REQUIREMENT (Continued)

3. All dissimilar metal welds not covered under Category B-F.

4. Additional piping welds so that the total number of circumferential butt welds, branch connections, or socket welds selected for examination equals 25% of the circumferential butt welds, branch connection, or socket welds in the reactor coolant piping system. This total does not include welds excluded by IWB-1220.

Table IWC-2500-1, Examination Categories C-F-1 and C-F-2 require volumetric and/or surface examinations on a sample of welds for Items C5.11, C5.51, and C5.81. The weld population selected for inspection includes the following:

1. Welds selected for examination shall include 7.5%, but not less than 28 welds, of all dissimilar metal, austenitic stainless steel and high alloy welds (Category C-F-1) or of all carbon and low alloy steel welds (Category C-F-2) not exempted by IWC-1220. (Some welds not exempted by IWC-1220 are not required to be nondestructively examined per Examination Categories C-F-1 and C-F-2. These welds, however, shall be included in the total weld count to which the 7.5% sampling rate is applied.) The examinations shall be distributed as follows:

    a. the examinations shall be distributed among the Class 2 systems prorated, to the degree practicable, on the number of nonexempt dissimilar metal, austenitic stainless steel and high alloy welds (Category C-F-1) or carbon and low alloy welds (Category C-F-2) in each system;
    b. within a system, the examinations shall be distributed among terminal ends, dissimilar metal welds, and structural discontinuities prorated, to the degree practicable, on the number of nonexempt terminal ends, dissimilar metal welds, and structural discontinuities in the system; and
    c. within each system, examinations shall be distributed between line sizes prorated to the degree practicable.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative utilizing Reference 1 along with two enhancements from Reference 3 will provide an acceptable level of quality and safety.

As stated in "Safety Evaluation Report Related to EPRI Risk-Informed Inservice Inspection Evaluation Procedure (EPRI TR-112657, Revision B, July 1999)" (Reference 2):

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BASIS FOR RELIEF (Continued)

> "The staff concludes that the proposed RI-ISI Program as described in EPRI TR-112657, Revision B, is a sound technical approach and will provide an acceptable level of quality and safety pursuant to 10CFR50.55a for the proposed alternative to the piping ISI requirements with regard to the number of locations, locations of inspections, and methods of inspection."

The Risk Impact Assessment completed as part of the baseline RISI Program evaluation is an implementation/transition check on the initial impact of converting from a traditional ASME Section XI program to the new RISI methodology. For the Third Interval ISI update, there is no traditional ASME Section XI selection to compare with under the new code of assessed record since this is a new inspection interval. As such, the transition impact was between the previous second interval selection and the new RISI selection.

The actual evaluation and ranking procedure including the Consequence Evaluation, Degradation Mechanism Assessment, and Risk Ranking processes are summarized in the attached "Risk-Informed Inservice Inspection Evaluation, Final Report, Executive Summary". These processes are continually applied to maintain the Risk Categorization and Element Selection methods of EPRI TR-112657, Revision B-A. These portions of the RISI Program are reevaluated as major revisions of the site PRA occur and modifications to plant configuration are made. The Consequence Evaluation, Degradation Mechanism Assessment, Risk Ranking, and Element Selection steps define the *living program* process applicable to the RISI Program.

PROPOSED ALTERNATE PROVISIONS

The proposed alternative described in Attachment A, "Risk-Informed Inservice Inspection Evaluation, Final Report, Executive Summary", along with the two enhancements noted below, provide an acceptable level of quality and safety as required by 10CFR50.55a(a)(3)(i).

The Third Interval RISI Program will be an EPRI TR-112657, Revision B-A, application and will be maintained as a living program as described in the Basis For Relief above. The following two enhancements will be implemented.

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PROPOSED ALTERNATE PROVISIONS (Continued)

In lieu of the evaluation and sample expansion requirements in Section 3.6.6.2, "RI-ISI Selected Examinations" of EPRI TR-112657, SSES will utilize the requirements of Subarticle -2430, "Additional Examinations" contained in Code Case N-578-1 (Reference 3). The alternative criteria for additional examinations contained in Code Case N-578-1 provides a more refined methodology for implementing necessary additional examinations.

To supplement the requirements listed in Table 4-1, "Summary of Degradation-Specific Inspection Requirements and Examination Methods" of EPRI TR-112657, SSES will utilize the provisions listed in Table 1, Examination Category R-A, "Risk-Informed Piping Examinations" contained in Code Case N-578-1 (Reference 3). To implement Note 10 of this table, paragraphs and figures from the 1998 Edition through the 2000 Addenda of ASME Section XI (SSES's Code of record for the Third Interval) will be utilized which parallel those referenced in the Code Case for the 1989 Edition. Table 1 of Code Case N-578-1 will be used as it provides risk informed Category/Item Numbers, a detailed breakdown for examination method, and a categorization of parts to be examined where the TR is either silent or ambiguous.

The SSES RISI Program, as developed in accordance with EPRI TR-112657, Rev. B-A (Reference 1), requires that 25% of the elements that are categorized as "High" risk (i.e., Risk Category 1, 2, and 3) and 10% of the elements that are categorized as "Medium" risk (i.e., Risk Categories 4 and 5) be selected for inspection. For this application, the guidance for the examination volume for a given degradation mechanism is provided by the EPRI TR-112657 while the guidance for the examination method and categorization of parts to be examined are provided by the EPRI TR-112657 as supplemented by Code Case N-578-1.

In addition to this risk-informed evaluation, selection, and examination procedure, all ASME Section XI piping components, regardless of risk classification, will continue to receive Code required pressure testing as part of the current ASME Section XI program. VT-2 visual examinations are scheduled in accordance with the SSES pressure testing program, which remains unaffected by the RISI Program.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-01
ATTACHMENT A

Risk Informed Inservice Inspection Evaluation
Final Report
Executive Summary

EXECUTIVE SUMMARY

Risk Informed Inservice Inspection Program

Susquehanna Steam Electric Station

Units 1 and 2

EXECUTIVE SUMMARY

1. INTRODUCTION

The objective of this submittal is to request the use of a risk-informed inservice inspection (RISI) program for Class 1 and Class 2 piping that is currently inspected as part of the ASME Section XI based ISI program. The RISI program is proposed as an alternative to the 1998 Edition, 2000 Addenda of the ASME Section XI requirements for the third inspection interval. The risk-informed process used in this submittal is described in EPRI RISI Topical Report (Reference 1) and the accompanying NRC staff SER on the EPRI method. To strengthen the technical basis for this RISI program beyond the minimum requirements implied by the EPRI RISI Topical Report, a number of enhancements were made to the process that are described in the paragraphs below.

The RISI Program will be incorporated during the first period of the Third Ten-Year Inservice Inspection Interval for PPL's Susquehanna Steam Electric Station (SSES), Units 1 and 2. The Third Ten-Year Inspection Interval will start June 1, 2004 and is projected to end June 1, 2014 for both units. At that time, the SSES Units 1 and 2 ISI Programs will require updating for the Fourth Inservice Inspection Interval.

As a risk-informed application, this submittal meets the principles of Regulatory Guides 1.174 and 1.178 as well as those set forth in the EPRI RISI Topical Report and the NRC staff SER on the EPRI RISI method.

PRA Quality

The SSES PRA model (Reference 2) used for the risk determinations for this regulatory application is an update to the Individual Plant Examination (IPE) submitted to the NRC by letter dated December 13, 1991. The IPE had been accepted by the NRC by Staff Evaluation Report (SER) letter dated August 11, 1998.

The SSES PRA is continually updated through the calculation process. The SSES PRA is a Level 2 PRA, which has had an "expert" review by W. E. Vesely, May 29, 1997.

2. PROPOSED ALTERNATIVE TO CURRENT ISI PROGRAM REQUIREMENTS

2.1 ASME Section XI

ASME Section XI Categories B-F, B-J, C-F-1, and C-F-2 currently contain the requirements for examining these Class 1 and Class 2 piping components via Non Destructive Examination (NDE) methods.

2.2 Alternate RISI Program

The alternative RISI program for piping is described in EPRI RISI Topical Report. The RISI program will be substituted for the 1998, 2000 Addenda ASME Section XI Code Edition examination program for Class 1 Category B-J and B-F welds and Class 2 Category C-F-1 and C-F-2 welds in accordance with 10 CFR 50.55a(a)(3)(i) by alternatively providing an acceptable level of quality and safety. Other portions of the ASME Section XI Code imposed inservice inspection program outside of this RISI scope will be unaffected. The EPRI Topical Report provides the requirements for defining the relationship between the risk-informed examination program and the remaining unaffected portions of ASME Section XI.

2.3 Augmented Programs

As discussed in Section 6 of the EPRI Topical Report, certain augmented inspection programs may be integrated into the RISI program. At this time, no augmented programs are integrated in the RISI program, with the exception of the IGSCC Category A welds. The following augmented programs were not integrated into the RISI program and remain unaffected:

- IGSCC in BWR Austenitic Stainless Steel Piping (Generic Letter 88-01 and NUREG-0313). Only IGSCC Category A welds will be integrated into the RISI program.
- Flow Accelerated Corrosion (FAC) (Generic Letter 89-08)
- High Energy Line Breaks (USNRC Branch Technical Position MEB 3-1)

Elements in the scope of this evaluation that were also covered by these augmented programs were included in the consequence assessment, degradation assessment, and risk categorization evaluations, to determine the damage mechanisms at those elements and whether the affected piping was subject to damage mechanisms other than those addressed by the augmented program. If no other damage mechanism was identified, the element was removed from the RISI element selection population and retained in the appropriate augmented inspection program. If another damage mechanism was identified, the element was retained within the scope of consideration for element selection as part of the RISI program. In the Feedwater System, many of the elements covered by the FAC program were also assessed for the potential for other damage mechanisms that are evaluated as part of the EPRI RISI methodology. The entire scope of the RISI evaluation including those elements covered by augmented programs and not included in the RISI selection population were included in the risk impact assessment phase of the evaluation described below.

2.4 Multiple Damage Mechanisms

The vast majority of pipe elements that were evaluated in the RISI evaluation were found to be susceptible to none of the damage mechanisms addressed in the EPRI RISI methodology. A number of elements were found to be susceptible to one specific damage mechanism, and a relatively small number were identified to be subject to the potential for two or more damage mechanisms. Specific examples are welds in the Feedwater and Reactor Pressure Vessel systems that are subject to both FAC and thermal fatigue, as well as welds in the Residual Heat Removal and Reactor Pressure Vessel systems that have the potential for both IGSCC and thermal fatigue. If one of the damage mechanisms was FAC, the element was assigned to the High failure potential category to be consistent with the EPRI Topical Report. If that assignment led to the decision to select that element for inspection in accordance with the 25% sampling requirement, it was retained in the FAC program for inspection for FAC as well as inspected for the remaining damage mechanism as part of the RISI program. The potential for synergy between two or more damage mechanisms working on the same location was considered in the estimation of pipe failure rates and rupture frequencies which was reflected in the risk impact assessment.

3. RISK-INFORMED ISI PROCESS

The process used to develop the RISI program is consistent with the methodology described in the EPRI Topical Report for ASME Code Case N-578-1 (Reference 5) applications. The process involves the following steps:

- Definition of RISI Program Scope
- Consequence Analysis
- Degradation Mechanism Assessment
- Risk Categorization
- Inspection Location Selection and NDE Selection
- Program Relief Requests
- Risk Impact Assessment
- Implementation and Monitoring Program

3.1 Definition of RISI Program Scope

The systems to be included in the RISI program are provided in Table 1. This scope covers ASME Class 1 and 2 piping systems within the scope of the existing ASME Section XI inspection program. The as-built and as-operated isometric and piping and instrumentation diagrams and additional plant information were used to define the

system boundaries. The RISI evaluation system boundaries were defined using the system boundaries established in the existing plant ISI program.

3.2 Consequence Analysis

The consequences of pressure boundary failures were evaluated and ranked based on their impact on conditional core damage probability (CCDP) and conditional large early release probability (CLERP). The impact on these measures due to both direct and indirect effects was determined using the PRA model described in Section 1. Consequence categories (High, Medium or Low) were assigned according to Table 3-1 of the EPRI RISI Topical Report. One of the enhancements that was incorporated into this application of the EPRI RISI methodology was the direct use of the PRA models to support the estimation of CCDP and CLERP values for each pipe element in the scope of the RISI evaluation, in lieu of the consequence tables in the EPRI Topical Report. This step was taken to reduce some of the conservatisms inherent in the consequence tables and to support a more complete and realistic quantification of the risk impacts of the RISI program in comparison with previous applications of this methodology. Another motivation was to increase consistency with other risk informed applications at SSES that directly utilize the plant-specific PRA models.

3.3 Degradation Mechanism Assessment

Failure potential was assessed using the deterministic criteria in the EPRI Topical Report to evaluate the potential for each damage mechanism that an ISI exam could identify, and be supported by industry failure history, plant-specific failure history, and other relevant information. These failure estimates were determined using the guidance provided in the EPRI Topical Report.

Table 2 summarizes the degradation mechanism assessment by system for each damage mechanism that was identified as a potential failure cause. In addition, failure rates and rupture frequencies were assessed for each piping element within the scope of the RISI evaluation using information in Reference 4 and described in the Tier 2 documentation (Reference 3).

3.4 Risk Categorization

In the preceding steps, each element within the scope of the RISI program was evaluated to determine the consequences of its failure, as measured by CCDP and CLERP. Each element was also evaluated to determine its potential for pipe rupture based on the potential for degradation mechanisms that were identified. The results of the consequence assessment were then combined with the results of the degradation assessment, using the risk matrix shown in Figure 1. This provides a risk ranking and risk category for each element.

The results of this evaluation in terms of the number of elements in each of the EPRI RISI risk categories per system are summarized in Table 3 and Table 4 for SSES Unit 1 and Unit 2, respectively.

POTENTIAL FOR PIPE RUPTURE PER DEGRADATION MECHANISM SCREENING CRITERIA	CONSEQUENCES OF PIPE RUPTURE IMPACTS ON CONDITIONAL CORE DAMAGE PROBABILITY AND LARGE EARLY RELEASE PROBABILITY			
	NONE	LOW	MEDIUM	HIGH
HIGH FLOW ACCELERATED CORROSION	LOW Category 7	MEDIUM Category 5	HIGH Category 3	HIGH Category 1
MEDIUM OTHER DEGRADATION MECHANISMS	LOW Category 7	LOW Category 6	MEDIUM Category 5	HIGH Category 2
LOW NO DEGRADATION MECHANISMS	LOW Category 7	LOW Category 7	LOW Category 6	MEDIUM Category 4

Figure 1

EPRI RISI Matrix for Risk Ranking of Pipe Elements (Reference 1)

3.5 Inspection Location Selection and NDE Selection

In general, an ASME Code Case N-578-1 application of RISI, per the EPRI RISI Topical Report, requires that 25% of the elements that are categorized as "High" risk (Risk Category 1, 2, or 3) and 10% of the elements that are categorized as "Medium" risk (Risk Categories 4 and 5) be selected for inspection and appropriate non-destructive examination (NDE). Inspection locations are generally selected on a system-by-system basis, so that each system with "High" risk category elements will have approximately 25% of the system's "High" risk elements selected for inspection and similarly 10% of the elements in systems having "Medium" risk category welds will be selected. During the selection process, an attempt is made to ensure that all damage mechanisms and all combinations of damage mechanisms are represented in the elements selected for inspection. An element ranking process was used to incorporate several factors into the selection of specific elements to satisfy the above sampling percentages. These

factors include whether the element has been previously selected for ISI exams, whether previous exams had indications of possible damage, presence of radiation fields in the vicinity of the elements, accessibility of the element for inspection, and numerical estimates of the pipe rupture frequencies at these locations. The results of the selection are presented in Tables 5 and 6 for Units 1 and 2, respectively. Section 4 of the EPRI Topical Report and ASME Code Case N-578-1 (Reference 7) were used as guidance in determining the examination methods and requirements for these locations. From the Class 1 butt welded elements that are considered within the scope of the RISI evaluation at Unit 1, a total of 12.7% are selected for volumetric examination as part of the risk informed inspection program. The corresponding percentage for Unit 2 is 14.6%. The total Class 1 welds selected for RISI evaluation is 10.9% for Unit 1 and 12.2% for Unit 2. As noted above, elements found to be susceptible to two or more damage mechanisms are given enhanced treatment by retaining them within the scope of the augmented programs and in the risk informed program for the applicable damage mechanisms.

In addition, all in-scope piping components, regardless of risk classification, will continue to receive Code-required pressure and leak testing, as part of the current ASME Section XI program. VT-2 visual examinations are scheduled in accordance with the station's pressure and leak test program, which remains unaffected by the RISI program.

Additional Examinations

Examinations performed that reveal flaws or relevant conditions exceeding the applicable acceptance standards shall be extended to include additional examinations. The additional examinations shall include piping structural elements with the same postulated failure mode and the same or higher failure potential.

(1) The number of additional elements shall be the number of piping structural elements with the same postulated failure mode originally scheduled for that fuel cycle.

(2) The scope of the additional examinations may be limited to those high safety significant piping structural elements (i.e., Risk Group Categories 1 through 5) within systems, whose material and service conditions are determined by an evaluation to have the same postulated failure mode as the piping structural element that contained the original flaw or relevant condition.

If the additional required examinations reveal flaws or relevant conditions exceeding the referenced acceptance standards, the examination shall be further extended to include additional examinations.

(1) These examinations shall include all remaining piping elements whose postulated failure modes are the same as the piping structural elements originally examined.

(2) An evaluation shall be performed to establish when those examinations are to be conducted. The evaluation must consider failure mode and potential.

No additional examinations will be performed if there are no additional elements identified as being susceptible to the same root cause conditions.

For the inspection period following the period in which the original examination discovering the flaw or relevant condition was completed, the examinations shall be performed as originally scheduled.

3.6 Program Relief Requests

In instances where a location may be found at the time of the examination that does not meet the >90% coverage requirement, the process outlined in the EPRI Topical Report will be followed.

As required by Section 6.4 of EPRI TR-112657, PPL has completed an evaluation of existing relief requests to determine if any should be withdrawn or modified due to changes that occur from implementing the RISI Program. There are no existing relief requests required to be withdrawn. There are no existing relief requests that are required to be modified due to RISI expansion of the examination volume.

3.7 Risk Impact Assessment

The RISI program has been conducted in accordance with Regulatory Guides 1.174 and 1.178, and the EPRI Topical Report, which require an evaluation to show that implementation of a risk informed inspection program would result in acceptably small changes, if any, in core damage frequency (CDF) and LERF.

The risk impact assessment performed in this RISI application included a qualitative evaluation as well as a comprehensive quantitative evaluation of the changes in CDF and LERF due to changes in the ISI program for each piping element in the scope of the RISI evaluation. This is another enhancement that was made that goes well beyond the limited quantitative analyses that are needed to implement the methods described in the EPRI Topical Report.

Individual elements were evaluated for consequence and degradation mechanism and then assigned to a risk category and risk ranking as part of the risk characterization step. The elements were then grouped by system and the changes in risk for each

element was summed to provide the change in risk for the system due to increases and decreases in the number of exams and for the potential for increases in the NDE probability of detection where the "inspection for cause" principle was applied.

Per Section 3.7.2 of EPRI TR-112657, the Markov piping reliability analysis method was used to estimate the change in risk due to adding and removing locations from the inspection program. The actual CCDP and CLERP values calculated for each element in the consequence assessment was used in the risk impact calculation. Realistic quantitative estimates of failure frequencies, rupture frequencies, and risk impacts were performed for all elements within the scope of the RISI evaluation, in lieu of the qualitative analysis and bounding risk estimates that are permitted under most circumstances in the EPRI RISI Topical Report.

The changes to the ASME Section XI ISI program include changing the number and location of inspections within the risk segment, and in many cases improving the effectiveness of the inspection to account for the results of the RISI degradation mechanism assessment. For example, for locations subject to thermal fatigue, examinations are to be conducted on an expanded volume and are to be focused to enhance the probability of detection (POD) during the inspection process. For other damage mechanisms, this "inspection for cause" principle is also expected to favorably impact the POD.

Limits are imposed by the EPRI methodology (TR-112657) to ensure that the change in risk of implementing the RISI program meets the requirements of Regulatory Guides 1.174 and 1.178. The criteria established require that the cumulative increase in CDF and LERF be less than $1x10^{-7}$ and $1x10^{-8}$ per year per system, respectively. Meeting these limits is consistent with meeting Regulatory Guide 1.174 risk significant thresholds of $1x10^{-6}$ per year and $1x10^{-7}$ per year for changes in CDF and LERF, respectively, for a full plant scope RISI application.

The technical basis for the Markov model input parameters that were used in this evaluation are documented in the Tier 2 documentation (Reference 3). These parameters include a set of failure rates and rupture frequencies for piping systems in General Electric BWR plants subject to several degradation mechanisms that were identified for these systems as part of the degradation mechanism assessment. The failure rates and rupture frequencies that were used in this evaluation are those developed in Table A-11 in EPRI TR-111880 (Reference 4).

Separate Markov calculations were performed for the change in CDF and the change in LERF. This calculation was performed so that pipe elements whose failure could create a potential containment failure or bypass concern were factored into the LERF evaluation. Unlike previous applications of the EPRI methodology, realistic estimates of CDF and LERF contributions and changes in CDF and LERF due to all changes in the

RISI program were quantified for all pipe elements, in addition to a qualitative evaluation that is part of the EPRI procedure.

The results of the risk impact assessment for each system at SSES Unit 1 are summarized in Table 7 and key aspects are plotted in Figures 2 and 3 for comparison against the risk significant criteria established in the EPRI RISI Topical Report. A similar set of results is presented in Table 8 and Figures 4 and 5 for Unit 2. As seen in these figures and tables, the RPV-E and RHR system groups at Unit 1 and Unit 2 exhibited small decreases in CDF due to the changes from the RISI program. The RPV-E system group at Unit 1 and Unit 2 exhibited small decreases in LERF. The remaining systems evaluated across the two reactor units exhibited very small increases in CDF and LERF. In each case in which a risk increase was identified, the estimated increases in CDF and LERF are much smaller than the risk acceptance criteria by a large margin. Each system was found to have a change in LERF that is less than or equal to 30% of the EPRI RISI risk significance threshold of $1x10^{-8}$/system-year, and a change in CDF that is less than 3% of the associated threshold of $1x10^{-7}$/system-year.

The total change in CDF and LERF due to the combined changes in the RISI program for the entire scope of Class 1 and 2 systems is negative, indicating a decrease in risk.

As a sensitivity case, an evaluation was performed assuming that all NDE exams were removed from the ISI program, indicating that the EPRI RISI risk significance thresholds still would not be exceeded.

As indicated above, the risk impact evaluation has demonstrated that no significant risk impacts will occur from implementation of the RISI program for the entire scope of Class 1 and 2 piping that was included in this evaluation. This satisfies the risk significance criteria of Regulatory Guide 1.174 and the EPRI RISI Topical Report.

Defense-In-Depth

The intent of the inspections mandated by ASME Section XI for piping welds is to identify conditions such as flaws or indications that may be precursors to leaks or ruptures in a system's pressure boundary. Currently, the process for picking inspection locations is based upon structural discontinuity and stress analysis results. As depicted in ASME White Paper 92-01-01 Rev. 1, "Evaluation of Inservice Inspection Requirements for Class 1, Category B-J Pressure Retaining Welds," this method has been ineffective in identifying leaks or failures. EPRI TR-112657 and ASME Code Case N-578-1 provide a more robust selection process founded on actual service experience taken from nuclear plant piping failure data.

This process has two key independent ingredients: (1) a determination of each location's susceptibility to degradation and (2) an independent assessment of the

consequence of the piping failure. These two ingredients assure defense-in-depth is maintained. First, by evaluating a location's susceptibility to degradation, the likelihood of finding flaws or indications that may be precursors to leak or ruptures is increased. Secondly, the consequence assessment effort has a single failure criterion. As such, no matter how unlikely a failure scenario is, it is ranked High in the consequence assessment, and no lower than Medium in the risk assessment (i.e., Risk Category 4), if, as a result of the failure, there is no mitigative equipment available to respond to the event. In addition, the consequence assessment takes into account equipment reliability, with less credit given to less reliable equipment.

All locations within the reactor coolant pressure boundary will continue to receive a system pressure test and visual VT-2 examination as currently required by the Code regardless of its risk classification.

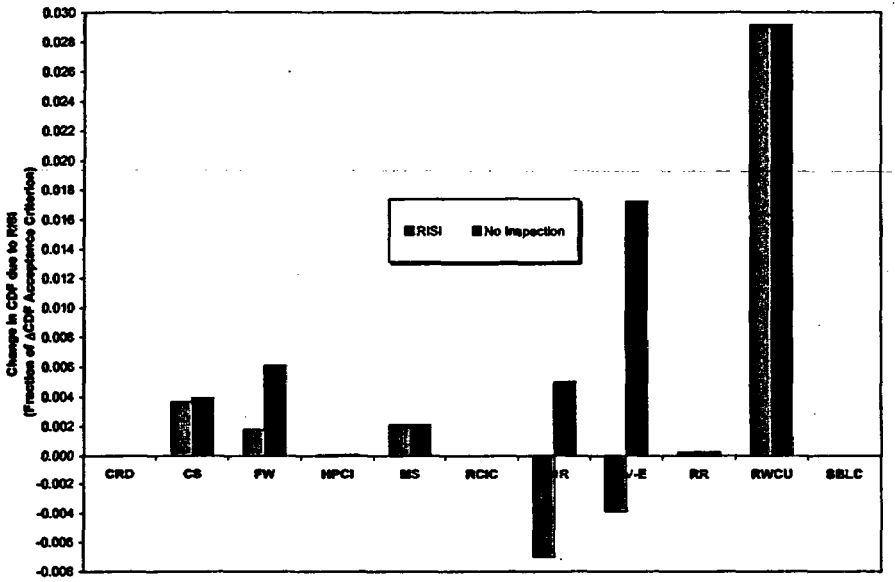

Figure 2

Change in Pipe Rupture CDF for SSES Unit 1 Systems

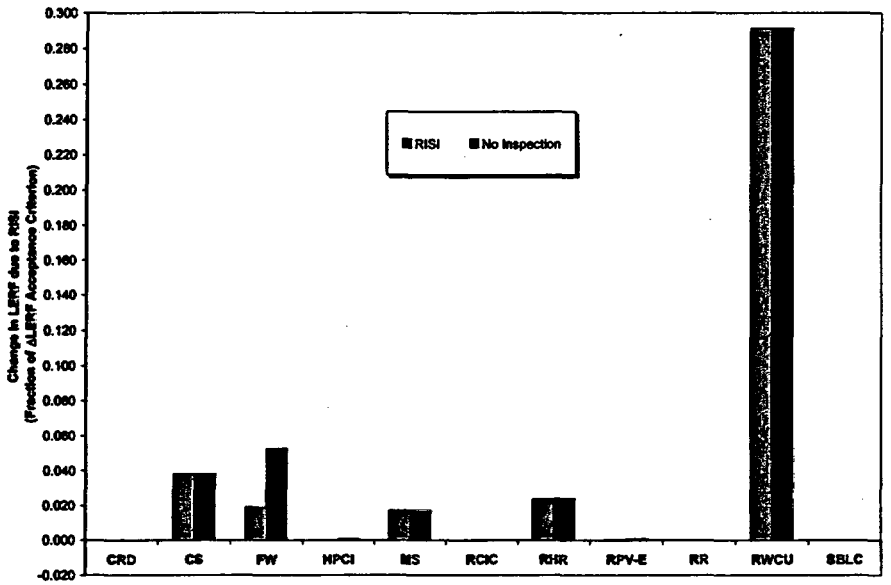

Figure 3
Change in Pipe Rupture LERF for SSES Unit 1 Systems

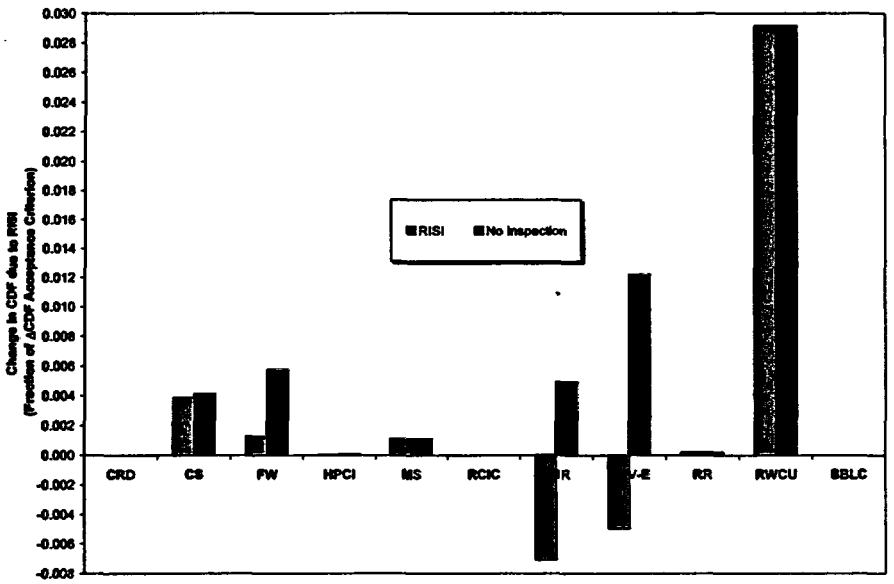

Figure 4
Change in Pipe Rupture CDF for SSES Unit 2 Systems

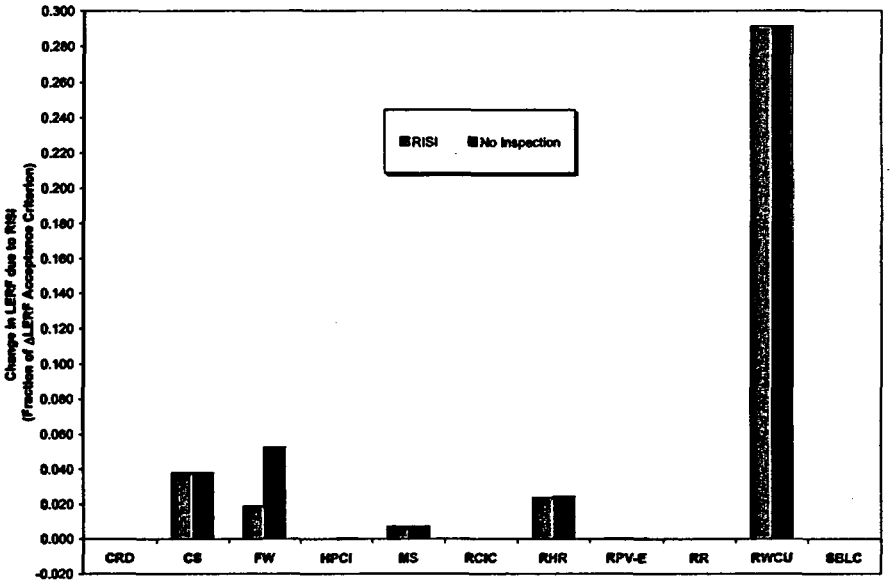

Figure 5

Change in Pipe Rupture LERF for SSES Unit 2 Systems

4. IMPLEMENTATION AND MONITORING PROGRAM

Upon approval of the RISI program, procedures that comply with the guidelines described in EPRI RISI Topical Report will be prepared to implement and monitor the program. The new program will be integrated into the third ten-year interval for SSES Unit 1 and into the third ten-year interval for SSES Unit 2. No changes to the Updated Final Safety Analysis Report are necessary for program implementation.

The applicable aspects of the ASME Code not affected by this change are to be retained, such as inspection methods, acceptance guidelines, pressure testing, corrective measures, documentation requirements, and quality control requirements. Existing ASME Section XI program implementing procedures are to be retained and modified to address the RISI process, as appropriate.

The RISI program is a living program requiring feedback of new relevant information to ensure the appropriate identification of high safety significant piping locations. Such relevant information would include major updates to the SSES Units 1 and 2 PRA models which could impact both the risk characterization and risk impact assessments, any new trends in service experience with piping systems at SSES and across the industry, and new information on element accessibility that will be obtained as the risk informed inspections are implemented. As a minimum, risk ranking of piping element

selections will be reviewed and adjusted on an ASME ISI interval basis. In addition, changes may occur more frequently as directed by NRC Bulletin or Generic Letter requirements, or by industry and plant-specific service experience feedback.

5. PROPOSED ISI PROGRAM PLAN CHANGE

A comparison between the new RISI program and the applicable portions of the previous Second Interval ISI Program (Categories B-F, B-J, C-F-1, and C-F-2 of ASME Section XI, 1989 Edition with no Addenda) is provided in Table 5 and Table 6 for Unit 1 and Unit 2, respectively. The number of exams for Unit 1 is reduced from 205 Section XI program exams to 54 RISI program exams, a net reduction of 151 exams. An additional 127 Section XI exams were also eliminated from the FAC and IGSCC augmented program welds for a total reduction of 278 exams compared to the 332 Section XI total (84% reduction). Unit 2 is reduced from 165 exams to 55 exams, a net reduction of 110 exams. An additional 118 Section XI exams were also eliminated from the FAC and IGSCC augmented program welds for a total reduction of 228 exams compared to the 283 Section XI total (81% reduction). Inspections scheduled as part of the FAC or IGSCC augmented programs remain in effect, as these augmented programs are unchanged by the RISI program. As shown in Tables 7 and 8, the total change in CDF and LERF due to the net changes in number and location of inspections in all systems that were evaluated in this risk informed evaluation was found to be negative, representing a net decrease in risk with the RISI program. These risk impacts are acceptable in relation to the risk significance thresholds of the EPRI Topical Report and those in Regulatory Guide 1.174.

6. REFERENCES

1. EPRI, "Revised Risk-Informed Inservice Inspection Evaluation Procedure," TR-112657, Rev. B-A, December 1999.
2. Susquehanna Steam Electric Station PRA Calculation Model EC-RISK-1083, Rev. 1.
3. Risk Informed Inservice Inspection Evaluation, Susquehanna Steam Electric Station Units 1 and 2 – Final Report.
4. T.J. Mikschl and K.N. Fleming, "Piping System Failure Rates and Rupture Frequencies for Use in Risk informed Inservice Inspection Applications," EPRI TR-111880, 1999, September 1999. *EPRI Licensed Material*
5. ASME Code Case N-578-1, "Risk-Informed Requirements for Class 1, 2, and 3 Piping, Method B, Section XI, Division 1.

Table 1

System Selection for SSES Unit 1 and Unit 2

System Description
Control Rod Drive and Scram Discharge Volume (CRD)
Core Spray (CS)
Feedwater (FW)
High Pressure Coolant Injection (HPCI)
Main Steam (MS)
Reactor Core Isolation Cooling (RCIC)
Residual Heat Removal (RHR)
Reactor Pressure Vessel (RPV-E)
Reactor Recirculation (RR)
Reactor Water Cleanup System (RWCU)
Standby Liquid Control (SBLC)

NOTES: This table shows the systems that contain welds that are Class 1 or Class 2 category B-J, B-F, C-F-1, or C-F-2.

Table 2

Failure Potential Assessment Summary for SSES Unit 1 and Unit 2

System	Thermal Fatigue		Stress Corrosion Cracking				Localized Corrosion			Flow Sensitive	
	TASCS	TT	IGSCC	TGSCC	ECSCC	PWSCC	MIC	PIT	CC	E-C	FAC
CRD[1]											
CS	X		X								
FW	X	X									X
HPCI		X									
MS											X
RCIC		X									X
RHR	X	X	X							X	
RPV-E	X	X	X						X		X
RR			X								
RWCU			X								X
SBLC											

1. Includes scram discharge volume.

TASCS – thermal stratification, cycling and stripping, TT – thermal transients, IGSCC – intergranular stress corrosion cracking, TGSCC – transgranular stress corrosion cracking, ECSCC – external chloride stress corrosion cracking, PWSCC – primary water stress corrosion cracking, MIC – microbiologically influenced corrosion, PIT – pitting, CC – crevice corrosion, E-C – erosion-cavitation, FAC – flow accelerated corrosion

NOTE: This table shows the assessed failure mechanisms for each system. The RISI Program addresses the cumulative impact of all mechanisms that were identified in each system.

Table 3

Number of Elements (Welds) by Risk Category for SSES Unit 1

System	High Risk[2]			Medium Risk[2]		Low Risk[2]	TOTAL
	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6 or 7	All Categories
CRD[1]						37	37
CS		10		2	2	185	199
FW	88				11		99
HPCI				10	24	129	163
MS	272		4				276
RCIC	13				29	57	99
RHR		19			44	487	550
RPV-E	10	22		10			42
RR		60		72		7	139
RWCU	52	6		58	3	13	132
SBLC						53	53
TOTAL	435	117	4	152	113	968	1789

1. Includes scram discharge volume.
2. See Figure 1 for definition of EPRI Risk Categories.

NOTE: This table shows the results of the Risk Categorization for Unit 1. The risk categories are defined in Figure 3-4 of EPRI TR-112657 (Reference 1).

Table 4

Number of Elements (Welds) by Risk Category for SSES Unit 2

System	High Risk[2]			Medium Risk[2]		Low Risk[2]	TOTAL
	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6 or 7	All Categories
CRD[1]						39	39
CS		9		3	2	181	195
FW	87				14		101
HPCI				12	22	118	152
MS	293		4				297
RCIC	14				25	70	109
RHR		16			41	470	527
RPV-E	10	22		10			42
RR		62		63		14	139
RWCU	62	6		54	4	10	136
SBLC						41	41
TOTAL	466	115	4	142	108	943	1778

1. Includes scram discharge volume.
2. See Figure 1 for definition of EPRI Risk Categories.

NOTE: This table shows the results of the Risk Categorization for Unit 2. The risk categories are defined in Figure 3-4 of EPRI TR-112657 (Reference 1). The minor differences are due to slight differences in the number of welds in these systems.

Table 5
Number of Inspections by Risk Category for SSES Unit 1

	High Risk[2]						Medium Risk[2]				Low Risk[2]		All Risk Categories	
	Category 1		Category 2		Category 3		Category 4		Category 5		Category 6 or 7			
System	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI
CRD[1]											3	0	3	0
CS			8	2			0	1	1		17	0	26	3
FW	18	14							7	2	0	0	25	16
HPCI							2	1	1	3	15	0	18	4
MS	56	0			2	0				0	0	0	58	0
RCIC									1	3	8	0	9	3
RHR			15	4					12	3	42	0	69	7
RPV-E	10	2	22	4			8	1				0	40	7
RR			29				20	8			5	0	54	8
RWCU	2	0	5			0	8	6	1		2	0	18	6
SBLC											12	0	12	0
TOTAL	86	16	79	10	2	0	38	17	23	11	104	0	332	54

1. Includes scram discharge volume.
2. See Figure 1 for definition of EPRI RISI risk categories.

NOTE: This table provides a comparison of the RISI element selection to the original ASME Section XI program. The total number of inspections is significantly lower for the RISI program. Some RISI inspection locations are new when compared to the Section XI program, i.e., they were previously not addressed.

Table 6

Number of Inspections by Risk Category for SSES Unit 2

System	High Risk[2]						Medium Risk[2]				Low Risk[2]		All Risk Categories	
	Category 1		Category 2		Category 3		Category 4		Category 5		Category 6 or 7			
	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI	Sec. XI	RISI
CRD[1]											3	0	3	0
CS			7	2		1	1	1	1		17	0	26	3
FW	12	17							7	2	0	0	19	19
HPCI						2	3	1	1	3	12	0	16	5
MS	41	0			2	0				0	0	0	43	0
RCIC									1	2	7	0	8	2
RHR			12	3				14	14	3	43	0	69	6
RPV-E	3	2	22	4		1	4					0	29	7
RR			34			7	13			0		0	47	7
RWCU	3	0	3			6	5		3	0		0	14	6
SBLC											9	0	9	0
TOTAL	59	19	78	9	2	17	26	16	27	10	91	0	283	55

1. Includes scram discharge volume.
2. See Figure 1 for definition of EPRI RISI Risk Categories.

NOTE: This table provides the same information for Unit 2 that Table 5 provides for Unit 1.

Table 7

Impact of RISI and No Inspections on CDF and LERF Due to Pipe Ruptures for SSES Unit 1 Systems

System	System CDF Events/Reactor-Year			Δ CDF Events/Reactor-Year			Δ LERF Events/Reactor-Year		
	Section XI	RISI	No Inspection	RISI	No Inspection	Acceptance Criterion	RISI	No Inspection	Acceptance Criterion
CRD[1]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	<1.00E-07	0.00E+00	0.00E+00	<1.00E-08
CS	3.44E-10	7.31E-10	7.41E-10	3.87E-10	3.96E-10	<1.00E-07	3.82E-10	3.87E-10	<1.00E-08
FW	8.07E-09	7.90E-09	9.80E-09	-1.65E-10	1.73E-09	<1.00E-07	-1.60E-10	1.33E-09	<1.00E-08
HPCI	3.87E-11	4.07E-11	4.37E-11	2.04E-12	4.98E-12	<1.00E-07	1.58E-12	4.55E-12	<1.00E-08
MS	2.22E-09	2.51E-09	2.51E-09	2.89E-10	2.89E-10	<1.00E-07	2.55E-10	2.55E-10	<1.00E-08
RCIC	3.30E-11	3.30E-11	3.30E-11	5.35E-15	5.62E-15	<1.00E-07	-5.01E-14	5.62E-15	<1.00E-08
RHR	1.35E-09	1.63E-09	1.71E-09	2.79E-10	3.61E-10	<1.00E-07	2.55E-10	2.68E-10	<1.00E-08
RPV-E	9.20E-09	1.37E-08	2.00E-08	4.55E-09	1.08E-08	<1.00E-07	3.05E-09	6.80E-09	<1.00E-08
RR	7.42E-11	9.19E-11	9.46E-11	1.77E-11	2.04E-11	<1.00E-07	4.68E-15	4.83E-15	<1.00E-08
RWCU	2.28E-09	5.19E-09	5.19E-09	2.91E-09	2.91E-09	<1.00E-07	2.91E-09	2.91E-09	<1.00E-08
SBLC	8.76E-12	9.22E-12	9.22E-12	4.66E-13	4.66E-13	<1.00E-07	4.66E-13	4.66E-13	<1.00E-08
TOTAL	2.36E-08	3.19E-08	4.01E-08	8.27E-09	1.65E-08	<1.00E-06	6.69E-09	1.20E-08	<1.00E-07

NOTES:

1. Includes scram discharge volume.

Table 8

Impact of RISI and No Inspections on CDF and LERF due to Pipe Ruptures for SSES Unit 2 Systems

System	System CDF Events/Reactor-Year			Δ CDF Events/Reactor-Year			Δ LERF Events/Reactor-Year		
	Section XI	RISI	No Inspection	RISI	No Inspection	Acceptance Criterion	RISI	No Inspection	Acceptance Criterion
CRD[1]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	<1.00E-07	0.00E+00	0.00E+00	<1.00E-08
CS	3.42E-10	7.29E-10	7.39E-10	3.87E-10	3.97E-10	<1.00E-07	3.82E-10	3.87E-10	<1.00E-08
FW	9.52E-09	8.64E-09	1.08E-08	-8.84E-10	1.31E-09	<1.00E-07	-6.40E-10	1.05E-09	<1.00E-08
HPCI	4.19E-11	4.34E-11	4.78E-11	1.56E-12	5.92E-12	<1.00E-07	1.09E-12	5.01E-12	<1.00E-08
MS	2.37E-09	2.63E-09	2.63E-09	2.59E-10	2.59E-10	<1.00E-07	2.18E-10	2.18E-10	<1.00E-08
RCIC	3.55E-11	3.55E-11	3.55E-11	5.34E-15	5.53E-15	<1.00E-07	-3.16E-14	5.53E-15	<1.00E-08
RHR	1.26E-09	1.56E-09	1.58E-09	2.92E-10	3.18E-10	<1.00E-07	2.54E-10	2.61E-10	<1.00E-08
RPV-E	1.64E-08	1.43E-08	2.00E-08	-2.06E-09	3.58E-09	<1.00E-07	-1.45E-09	1.98E-09	<1.00E-08
RR	7.32E-11	8.95E-11	9.19E-11	1.63E-11	1.87E-11	<1.00E-07	4.49E-15	4.62E-15	<1.00E-08
RWCU	2.28E-09	5.19E-09	5.19E-09	2.91E-09	2.91E-09	<1.00E-07	2.91E-09	2.91E-09	<1.00E-08
SBLC	5.78E-12	6.13E-12	6.13E-12	3.49E-13	3.49E-13	<1.00E-07	3.49E-13	3.49E-13	<1.00E-08
TOTAL	3.23E-08	3.33E-08	4.11E-08	9.20E-10	8.80E-09	<1.00E-06	1.67E-09	6.81E-09	<1.00E-07

NOTES:
1. Includes scram discharge volume.

RELIEF REQUEST NUMBER: 3RR-02
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COMPONENT IDENTIFICATION

Code Class:	2
Reference:	Table IWC-2500-1
Examination Category:	C-G
Item Number:	C6.10
Description:	Alternative Requirements to the Examination of Pressure Retaining Welds in Pumps
Component Number:	All RHR and CS Pressure Retaining Pump Casing Welds

CODE REQUIREMENT

Table IWC-2500-1 states that the pump casing welds require a surface examination in accordance with the examination requirements illustrated in Figure IWC-2500-8.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(g)(5)(iii), relief is requested on the basis that conformance with the specified Code requirement has been determined to be impractical.

Per Table IWC-2500-1, the multiple-component concept applies, and examinations are limited to either 100% of the welds of one of four RHR pumps and one of four CS pumps (per unit), or distributed among any of the pumps of that same group (per unit) with similar design, size, function, and service in the system. The examination may be performed from either the inside or outside surface of the component.

SSES Units 1 and 2 each have eight Class 2 pumps with pressure retaining pump casing welds - four (4) Core Spray (CS) pumps (Unit 1 1P206A, B, C, and D and Unit 2 2P206A, B, C, and D) and four (4) Residual Heat Removal (RHR) pumps (Unit 1 1P202A, B, C, and D and Unit 2 2P202A, B, C, and D). The primary function of these pumps is decay heat removal, suppression pool heat removal, and emergency core cooling.

Each of the RHR pumps has 17 pressure retaining pump casing welds; the CS pumps have 16 pressure retaining pump casing welds.

Three welds, 361-6-7, 361-2-6, and 361-7-8 (See Figure 3RR-02.1), are located within the pump casing and are not normally accessible without disassembly of the pump and removal of the pump motor.

RELIEF REQUEST NUMBER: 3RR-02
(Page 2 of 3)

BASIS FOR RELIEF (Continued)

The remaining six welds (per pump), 359-1-2, 359-2-L2, 359-2-2, 359-2-L1, 359-2-3, and 359-3-7 (See Figure 3RR-02.1), are located below floor elevation 645'-0" and are totally surrounded by concrete. The pump casing is flooded with water, thereby, completely limiting normal access to these components for examination.

Pump motor removal and/or disassembly of a pump to gain access to these components for surface examination is not practical and represents undue hardship with minimal safety return.

Finally, other required examinations/tests of the pumps will be performed to provide reasonable assurance of structural integrity. The pumps are also within the system pressure retaining boundaries of Examination Category C-H and will be periodically VT-2 visually examined during system pressure testing.

Relief is being requested from complete surface examination of 9 of 17 RHR pump casing welds (on one pump), and 9 of 16 CS pump casing welds (on one pump) per unit due to component inaccessibility for examination. All eight pumps (per unit) are equally limited.

PROPOSED ALTERNATE EXAMINATIONS

A surface examination will be performed to the extent practical, at which time the subject weld areas become accessible for examination due to pump disassembly for repair or maintenance.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-02
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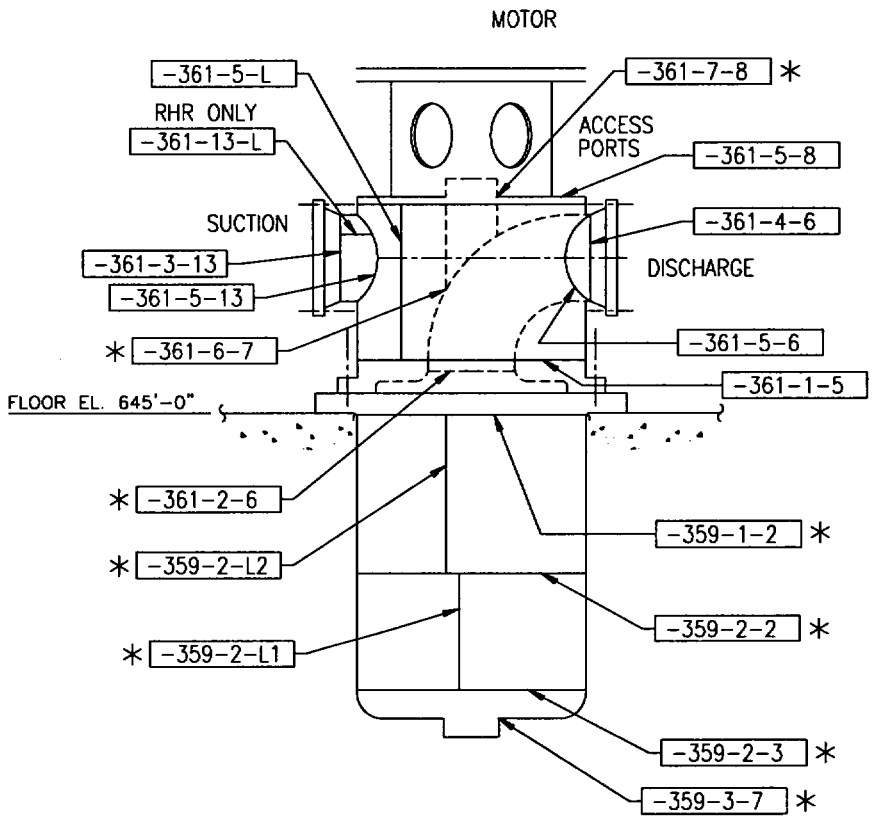
FIGURE 3RR-02.1

PUMP CASING WELDS
CORE SPRAY PUMPS (1P202A, B, C, D AND 2P202A, B, C, D)
AND
RESIDUAL HEAT REMOVAL PUMPS (1P202A, B, C, D AND 2P202A, B, C, D)



ELEVATION VIEW THRU FLOOR

RELIEF REQUEST NUMBER: 3RR-03
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	1, 2, and 3
References:	IWF-5200(a) and IWF-5300(a) IWF-5200(b) and IWF-5300(b) IWF-5200(c) and IWF-5300(c)
Examination Category:	N/A
Item Number:	N/A
Description:	ISI Snubbers Included in the TRM Snubber Visual Examination and Testing Program

CODE REQUIREMENTS

Paragraphs IWF-5200(a) and IWF-5300(a) require Preservice and Inservice examinations to be performed in accordance with ASME/ANSI OM, Part 4, using the VT-3 visual examination method described in IWA-2213.

Paragraphs IWF-5200(b) and IWF-5300(b) require Preservice and Inservice tests to be performed in accordance with ASME/ANSI OM, Part 4. Table IWA-1600-1 specifies use of the 1987 Edition, with OMa-1988 Revision of ASME/ANSI OM, Part 4.

Paragraphs IWF-5200(c) and IWF-5300(c) require integral and nonintegral attachments for snubbers, including lugs, bolting, pins, and clamps, shall be examined in accordance with the requirements of Subsection IWF.

The regulation in 10CFR50.55a(b)(3)(v) permits the use of Subsection ISTD, titled "Inservice Testing of Dynamic Restraints (Snubbers) in Light-water Reactor Power Plants," ASME OM Code, 1995 Edition up to and including the 1998 Edition through the 2000 Addenda, in lieu of the requirements for snubbers in Section XI, IWF-5200(a) and (b) and IWF-5300(a) and (b), by making appropriate changes to their technical specifications or licensee controlled documents. Preservice and inservice examinations shall be performed using the VT-3 visual examination method described in IWA-2213.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative would provide an acceptable level of quality and safety.

The current SSES TRM snubber program, Section 3.7.8, includes a comprehensive program for visual examination and functional testing requirements of safety related and non-safety related snubbers.

RELIEF REQUEST NUMBER: 3RR-03
(Page 2 of 3)

BASIS FOR RELIEF (Continued)

There are approximately 956 safety related and non-safety related snubbers at SSES Units 1 and 2. The overlap of the visual examination program required by ASME Section XI and the TRM snubber program for the ISI Class snubbers presents an unnecessary redundancy without a compensating increase in the level of quality and safety.

The TRM snubber visual examination program requires a sample size of 100% of all safety related and non-safety related snubbers and incorporates the alternate snubber visual examination delineated in NRC Generic Letter (GL) 90-09, "Alternate Requirements for Snubber Visual Inspection Intervals and Corrective Actions." As determined by the NRC, the alternate schedule of GL 90-09 maintains the same confidence level of quality and safety as the previous TRM schedule, which was very similar in content to that of OMa-1988, Part 4.

The GL 90-09 alternate schedule is based on the number of unacceptable snubbers found during the previous examination in proportion to the sizes of the various snubber populations or categories. The alternative examination interval is based on a refueling cycle of up to 24 months and may be as long as two fuel cycles, depending on the number of unacceptable snubbers found during the previous visual examination.

Based on the reason that the TRM snubber visual examination and testing program maintains the same confidence level of quality and safety as that of OMa-1988, Part 4, SSES requests that the TRM visual examination and testing program for snubbers be used in lieu of the OMa-1988, Part 4 visual examinations and testing program required by ASME Section XI, Subarticles IWF-5200(a) and IWF-5300(a), IWF-5200(b) and IWF-5300(b), and IWF-5200(c) and IWF-5300(c).

PROPOSED ALTERNATE EXAMINATION

SSES will perform visual examinations and testing of safety related and non-safety related snubbers in accordance with the snubber examination and testing program contained in the latest approved revision of the TRM in lieu of the OMa-1988, Part 4 visual examination and testing program required by ASME Section XI, Subarticles IWF-5200(a) and IWF-5300(a), IWF-5200(b) and IWF-5300(b).

As required by IWF-5200(c) and IWF-5300(c) the examination of snubber integral and nonintegral attachments, including lugs, bolting, pins, and clamps will also be performed in accordance with the TRM snubber program.

It should be noted that snubber welded attachments will be performed in accordance with the ASME Section XI Subsections IWB, IWC, and IWD welded attachment examination requirements.

RELIEF REQUEST NUMBER: 3RR-03
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PROPOSED ALTERNATE EXAMINATION (Continued)

Visual examiners, who are qualified to the applicable rules of ASME Section XI, Article IWA-2000, "Examination and Inspection," will perform the examinations and tests of safety related and non-safety related snubbers. Visual examination and testing results of safety related and non-safety related snubbers will be recorded and reported in accordance with the applicable rules of ASME Section XI, Article IWA-6000.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-04
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
Reference:	Table IWB-2500-1
Examination Category:	B-O
Item Number:	B14.10
Description:	Alternative Requirements to the Examination of Pressure Retaining Welds in Control Rod Housings
Component Number:	All Pressure Retaining Welds in Control Rod Housings

CODE REQUIREMENT

SSES Units 1 and 2 have 185 control rod drive housings per unit; each control rod drive housing is fabricated with two pressure retaining housing welds - the housing-to-flange weld and the housing tube A-to-housing tube B weld. These welds are subject to the examination requirements of Examination Category B-O.

Table IWB-2500-1, Examination Category B-O, Item Number B14.10, requires volumetric or surface examinations, per Figure IWB-2500-18, of the pressure retaining welds of 10% of the peripheral control rod drive housings. SSES Units 1 and 2 have 40 peripheral housings (per unit); therefore, the subject examinations are required of the pressure retaining welds of 4 (peripheral) housings during the third inspection interval. Relief is requested from examination of one weld (per housing) - the housing-to-flange weld - due to plant design access restrictions.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(g)(5)(iii), relief is requested on the basis that conformance with the specified Code requirement has been determined to be impractical.

Relief is requested from examination (surface or volumetric) of the CRD housing-to-flange welds due to numerous plant design obstructions. The CRD position indicator probes, CRD shoot out steel, and CRD flange shields severely limit access to the housing-to-flange welds. In addition, high radiation doses in this area make it impractical to attempt to perform limited examinations in the face of these obstacles. The remaining housing weld is without obstructions and can be completely examined.

The CRD housing welds are within the system pressure retaining boundary of Examination Category B-P. As such, reasonable assurance of the pressure retaining integrity of the flange-to-housing welds is gained through periodic VT-2 visual examination during Class 1 system pressure testing.

RELIEF REQUEST NUMBER: 3RR-04
(Page 2 of 2)

PROPOSED ALTERNATE EXAMINATIONS

As an alternate examination, SSES will perform a VT-2 visual examination of the CRD housing welds in conjunction with the required Class 1 System Pressure Tests.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-05
(Page 1 of 7)

***** NOTE *****

SSES Third Inspection Interval Relief Request 3RR-05 is simply an administrative placeholder. This relief request was previously submitted and approved under the Second Inspection Interval ISI Program Plan as Relief Request 2RR-22. The approval authorized under SER dated February 28, 2001 is for permanent relief and thus applies to the balance of plant life, including this Third Inspection Interval.

Formatting for Relief Request 2RR-22 varied from the standard ISI Program Plan format due to the fact that it also requested relief from the Augmented Vessel examination contained in 10CFR50a(g)(6)(ii)(A)(2).

The relief request is carried here and renumbered as 3RR-05 purely for administrative purposes. All ASME Code references were made in accordance with the 1989 Edition of ASME Section XI. No changes to the actual approved relief request have been made and no further or revised authorization is required.

SYSTEM/COMPONENT(S) FOR WHICH RELIEF IS REQUESTED

Category B-A, Item No, B1.11 Welds on Unit 1 and 2: Weld Ids AA, AB, AC, AD, AE

CODE REQUIREMENTS

10CFR50.55a(g)(6)(ii)(A)(2) requires volumetric examination of RPV shell welds to be performed completely, once, as an augmented examination requirement. These examinations are required to be performed using the 1989 Edition of the ASME Code Section XI. These examinations are required during the inspection interval when the regulation was approved or the first period of the next inspection interval. For purposes of the augmented examinations the regulation defined "essentially 100 percent" as more than 90 percent of the examination volume of each weld.

RELIEF REQUESTED

PPL requests approval of an alternative RPV examination for SSES Units 1 and 2. Approval of this alternative examination is requested in accordance with 10CFR50.55a(a)(3)(i) and 10CFR50.55a(g)(6)(ii)(A)(5) for permanently excluding volumetric examination of circumferential RPV welds. PPL also requests approval to implement the alternative RPV examination in lieu of the ISI requirements for circumferential welds in the ASME Code, Section XI 1989 Edition Table IWB-2500-1, Examination Category B-A, Item No. B1.11 volumetric examination of RPV circumferential welds. The Code of record for the second inspection interval is the ASME Code, Section XI, 1989 Edition.

RELIEF REQUEST NUMBER: 3RR-05
(Page 2 of 7)

BASIS FOR RELIEF

In Generic Letter 98-05, the NRC stated that the estimated failure frequency of the BWR RPV circumferential welds is well below the acceptable core damage frequency (CDF) and large early release frequency (LERF) criteria discussed in Regulatory Guide 1.174, "An Approach for using Probabilistic Risk Assessment in Risk Informed Decisions On Plan-Specific Changes to the Licensing Basis." Furthermore, the NRC indicated that the estimated frequency of RPV circumferential weld failure bounds the corresponding CDF and LERF that may result from a reactor pressure vessel weld failure. On this basis, the NRC concluded the proposal in the BWRVIP-05 report, as modified by two criteria, was acceptable and that BWR licensees may request permanent relief from the ISI requirements of 10CFR50.55a(g) for the volumetric examination of circumferential reactor welds by demonstrating the two criteria discussed below. The generic letter states that licensees still need to perform their required inspections of "essentially 100 percent" of all axial welds.

Generic Letter 98-05 Criterion 1

At the expiration of the license, the circumferential welds will continue to satisfy the limiting conditional failure probability for circumferential welds in the staff's July 28, 1998 safety evaluation (of GL 98-05 Permitted Action).

PPL Response

SSES Units 1 and 2 are defined as ASTM E-185-73, Case "A" plants, since the vessels have a predicted shift in the reference nil-ductility temperature (ΔRT_{NDT}) of less than 100°F and will be exposed to a neutron fluence of less than $5x10^{18}$ n/cm^2 over the design lifetime of the plant. The expected low RPV 1/4T 32 Effective Full Power Years (EFPY) beltline fluence ($<<5x10^{18}$ n/cm^2) results in a low predicted shift in the reference nil-ductility temperature RTNDT (<25°F at 32 EFPY).

RELIEF REQUEST NUMBER: 3RR-05
(Page 3 of 7)

BASIS FOR RELIEF (Continued)

The following table illustrates that the SSES Units 1 and 2 reactor pressure vessels have additional conservatism in comparison to Table 2.5-4 for the Limiting Plant-Specific Analyses (32 EFPY) of the NRC's evaluation of BWRVIP-05. The chemistry factor, ΔRT_{NDT}, $RT_{NDT(U)}$ and Mean RT_{NDT} are determined in accordance with the guidelines of Regulatory Guide 1.99, Rev. 2 and ASME Code Section III, NB2300, as applicable.

Parameter Description	SSES Units 1 and 2 Comparative Parameters at 32 EFPY for the Bounding Circumferential Weld Wire Heat/Lot 62463/E 204A27A*	NRC Limiting Plant Specific Analyses Parameters at 32 EFPY SER Table 2.6-4
Cu, wt%	0.06	0.10
Ni, wt%	0.89	0.99
CF	82	109.5
EOL ID Fluence, $x10^{19}$ n/cm^2	0.078	0.51
ΔRT_{NDT}, °F	24.9	109.5
$RT_{NDT(U)}$	-20	-65
Mean RT_{NDT}, °F	4.9	44.5

*Unit 2 data: Unit 1 data is enveloped by this data.

The chemistry factors for the SSES Units 1 and 2 limiting circumferential welds are lower than the NRC's Limiting Plant-Specific Analyses (32 EFPY) and the End of Life (EOL) fluence is significantly lower than the NRC's limit such that the resulting shift in reference temperature, ΔRT_{NDT}, is bounded by the NRC evaluation of BWRVIP-05 technical bases. Considering the expected shift in $RT_{NDT}(\Delta RT_{NDT})$ is small and the excellent SSES Units 1 and 2 plate and weld chemistry, embrittlement due to fluence effects have a negligible affect on the SSES Units 1 and 2 reactor pressure vessel weld failure probability, P (F/E), in the NRC's Limiting Plant-Specific Analyses (32EFPY).

Generic Letter 98-05 Criterion 2

Licensees have implemented operator training and established procedures that limit the frequency of cold over-pressure events to the amount specified in the staff's July 28, 1998 safety evaluation.

RELIEF REQUEST NUMBER: 3RR-05
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BASIS FOR RELIEF (Continued)

PPL Response

PPL has in place procedures which monitor and control reactor temperature and water inventory during all aspects of cold shutdown which would minimize the likelihood of a Low Temperature Over-Pressurization (LTOP) event from occurring. Additionally, these procedures are reinforced through operator training.

The System Leakage Test and the System Hydrostatic Test (as modified by ASME Code Case N-498-1), which have been used at SSES, have sufficient procedural guidance to prevent a cold overpressurization event. The System Leakage Test is performed at the conclusion of each refueling outage, while the System Hydrostatic Test is performed once each ten year Inspection Interval. Briefings for these tests generally detail the anticipated testing evolution with special emphasis on conservative decision making, plant safety awareness, the process in which the test would be aborted if plant systems responded in an adverse manner, and lessons learned from similar in-house or industry operating experiences. Specific attention is devoted to avoidance of rapid overpressurization by an inadvertent SCRAM at test pressure (in the manner of Clinton Power Station LER 89-016). Vessel temperature and pressure are required to be monitored throughout these tests to ensure compliance with the Technical Specification 3.4.10 pressure-temperature curve. The procedures for these tests prescribe the designation of a test director (on a shift basis) for the duration of the test who is a single point of accountability, responsible for the coordination of testing from initiation to closure and for maintaining shift management and line management cognizant of the status of the test. Additionally, the Shift Supervisor provides an oversight function during the test.

Additionally, to ensure a controlled, deliberate pressure increase, the rate of pressure increase is administratively limited throughout the performance of the test. If the pressurization rate exceeds this limit, direction is provided to remove the Control Rod Drive (CRD) pumps, which are used for pressurization, from service.

With regard to inadvertent system injection resulting in an LTOP condition, the high pressure make-up systems (High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) systems, as well as the normal feedwater supply (via the Reactor Feedwater Pumps) at SSES are all steam driven. During reactor cold shutdown conditions, no reactor steam is available for the operation of these systems. Therefore, it is not possible for these systems to contribute to an over-pressure event while the unit is in cold shutdown. Although auxiliary steam is used to test the associated turbines while the plant is shutdown, the pump is uncoupled from the turbine during the actual test which would prevent an LTOP condition.

RELIEF REQUEST NUMBER: 3RR-05
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BASIS FOR RELIEF (Continued)

Procedural control is also in place to respond to an unexpected or unexplained rise in reactor water level which could result from a spurious actuation of an injection system. Actions specified in this procedure include preventing condensate pump injection, securing ECCS system injection, tripping CRD pumps, terminating all other injection sources and lowering RPV level via the RWCU system.

In addition to procedural barriers, Licensed Operator Training is in place which further reduces the possibility of the occurrence of LTOP events. During Initial Licensed Operator Training the following topics are covered: Brittle fracture and vessel thermal stress; Technical Specification training, including Section 3.4.10 "RCS Pressure and Temperature (P/T) Limits," and Simulator Training of plant heatup and cooldown including performance of surveillance tests which ensure pressure-temperature curve compliance. In addition, operator training has been provided on the expectations for procedural compliance as provided in the operations standards manual.

During plant outages, the work control processes assure that the outage schedule and changes to the schedule receive a thorough shutdown risk assessment review to ensure defense-in-depth is maintained. Work activities are reviewed by Station Management and Operations Management to ensure safe operation and that plant mode can support the schedule work.

During outages, work is coordinated through the Outage Control Center and the Ops Work Control Center which provides an additional level of Operations oversight. In the Control Room, the Shift Supervisor is required, by procedure, to maintain cognizance of any activity that could potentially affect reactor level or decay heat removal during refueling outages. The Control Room Operators are required to provide positive control of reactor water level within the specified bands, and promptly report when operating outside the specified band, including restoration of actions being taken.

In addition to the above, ongoing review of industry operating plant experiences is conducted to ensure the PPL procedures consider the impact of actual events, including LTOP events. Appropriate adjustments to the procedures and associated training are then implemented, to preclude similar situations from occurring at SSES.

RELIEF REQUEST NUMBER: 3RR-05
(Page 6 of 7)

BASIS FOR RELIEF (Continued)

Summary

The BWRVIP-05 report provides the technical basis for eliminating inspection of BWR reactor pressure vessel circumferential shell welds. The BWRVIP-05 report concludes that the probability of failure of the BWR reactor pressure vessel circumferential shell welds is orders of magnitude lower than that of that axial shell welds. Based on an assessment of the materials in the circumferential weld in the beltline of the SSES Unit 2 reactor pressure vessel, the conditional probability of reactor pressure vessel failure should be less than or equal to that estimated in the NRC's analysis. Based on operator training and established procedures that have been implemented, the probability of cold over-pressure transients will limit the frequency of cold over-pressure events to the amounts specified in the NRC's June 30, 1998 safety evaluation.

REFERENCES

1. NRC Generic Letter 98-05, "Boiling Water Reactor Licensees Use of the BWRVIP-05 Report to Request Relief from Augmented Examination Requirements on Reactor Pressure Vessel Circumferential Shell Welds, " dated November 10, 1998.

2. EPRI TR 105697, BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05), September 1995.

3. NRC Letter from Gus C. Lainas, Acting Director, Division of Engineering, Office of Nuclear Reactor Regulation, to Carl Terry, BWRVIP chairman, Niagara Mohawk Company, July 28, 1998.

ALTERNATE EXAMINATIONS

PPL proposes to perform inspections of essentially 100 percent of the longitudinal seam welds in the RPV shell and essentially zero percent of the RPV circumferential seam welds, which will result in partial examination (i.e., approximately two to three percent) of the circumferential welds at their points of intersection with the longitudinal welds. These inspections are being proposed as an alternative to the augmented examinations specified in 10CFR50.55a(g)(6)(ii)(A)(2) for circumferential welds, as well as an alternative to the ISI requirements for circumferential welds in the ASME Code, Section XI 1989 Edition.

RELIEF REQUEST NUMBER: 3RR-05
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IMPLEMENTATION SCHEDULE

PPL Susquehanna, LLC requests that this relief request be approved by January 15, 2001, in order to support the Unit 2 10th Refuel Outage that is scheduled to begin in March 2001. This relief will remain in effect for the duration of the Second 10 year interval of the ISI Program for Susquehanna SES Units 1 and 2 (June 1, 2004).

Note: Relief Request 3RR-05 is provided for information purposes. Permanent relief was requested by SSES from the examination requirements of 10CFR50.55a for RPV circumferential shell welds since the proposed alternative provides an acceptable level of quality and safety. Permanent relief was authorized by the NRC in a SER dated February 28, 2001.

RELIEF REQUEST NUMBER: 3RR-06
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	2 and 3
Reference:	IWC-3122.3
	IWC-3132.3
	IWC-3600
	IWD-3000
Examination Category:	N/A
Item Number:	N/A
Description:	Evaluation Criteria for Temporary Acceptance of Flaws
Component Number:	Moderate Energy Class 2 and 3 Piping

CODE REQUIREMENTS

IWC-3122.3 states that a component whose volumetric or surface examination detects flaws may be acceptable for continued service without a repair/replacement activity if an analytical evaluation is performed in accordance with IWC-3600. Similar requirements for visual examinations are contained in IWC-3132.3.

In the 1998 Edition through the 2000 Addenda of ASME Section XI, IWC-3600, Analytical Evaluation of Flaws, and IWD-3000, Acceptance Standards, are in the course of preparation and state that the requirements of IWB may be used.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternatives would provide an acceptable level of quality and safety.

ASME Section XI Code Case N-513 is conditionally approved for use in Revision 13 of Regulatory Guide 1.147; however, this Case is not applicable to the 2000 Addenda which is SSES's Code of record for the Third Inspection Interval. Code Case N-513-1 has since been issued in Supplement 11 of the 1998 Edition and is currently applicable through the 2001 Edition. This revision of the Code Case is not yet approved for use by the NRC.

RELIEF REQUEST NUMBER: 3RR-06
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BASIS FOR RELIEF (Continued)

Code Case N-513-1 revises the base case to expand the temporary acceptance methodology from Class 3 moderate energy piping to Class 2 and 3 moderate energy piping. Both cases provide requirements which may be followed for temporary acceptance of flaws in ASME Section III, ANSI B31.1, and ANSI B31.7 piping designated as Class 2 or 3. This acceptance is limited to moderate energy piping defined as piping whose maximum operating temperature does not exceed 200°F and whose maximum operating pressure does not exceed 275 psig. The provisions of the case demonstrate the integrity of the item containing the flaw for a limited period of time until appropriate repair/replacement or additional examination activities can be performed.

PROPOSED ALTERNATE PROVISIONS

When using analytical evaluation as the method of acceptance for flaws in moderate energy Class 2 or 3 piping, SSES will follow the provisions of Code Case N-513-1 without performing a repair/replacement activity. This acceptance will be temporary and will remain in affect for a limited time, not exceeding the time to the next scheduled outage.

SSES may implement this method or one of the other methods contained in ASME Section XI to accept detected flaws; however, in no case will the temporary evaluation process be applied to

(a) components other than pipe or tube,
(b) leakage through a gasket,
(c) threaded connections with nonstructural seal welds for leakage prevention, or
(d) degraded socket welds.

When applying the methods of Code Case N-513-1, the specific safety factors contained in Paragraph 4.0 of the Case will be satisfied. These conditions are consistent with those contained in 10CFR50.55a(b)(2)(xiii) regarding the use of Code Case N-513.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-07
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	2
Reference:	Table IWC-2500-1
Examination Category:	C-H
Description:	Exemption From Pressure Testing Reactor Pressure Vessel Head Flange Seal Leak Detection System
Component Number:	Flange Seal Leak Detection Line Pressure Retaining Components

CODE REQUIREMENTS

Table IWC-2500-1 requires a VT-2 visual examination to be performed during a system leakage test.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternatives provide an acceptable level of quality and safety.

The Reactor Pressure Vessel Head Flange Leak Detection Line is separated from the reactor pressure boundary by one passive membrane, a silver plated O-ring located on the vessel flange. A second O-ring is located on the opposite side of the tap in the vessel flange (See Figure 3RR-07.1). This line is required during plant operation in order to indicate failure of the inner flange seal O-ring. Failure of the inner O-ring is the only condition under which this line is pressurized.

The configuration of this system precludes manual testing while the vessel head is removed because the odd configuration of the vessel tap (See Figure 3RR-07.1), combined with the small size of the tap and the high test pressure requirement (1035 psig minimum), prevents the tap in the flange from being temporarily plugged. The opening in the flange is only 3/16 of an inch in diameter and is smooth walled making a high pressure temporary seal very difficult. Failure of this seal could possibly cause ejection of the device used for plugging into the vessel.

A pneumatic test performed with the head installed is precluded due to the configuration of the top head. The top head of the vessel contains two grooves that hold the O-rings. The O-rings are held in place by a series of retainer clips. The retainer clips are contained in a recessed cavity in the top head (See Figure 3RR-07.1). If a pressure test was performed from the leak-off line side with the head on, the inner O-ring would be pressurized in a direction opposite to what it would see in normal operation. This test pressure would result in a net inward force on the O-ring that would tend to push it into the recessed cavity that houses the retainer clips. The O-ring material is a thin silver plating and could very likely be damaged by this deformation into the recessed areas on the top head.

RELIEF REQUEST NUMBER: 3RR-07
(Page 2 of 3)

BASIS FOR RELIEF (Continued)

In addition to the problems associated with the O-ring design that preclude this testing it is also questionable whether a pneumatic test is appropriate for this line. Although the line will initially contain steam if the inner O-ring leaks, the system actually detects leakage rate by measuring the level of condensate in a collection chamber. This would make the system medium water at the level switch. Finally, the use of a pneumatic test performed at a minimum of 1000 psig would represent an unnecessary risk in safety for the inspectors and test engineers in the unlikely event of a test failure, due to the large amount of stored energy contained in air pressurized to 1000 psig.

System leakage testing of this line is precluded because the line will only be pressurized in the event of a failure of the inner O-ring. It is extremely impractical to purposely fail the inner O-ring in order to perform a test.

Based on the above, SSES requests relief from the ASME Section XI requirements for system leakage testing of the Reactor Pressure Vessel Head Flange Seal Leak Detection System.

PROPOSED ALTERNATE EXAMINATION

A VT-2 visual examination will be performed on the line during vessel flood-up during a refueling outage. The static head developed due to the water above the vessel flange during flood-up will allow for the detection of any gross indications in the line. This examination will be performed with the frequency specified by Table IWC-2500-1 for a System Leakage Test (once each inspection period).

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-07
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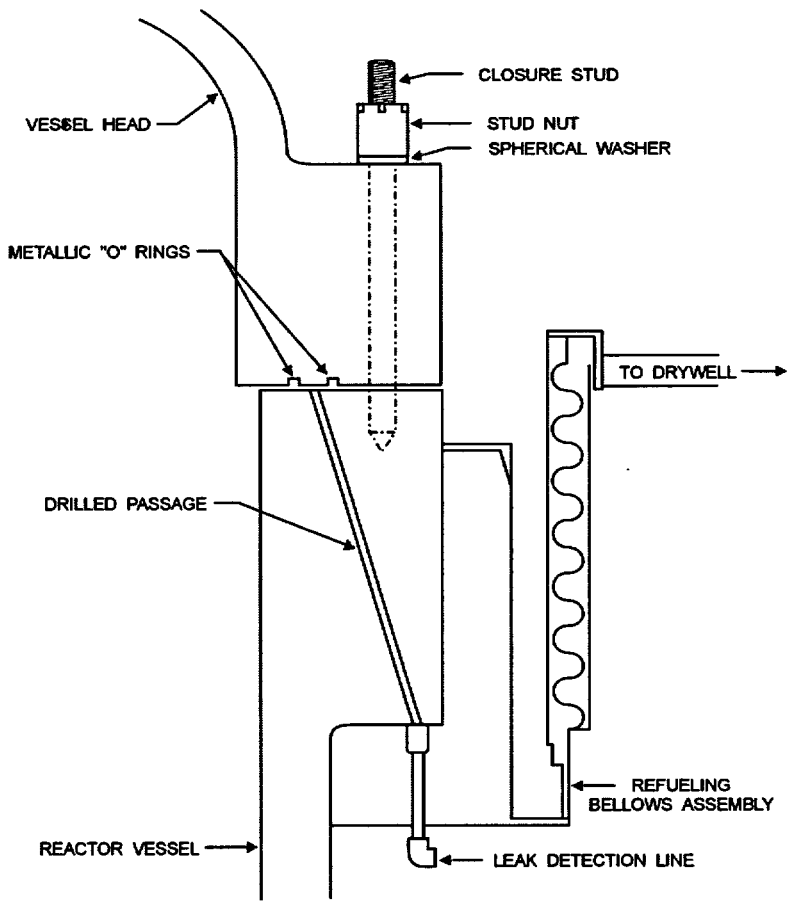
FIGURE 3RR-07.1

FLANGE SEAL LEAK DETECTION LINE DETAIL



RELIEF REQUEST NUMBER: 3RR-08
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	2
Reference:	Table IWC-2500-1
Examination Category:	C-H
Item Number:	C7.10, C7.30, C7.50, C7.70
Description:	Continuous Pressure Monitoring of the Control Rod Drive (CRD) Accumulators
Component Number:	CRD Accumulators and Associated Piping

CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED

Table IWC-2500-1 requires a VT-2 visual examination to be performed during a system leakage test.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternatives provide an acceptable level of quality and safety.

As required by the SSES Technical Specifications, the CRD Accumulator Pressure must be greater than or equal to 940 psig. Once a week, the accumulator pressure is verified for each accumulator in accordance with SSES Technical Specifications. Additionally, the accumulator pressure is continuously monitored by system instrumentation. Since the accumulators are isolated from the source of makeup nitrogen, continuous monitoring of the CRD Accumulators serves as a pressure decay type test. Should accumulator pressure fall below approximately 980 psig, an alarm is received in the control room. The pressure for the accumulator is recorded and the accumulator is recharged and checked for leaks in accordance with SSES procedures. Should a leak be detected, corrective actions are taken to repair the leak in accordance with SSES procedures.

Since monitoring the nitrogen side of the accumulators is continuous, any leakage from the accumulator would be detected by normal system instrumentation. An additional VT-2 visual examination performed once per inspection period would not provide an increase in safety, system reliability, or structural integrity. In addition, performance of a VT-2 visual examination would require applying a leak detection solution to 185 accumulators per Unit resulting in additional radiation exposure without any added benefit in safety. This inspection would not be consistent with ALARA practices.

RELIEF REQUEST NUMBER: 3RR-08
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BASIS FOR RELIEF (Continued)

Relief is requested from the VT-2 visual examination requirements specified in Table IWC-2500-1 for the nitrogen side of the CRD Accumulators on the basis that continuous monitoring of the accumulator pressure and a Technical Specification required walkdown of each accumulator exceed the ASME Section XI requirement for a VT-2 visual examination.

PROPOSED ALTERNATE EXAMINATIONS

As an alternate to the VT-2 visual examination requirements of Table IWC-2500-1, SSES will perform continuous pressure decay monitoring and a weekly Technical Specification required walkdown for the nitrogen side of the CRD accumulators including the attached piping.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-09
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	1, 2, and 3
Reference:	IWA-5250(a)(2)
Examination Category:	N/A
Item Number:	N/A
Description:	Alternative Rules for Corrective Measures if Leakage Occurs at Bolted Connections
Component Number:	All Pressure Retaining Bolted Connections

CODE REQUIREMENT FOR WHICH RELIEF IS REQUESTED

IWA-5250(a)(2) states that if leakage occurs at a bolted connection, one of the bolts shall be removed, VT-3 examined, and evaluated in accordance with IWA-3100. The bolt selected shall be the one closest to the source of leakage. When the removed bolt has evidence of degradation, all remaining bolting in the connection shall be removed, VT-3 examined, and evaluated in accordance with IWA-3100.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative would provide an acceptable level of quality and safety.

Removal of pressure retaining bolting at mechanical connections for VT-3 visual examination and subsequent evaluation in locations where leakage has been identified is not always the most prudent course of action to determine condition of the bolting and/or the root cause of the leak. The requirement to remove, examine and evaluate bolting in this situation does not allow consideration of other factors which may indicate the condition of mechanical joint bolting. Other factors which should be considered in an evaluation of bolting condition when leakage has been identified at a mechanical joint include, but should not be limited to:

- Bolting materials
- Corrosiveness of process fluid
- Service age of joint bolting materials
- Leakage location
- Leakage history at connection
- Visual evidence of corrosion at connection (connection assembled)
- Plant / Industry studies of similar bolting materials in a similar environment
- Condition and leakage history of adjacent components

RELIEF REQUEST NUMBER: 3RR-09
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BASIS FOR RELIEF (Continued)

An example at SSES is the complete replacement of bolting materials (e.g., studs, bolts, nuts, washers, etc.) at mechanical joints during plant outages. In some cases, when the associated system process piping is pressurized during plant start-up, leakage is identified at these joints. The cause of this leakage is often due to thermal expansion of the piping and bolting materials at the joint and subsequent process fluid seepage at the joint gasket. In most of these cases, proper re-torquing of the joint bolting stops the leakage. Removal of any of the joint bolting to evaluate for corrosion would be unwarranted in this situation. ASME Section XI Code Interpretation XI-1-92-01 has recognized that this situation exists, and has clarified that the requirements of IWA-5250(a)(2) do not apply.

PROPOSED ALTERNATE PROVISIONS

SSES proposes the following alternative, consistent with the methodology of Code Case N-566-2, to the requirements of IWA-5250(a)(2), which will provide an equivalent level of quality and safety when evaluating leakage and bolting material condition at Class 1, 2, and 3 bolted connections.

As an alternative to the to the requirements of Subparagraph IWA-5250(a)(2), one of the following requirements will be met for leakage at bolted connections:

(a) The leakage will be stopped, and the bolting and component material will be reviewed for joint integrity as described in (c) below.

(b) If the leakage is not stopped, the SSES will evaluate the structural integrity and consequences of continuing operation, and the effect on the system operability of continued leakage. This engineering evaluation will include the considerations listed in (c) below.

(c) The evaluation of (a) and (b) above is to determine the susceptibility of the bolting to corrosion and failure. This evaluation will include the following:

(1) the number and service age of the bolts;
(2) bolt and component material;
(3) corrosiveness of process fluid;
(4) leak location and system function;
(5) leakage history at the connection or other system components;
(6) visual evidence of corrosion at the assembled connection.

RELIEF REQUEST NUMBER: 3RR-09
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PROPOSED ALTERNATE PROVISIONS (Continued)

If any of the above parameters indicates a need for further examination, the corrective action will be taken in accordance with IWA-5250(a)(2).

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-10
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	MC and CC
Reference:	Subsection IWE, "Requirements for Class MC and Metallic Liners of Class CC Components of Light-Water Cooled Power Plants" Subsection IWL, "Requirements for Class CC Concrete Components of Light-Water Cooled Power Plants"
Examination Category:	All
Item Number:	All
Description:	Synchronization of Ten-Year Interval for Class MC and CC Pressure Retaining Components and Their Integral Attachments to Coincide With the Ten-Year Interval for Class 1, 2 and 3 Components and Their Supports
Component Number:	All

CODE REQUIREMENT

Paragraph IWA-2432 requires that each inspection interval consist of ten-year duration; except as modified by IWA-2430(d) which permits the inspection interval to be extended or decreased by as much as one year, provided that successive intervals are not altered by more than one year from the original pattern of intervals.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested from the ten-year interval requirement contained within IWA-2432 for the CISI Program on the basis that the proposed alternative would provide an acceptable level of quality and safety.

Specifically, relief is being sought to reduce the duration of the First CISI Interval, which will permit subsequent CISI Interval dates to be synchronized with future ISI Intervals for the Class 1, 2, and 3 components.

CISI Programs were initially required by regulation (10CFR50.55a) as amended within a Final Rule (61FR41303) issued on August 8, 1996. Accordingly, the SSES CISI Program was prepared and has been implemented to the 1992 Edition through the 1992 Addenda of Subsections IWE and IWL of ASME Section XI, "Rules for Inservice Inspection of Nuclear Plant Components," Division 1 as modified by the regulation at that time. Several relief requests were applied for and approved in order to implement those requirements.

RELIEF REQUEST NUMBER: 3RR-10
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BASIS FOR RELIEF (Continued)

All examinations and tests required by the CISI Program have been implemented in accordance with the established schedule. For the IWE portion of the program, all the examinations scheduled for the first and second inspection periods have been completed. Additionally, the first five-year examination has been completed for the IWL portion of the program. All of these examinations and tests performed to date have satisfied the acceptance standards contained within Articles IWE-3000 and IWL-3000, without exception. Currently, there are no containment surfaces or components requiring designation as augmented examination areas. The VT-3 visual examinations currently scheduled for the end of interval are discussed later in this basis for relief.

Reducing the duration of the First CISI Interval will permit commencement of the Second CISI Interval to coincide with the start of the Third ISI Interval for Class 1, 2, and 3 components. This will result in both the ISI and CISI Programs being able to use the same Code Edition and Addenda for the successive intervals.

Currently, the latest edition and addenda of the code incorporated by reference in 10CFR50.55a(b)(2) of the regulation is the 1998 Edition through the 2000 Addenda. This Code version is being used, as required by 10CFR50.55a(g)(4)(ii), for development of the SSES ISI Program update for the Third Inspection Interval of ISI Class 1, 2, and 3 components and their component supports, subject to the limitations and modifications within the regulation.

In accordance with the last sentence of 10CFR50.55a(b)(2)(vi) and 10CFR50.55a(g)(4)(ii), the 1998 Edition through the 2000 Addenda of Section XI will also be used for development and implementation of the Second CISI Interval, subject to the limitations and modifications within the 10CFR50.55a(b)(2) of the regulation.

The requirements within the first sentence of paragraph 10CFR50.55a(b)(2)(vi) which only permits licensees to use either the 1992 Edition through the 1992 Addenda or the 1995 Edition through the 1996 Addenda of Subsection IWE and Subsection IWL as modified and supplemented by the requirements in paragraphs (b)(2)(viii) and (b)(2)(ix) of the regulation when implementing the initial 120-month inspection interval for the CISI requirements of the regulation are fully satisfied by approval of this proposed alternative to reduce the duration of the First CISI Interval.

RELIEF REQUEST NUMBER: 3RR-10
(Page 3 of 3)

BASIS FOR RELIEF (Continued)

The supplementary information contained within Section 2.2 of the Final Rule (67FR60520) dated September 26, 2002 contains statements supporting this proposed alternative. Specifically, the information pointed out that Section 50.55a(g)(4)(ii) does not prohibit licensees from updating to a later edition and addenda of the ASME Code midway through a ten-year IWE or five-year IWL examination interval. Additionally, the information advised that Licensees wishing to synchronize their 120-month intervals may submit a request in accordance with Section 50.55a(a)(3) to obtain authorization to extend or reduce 120-month intervals.

The current CISI Program requires performance of several VT-3 visual examinations in accordance with Table IWE-2500-1, Examination Category E-A, Items E1.12 and E1.20 at the end of the first inspection interval. Accordingly, these examinations have not yet been performed. Table IWE-2500-1, Examination Category E-A, Items E1.12 and E1.20 of the 1998 Edition through the 2000 Addenda of Section XI do not limit performance of these examinations to the end of interval. Therefore, PPL has scheduled performance of these examinations for the first inspection period in the Second CISI Interval. Scheduling these examinations for this inspection period will retain the originally scheduled point in time; thus meeting the intent for performance of these examinations.

In conclusion, it is PPL's belief that granting the proposed alternative as described herein provides an acceptable level of quality and safety, and does not adversely impact the health and safety of the public.

PROPOSED ALTERNATIVE

As an alternative to the full ten-year interval duration requirement for the First CISI Interval, SSES proposes to reduce the length of the First CISI Interval by approximately three years. This will permit the subsequent CISI Interval to coincide with the dates for the third and subsequent inspection intervals for the ISI Program for Class 1, 2, and 3 components. Therefore, the start date of the Third Interval for the ISI Program and the Second Interval for the CISI Program are effective on June 1, 2004 for SSES Units 1 and 2.

APPLICABLE TIME PERIOD

Relief is requested for the remainder of the First CISI Interval. This relief will affect the subsequent CISI Intervals to synchronize with future ISI Program Intervals for the current and future remaining licensed plant life for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-11
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	MC
Reference:	IWE-5240
Examination Category:	N/A
Item Number:	N/A
Description:	Alternative Requirements for IWE-5240 Visual Examination
Component Number:	All

CODE REQUIREMENT

Subsubarticle IWE-5240 requires performance of a visual examination using the Detailed Visual examination method following repair/replacement activities.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternatives provide an acceptable level of quality and safety.

The requirement to perform a Detailed Visual examination following a repair/replacement activity essentially conflicts with the Regulation for Performance Based Local Leakage Rate Testing as found within Option B of Appendix J to 10CFR50, and the associated documents NEI 94-01 and Regulatory Guide 1.163 for specific conditions where the pressure test is either deferred or not required.

In order to reduce unnecessary burden for performance of Detailed Visual examinations when a pressure test is performed following a repair/replacement activity, this case permits the performance of a General Visual examination of the affected pressure boundary either during or following the pressure test to ensure overall integrity of the repaired/replaced component within the containment.

The performance of a Detailed Visual examination will still be performed for those repair/replacement activities affecting the containment pressure boundary where a pressure test is deferred. When the deferred pressure test is conducted, an additional General Visual examination shall be performed of the affected pressure boundary either during or following that deferred pressure test to ensure overall integrity of the repaired/replaced component within the containment.

Therefore, based on the alternative requirements of Code Case N-649, there is reasonable assurance that structural integrity will be assured, and an acceptable level of quality and safety will be maintained during the third ten-year inspection interval.

RELIEF REQUEST NUMBER: 3RR-11
(Page 2 of 2)

PROPOSED ALTERNATE EXAMINATIONS

PPL requests use of the alternative examination requirements of Code Case N-649 titled "Alternative Requirements for IWE-5240 Visual Examination."

APPLICABLE TIME PERIOD

Relief is requested for the second ten-year inspection interval of the Containment Inservice Inspection Program for SSES Units 1 and 2.

RELIEF REQUEST NUMBER: 3RR-11

(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	MC
Reference:	IWE-5240
Examination Category:	N/A
Item Number:	N/A
Description:	Alternative Requirements for IWE-5240 Visual Examination
Component Number:	All

CODE REQUIREMENT

Subsubarticle IWE-5240 requires performance of a visual examination using the Detailed Visual examination method following repair/replacement activities.

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested on the basis that the proposed alternatives provide an acceptable level of quality and safety.

The requirement to perform a Detailed Visual examination following a repair/replacement activity essentially conflicts with the Regulation for Performance Based Local Leakage Rate Testing as found within Option B of Appendix J to 10CFR50, and the associated documents NEI 94-01 and Regulatory Guide 1.163 for specific conditions where the pressure test is either deferred or not required.

In order to reduce unnecessary burden for performance of Detailed Visual examinations when a pressure test is performed following a repair/replacement activity, this case permits the performance of a General Visual examination of the affected pressure boundary either during or following the pressure test to ensure overall integrity of the repaired/replaced component within the containment.

The performance of a Detailed Visual examination will still be performed for those repair/replacement activities affecting the containment pressure boundary where a pressure test is deferred. When the deferred pressure test is conducted, an additional General Visual examination shall be performed of the affected pressure boundary either during or following that deferred pressure test to ensure overall integrity of the repaired/replaced component within the containment.

Therefore, based on the alternative requirements of Code Case N-649, there is reasonable assurance that structural integrity will be assured, and an acceptable level of quality and safety will be maintained during the third ten-year inspection interval.

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PROPOSED ALTERNATE EXAMINATIONS

PPL requests use of the alternative examination requirements of Code Case N-649 titled "Alternative Requirements for IWE-5240 Visual Examination."

APPLICABLE TIME PERIOD

Relief is requested for the second ten-year inspection interval of the Containment Inservice Inspection Program for SSES Units 1 and 2.

9.0 REFERENCES

The references used to develop this Inservice Inspection Program Plan include:

1) Code of Federal Regulations, Title 10, Part 50, Paragraph 50.55a, "Codes and Standards" including all published changes through September 26, 2002

2) Code of Federal Regulations, Title 10, Part 50, Paragraph 2, "Definitions," the definition of "Reactor Coolant Pressure Boundary"

3) Code Of Federal Regulations, Title 10, Part 50, Appendix J, Primary Reactor Containment Testing for Water Cooled Power Reactors

4) ASME Boiler and Pressure Vessel Code, Section XI, Division 1, "Inservice Inspection of Nuclear Power Plant Components," the 1989 Edition with No Addenda

5) ASME Boiler and Pressure Vessel Code Section XI, Division 1, Subsections IWE and IWL, 1992 Edition with the 1992 Addenda

6) ASME Boiler and Pressure Vessel Code, Section XI, Division 1, "Inservice Inspection of Nuclear Power Plant Components," the 1998 Edition with the 2000 Addenda

7) USAS B31.1.0-1967, "Power Piping"

8) SECY-96-080, Issuance of Final Amendment To 10CFR50.55a To Incorporate By Reference The ASME Boiler And Pressure Vessel Code (ASME Code), Section XI, Division 1, Subsection IWE and IWL

9) Regulatory Guide 1.26, Revision 3, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive Waste- Containing Components of Nuclear Power Plants"

10) Regulatory Guide 1.147, Revision 13 "Inservice Inspection Code Case Acceptability, ASME Section XI Division 1"

11) NRC Final SER related to the "BWR Owner's Group Alternate Boiling Water Reactor (BWR) Feedwater Nozzle Inspection (TAC No. MA6787)", dated March 10, 2000

12) Boiling Water Reactor Owners' Group (BWROG) Report GE-NE-523-A71-0594, Revision 1, "Alternate BWR Feedwater Nozzle Inspection Requirements," dated August 1999

13) BWROG - Safety Evaluation of Proposed Alternative to BWR Feedwater Nozzle Inspections (TAC M94090), dated June 5, 1998

14) BWR Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules (BWRVIP-75), EPRI Report TR-113932, October, 1999

15) NRC Final SER related to the "BWR Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules (BWRVIP-75), EPRI Report TR-113932, October, 1999 (TAC NO. MA5012)," dated May 14, 2002

16) NRC NUREG-0313, Revision 2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping"

17) Generic Letter 88-01, Revision 2, dated January 25, 1988, "NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping"

18) Generic Letter 88-01, Supplement 1, dated February 4, 1992, "NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping"

19) Generic Letter 90-09, "Alternate Requirements for Snubber Visual Inspection Intervals and Corrective Actions"

20) Generic Letter 98-05, "Boiling Water Reactor Licensees Use of the BWRVIP-05 Report to Request Relief From Augmented Examination Requirements on Reactor Pressure Vessel Circumferential Shell Welds", dated November 10, 1998

21) NRC Final SER related to the "BWR Reactor Vessel Shell Weld Inspection Recommendations (BWRVIP-05), EPRI Report EPRI Report TR-105697, September, 1995", dated July 28, 1998

22) BWR Reactor Vessel Shell Weld Inspection Recommendations (BWRVIP-05), EPRI Report TR-105697, September, 1995

23) BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41), EPRI Report TR-108728, October, 1997

24) NRC NUREG/CR-3052, Closeout of IE Bulletin 80-07: BWR Jet Pump Assembly Failure, dated November 1984.

25) NRC NUREG-0737, dated November 1980, "TMI Action Plan Requirements"

26) NRC Mechanical Engineering Branch (MEB) Technical Position MEB 3-1, "High Energy Fluid Systems, Protection Against Postulated Piping Failures in Fluid Systems Outside Containment," dated November 1975

27) Susquehanna Steam Electric Station Units 1 and 2, Final Safety Analysis Report (FSAR)

28) Susquehanna Steam Electric Station Units 1 and 2, Technical Specification (TS)

29) Susquehanna Steam Electric Station Units 1 and 2 Technical Requirements Manual (TRM)

30) EPRI Containment Inspection Program Guide (TR-10698-R1)

31) EPRI Topical Report TR-112657, Rev. B-A, Final Report, "Revised Risk-Informed Inservice Inspection Evaluation Procedure," July 1999

32) NRC Final SER related to EPRI Topical Report TR-112657, Rev. B, Final Report, "Revised Risk-Informed Inservice Inspection Evaluation Procedure, July 1999," dated October 28, 1999

33) PPL Risk-Informed Inservice Inspection Evaluation (Final Report) for SSES Units 1 and 2

34) Susquehanna Steam Electric Station Units 1 and 2 ISI Classification Basis Document, Third Ten-Year Inspection Interval

35) SSES Units 1 and 2 ISI Selection Document, Third Ten-Year Inspection Interval

36) General Electric Boiling Water Reactor System Department, Document No. 22A2750, Revision 1

37) PPL ISI Class 1 Piping Size Exemption for Water and Steam (Calculation EC-PIPE-0011, Revision 0)

38) NDAP-QA-0480, ASME Section XI System and Component Pressure Testing

39) NEPM-QA-0595, Snubber Program