



10 CFR 50.55a

LR-N07-0284
December 12, 2007

US. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Hope Creek Generating Station
Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: Submittal of Relief Requests Associated with the Third Inservice
Inspection (ISI) Interval

In accordance with 10 CFR 50.55a, "Codes and standards," paragraphs (a)(3)(i) and (g)(5)(iii), PSEG Nuclear LLC (PSEG), hereby requests NRC approval of the attached requests associated with the third 10-year inservice inspection (ISI) interval for the Hope Creek Generating Station (HCGS). The third interval of the HCGS ISI program complies with the 2001 Edition through 2003 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code. The third ISI interval will begin on December 13, 2007, and will conclude December 12, 2017.

PSEG requests approval of the requests by December 17, 2008. Please note that all the attached relief requests were previously approved as part of the second ISI interval for HCGS, except for HC-I3R-03.

There are no regulatory commitments contained within this letter.

If you have any questions or require additional information, please contact Paul Duke at 856-339-1466.

Respectfully,

A handwritten signature in black ink, appearing to read "Jeffrie Keenan", written over a printed name and title.

Jeffrie Keenan
Manager - Licensing

A047
NRR

LR-N07-0284
December 12, 2007
Page 2

Attachment Relief Requests Associated with the Third Ten-Year Interval for Hope
Creek Generating Station

cc: S. Collins, Regional Administrator – NRC Region I
R. Ennis, Project Manager - Salem, USNRC
NRC Senior Resident Inspector - Hope Creek
P. Mulligan, Manager IV, NJBNE

Relief Requests Associated with the Third Ten-Year Interval for
Hope Creek Generating Station

HC-I3R-01

HC-I3R-02

HC-I3R-03

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-01
Revision 0
(Page 1 of 6)

Request for Relief for Alternate Risk-Informed Selection and Examination Criteria for Examination Category B-F, B-J, and C-F-2 Pressure Retaining Piping Welds In Accordance with 10 CFR 50.55a(a)(3)(i)

1.0 ASME CODE COMPONENTS AFFECTED:

Code Class:	1 and 2
Examination Category:	B-F, B-J, and C-F-2
Item Number:	B5.10, B9.11, B9.21, B9.31, B9.32, B9.40, C5.51, and C5.81
Description:	Alternate Risk-Informed Selection and Examination Criteria for Examination Category B-F, B-J, and C-F-2 Pressure Retaining Piping Welds
Component Number:	Pressure Retaining Piping

2.0 APPLICABLE CODE EDITION AND ADDENDA:

The Inservice Inspection program is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, 2001 Edition through the 2003 Addenda.

3.0 APPLICABLE CODE REQUIREMENT:

Table IWB-2500-1, Examination Category B-F, requires volumetric and surface examinations on all welds for Item Number B5.10.

Table IWB-2500-1, Examination Category B-J, requires volumetric and surface examinations on a sample of welds for Item Numbers B9.11 and B9.31, and surface examinations on a sample of welds for Item Numbers B9.21, 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.
-

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-01

Revision 0

(Page 2 of 6)

- b. cumulative usage factor U of 0.4.
- 3. All dissimilar metal welds not covered under Examination Category B-F.
- 4. Additional piping welds so that the total number of circumferential butt welds (or branch connection or socket welds) selected for examination equals 25% of the circumferential butt welds (or branch connection or socket welds) in the reactor coolant piping system. This total does not include welds exempted by IWB-1220.

Table IWC-2500-1, Examination Category C-F-2 requires volumetric and surface examinations on a sample of welds for Item Number C5.51, and surface examinations on a sample of welds for Item Number 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 carbon and low alloy steel welds (Examination 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 Category 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 carbon and low alloy welds (Examination Category C-F-2) in each system;
 - b. within a system, the examinations shall be distributed among terminal ends and structural discontinuities prorated, to the degree practicable, on the number of nonexempt terminal ends and structural discontinuities in the system; and
 - c. within each system, examinations shall be distributed between line sizes prorated to the degree practicable.

4.0 REASON FOR REQUEST:

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative utilizing Reference 1 along with two enhancements from Reference 4 will provide an acceptable level of quality and safety.

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

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-01

Revision 0
(Page 3 of 6)

"The staff concludes that the proposed RISI 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 10 CFR 50.55a for the proposed alternative to the piping ISI requirements with regard to the number of locations, locations of inspections, and methods of inspection."

The initial Hope Creek Generating Station RISI Program was submitted for implementation during the Third Period of the Second Interval. This initial RISI program was developed in accordance with EPRI TR-112657, Revision B-A, as supplemented by Code Case N-578-1. The program was approved for use by the NRC via a Safety Evaluation as transmitted to PSEG Nuclear, LLC on December 8, 2004 (Reference 5).

The transition from the 1998 Edition through the 2000 Addenda to the 2001 Edition through the 2003 Addenda of ASME Section XI for Hope Creek Generating Station's Third Interval does not impact the currently approved Risk-Informed ISI evaluation process used in the Second Interval, and the requirements of the new Code edition/addenda will be implemented as detailed in the Hope Creek Generating Station ISI Program Plan.

The Risk Impact Assessment completed as part of the original baseline RISI Program was 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 transition occurring between two different methodologies, but rather, the currently approved RISI methodology and evaluation will be maintained for the new interval. As such, the original risk impact assessment process is not impacted by the new interval and does not require update.

As an added measure of assurance, any new systems, portions of systems, or components being included in the RISI Program for the Third Interval will be added to the Risk Impact Assessment performed during the previous interval. These components will be addressed within the evaluation at the start of the new interval to assure that the new Third Interval RISI element selection provides an acceptable overall change-in-risk when compared to the old ASME Section XI population of exams which existed prior to the implementation of the first RISI Program.

The actual "evaluation and ranking procedure" including the Consequence Evaluation and Degradation Mechanism Assessment processes of the currently approved (Reference

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-01
Revision 0
(Page 4 of 6)

3) RISI Program remain unchanged and 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 have been and will continue to be reevaluated and revised 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 encompass the complete living program process applied under the Hope Creek Generating Station RISI Program.

5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE:

The proposed alternative originally implemented in the "Final Report for the Risk-Informed Inservice Inspection Project for Hope Creek" (Reference 3), along with the two enhancements noted below, provide an acceptable level of quality and safety as required by 10 CFR 50.55a(a)(3)(i). This original program is currently approved for Hope Creek Generating Station's Second Inspection Interval as documented in Reference 5.

The Third Interval RISI Program will be a continuation of the current application and will continue to be a living program as described in the Reason For Request section of this relief request. No changes to the evaluation methodology as currently implemented under EPRI TR-112657, Revision B-A, are required as part of this interval update. The following two enhancements will be implemented.

In lieu of the evaluation and sample expansion requirements in Section 3.6.6.2, "RISI Selected Examinations" of EPRI TR-112657, Hope Creek Generating Station will utilize the requirements of Subarticle -2430, "Additional Examinations" contained in Code Case N-578-1 (Reference 4). The alternative criteria for additional examinations contained in Code Case N-578-1 provide 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, Hope Creek Generating Station will utilize the provisions listed in Table 1, Examination Category R-A, "Risk-Informed Piping Examinations" contained in Code Case N-578-1 (Reference 4). To implement Note 10 of this table, paragraphs and figures from the 2001 Edition through the 2003 Addenda of ASME Section XI (Hope Creek Generating Station'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 a detailed breakdown for examination method and categorization of parts to be examined.

The Hope Creek Generating Station RISI Program, as developed in accordance with EPRI TR-112657, Rev. B-A (Reference 1), requires that 25% of the elements that are

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-01

Revision 0
(Page 5 of 6)

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 Hope Creek Generating Station pressure testing program, which remains unaffected by the RISI program.

6.0 DURATION OF PROPOSED ALTERNATIVE:

Relief is requested for the Third Ten-Year Inspection Interval for Hope Creek Generating Station.

7.0 PRECEDENTS:

Similar relief requests have been approved for:

Hope Creek Generating Station Second Inspection Interval Risk-Informed Relief Request dated March 11, 2004 was authorized per SER dated December 8, 2004. The Third Inspection Interval Relief Request utilizes an identical RISI methodology as was previously approved.

Susquehanna Steam Electric Station Third Inspection Interval Relief Request 3RR-01 was authorized per SER dated July 28, 2005.

Dresden Station Fourth Inspection Interval Relief Request I4R-02 was authorized per SER dated September 4, 2003.

Quad Cities Station Fourth Inspection Interval Relief Request I4R-02 was authorized per SER dated January 28, 2004.

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-01

Revision 0
(Page 6 of 6)

8.0 REFERENCES:

- 1) Electric Power Research Institute (EPRI) Topical Report (TR) 112657 Rev. B-A, "Revised Risk-Informed Inservice Inspection Evaluation Procedure", December 1999.
- 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) Final Report for the Risk-Informed Inservice Inspection Project for Hope Creek, dated August 2, 2004.
- 4) American Society of Mechanical Engineers (ASME) Code Case N-578-1, "Risk-Informed Requirements for Class 1, 2, or 3 Piping, Method B"
- 5) Darrell J. Roberts (NRC) to A. Christopher Bakken, III (PSEG Nuclear) letter dated December 8, 2004 transmitting "Hope Creek Generating Station – Implementation of a Risk-Informed Inservice Inspection Program."

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-02
Revision 0
(Page 1 of 7)

**Request for Relief for Alternate Testing and Examination Requirements for Snubbers
In Accordance with 10 CFR 50.55a(a)(3)(i)**

1.0 ASME CODE COMPONENTS AFFECTED:

Code Class:	1, 2, and 3 Snubbers
Reference:	IWF-5000, Inservice Inspection Requirements for Snubbers
Examination Category:	N/A
Item Number:	N/A
Description:	Preservice and Inservice Examinations and Tests for Snubbers

2.0 APPLICABLE CODE EDITION AND ADDENDA:

The Inservice Inspection program is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, 2001 Edition through the 2003 Addenda. Table IWA-1600-1 of the ASME B&PV Code, Section XI specifically references the 1987 Edition with OMa-1988 Addenda of the ASME/ANSI OM (Part 4).

3.0 APPLICABLE CODE REQUIREMENT:

Subparagraph IWF-5200(a) specifies that preservice examinations shall be performed in accordance with ASME/ANSI OM, Part 4, using the VT-3 visual examination method described in IWA-2213.

Subparagraph IWF-5200(b) specifies that preservice tests shall be performed in accordance with ASME/ANSI OM, Part 4.

Subparagraph IWF-5200(c) specifies that integral and non-integral attachments for snubbers, including lugs, bolting, pins and clamps, shall be visually examined in accordance with ASME Section XI, Subsection IWF.

Subparagraph IWF-5300(a) specifies that inservice examinations shall be performed in accordance with ASME/ANSI OM, Part 4, using the VT-3 visual examination method described in IWA-2213.

Subparagraph IWF-5300(b) specifies that inservice tests shall be performed in accordance with ASME/ANSI OM, Part 4.

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-02

Revision 0
(Page 2 of 7)

Subparagraph IWF-5300(c) specifies that integral and non-integral attachments for snubbers, including lugs, bolting pins, and clamps, shall be visually examined in accordance with ASME Section XI, Subsection IWF.

The regulation in 10 CFR 50.55a(b)(3)(v) permits the use of Subsection ISTD, "Inservice Testing of Dynamic Restraints (Snubbers) in Light-water Reactor Power Plants," ASME OM Code, 1995 Edition through the 2003 Addenda, in lieu of the requirements for snubbers in ASME Section XI, IWF-5200(a), IWF-5200(b), IWF-5300(a) and IWF-5300(b), by making appropriate changes to their technical specifications or licensee-controlled documents.

4.0 REASON FOR REQUEST:

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative, utilizing Hope Creek Generating Station Technical Specification 3/4.7.5 provides an acceptable level of quality and safety.

5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE:

Proposed Alternative

PSEG Nuclear LLC (PSEG) requests the use of Plant Systems Technical Specification (TS) 3/4.7.5, Snubbers, as found within the Hope Creek Generating Station TS for visual inspection, and functional testing requirements. Snubber preservice and inservice visual examinations will be conducted using the VT-3 visual examination method described in IWA-2213 of ASME B&PV Code, Section XI.

Repair/replacement activities performed on snubbers shall be in accordance with Article IWA-4000 of the ASME B&PV Code, Section XI.

Snubbers installed, corrected, or modified by repair/replacement activities shall be preservice examined and preservice tested in accordance with the applicable Technical Specification requirements prior to return to service.

Basis for Use

Hope Creek Generating Station Plant Systems TS 3/4.7.5, Snubbers contains specifically developed and approved visual inspection and functional testing requirements for the snubbers at HCGS.

The Technical Specification differs from the ASME/ANSI OM, Part 4 requirements for examination scheduling, re-examinations, and functional testing requirements.

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-02

Revision 0
(Page 3 of 7)

Generic Letter 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions," dated December 11, 1990 was issued to reduce the burden placed on utilities by the previous visual examination schedule requirements. The Hope Creek Generating Station Technical Specifications have incorporated these recommendations.

The Hope Creek Generating Station Technical Specifications specify three different plans for snubber functional testing:

1. Functionally test 10% of a type of snubber with an additional 10% tested for each functional testing failure, or
2. Functionally test a sample size and determine sample acceptance or rejection using Technical Specification figure 4.7.5-1 (referred to as the 37 Plan), or
3. Functionally test a representative sample size and determine sample acceptance or rejection using the equation, $N = 55(1+C/2)$, where "C" is the number of snubbers found that do not meet the functional test acceptance criteria and "N" is the total number of snubbers tested (referred to as the 55 Plan).

The TS requirements for functional testing are provided for information in Attachment HC-I3R-02.1.

ASME/ANSI OM (Part 4) specifies three functional test plans. This Code was completely revised in the 1988 Addenda to incorporate three snubber functional testing sampling plans, identified as the 10% testing sample plan, the 37 testing sample plan and the 55 testing sample plan.

The 10% testing sample plan differs from the Technical Specification plan in that it only requires an additional 5% of snubbers to be tested for each functional test failure. This results in an increase in the overall level of plant quality and safety when using the Technical Specification.

In addition, the HCGS Technical Specification contains requirements for snubber service life monitoring including items such as seals, springs, and other critical parts based on test results and failure history.

6.0 DURATION OF PROPOSED ALTERNATIVE:

Relief is requested for the Third Ten-Year Inspection Interval for Hope Creek Generating Station.

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-02

Revision 0
(Page 4 of 7)

7.0 PRECEDENTS:

Similar relief requests have been approved for:

Hope Creek Generating Station Second Inspection Interval Relief Request No. RR-A1 dated May 11, 1998 was authorized by SER dated February 3, 2000. This Third Inspection Interval Relief Request utilizes essentially an identical basis, as was previously approved.

Salem Generating Station, Unit 1, Third Inspection Interval Relief Request No. S1-RR-F01 dated July 8, 2002 was authorized by SER dated July 28, 2003.

Salem Generating Station, Unit 2, Third Inspection Interval Relief Request No. S2-I3-RR-F01 dated April 8, 2005 was authorized by SER dated May 4, 2005.

8.0 REFERENCES:

1. Hope Creek Generating Station Technical Specifications.
2. James W. Clifford (NRC) to Harold W. Keiser (PSE&G) letter dated February 3, 2000 transmitting "Safety Evaluation of Relief Requests for Second 10-Year Interval for Inservice Inspection Program – Hope Creek Generating Station" (TAC NO. MA2026)

10 CFR 50.55a RELIEF REQUEST: HC-I3R-02

Revision 0
(Page 5 of 7)

Attachment HC-I3R-02.1

Surveillance Requirement (SR) 4.7.5.e provides the requirements for snubber functional testing:

Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers shall be tested using one of the following sample plans for each type of snubber. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected prior to the test period or the sample plan used in the prior test period shall be implemented:

- 1) At least 10% of the total of each type of snubber shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of Specification 4.7.5.f., an additional 10% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time, providing all snubbers tested with the failed equipment during the day of equipment failure are retested; or

- 2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 4.7.5-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Specification 4.7.5.f. The cumulative number of snubbers of a type tested is denoted by "N". At the end of testing "N" snubbers, the results shall be plotted on Figure 4.7.5-1. If at any time the point plotted falls on or above the "Reject" line all snubbers of that type shall be functionally tested. If at any time the point plotted falls on or below the "Accept" line, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or the "Reject" region, or all the snubbers of that type have been tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time, providing all snubbers tested with the failed equipment during the day of equipment failure are retested; or

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-02

Revision 0
(Page 6 of 7)

Attachment HC-I3R-02.1 (Cont'd.)

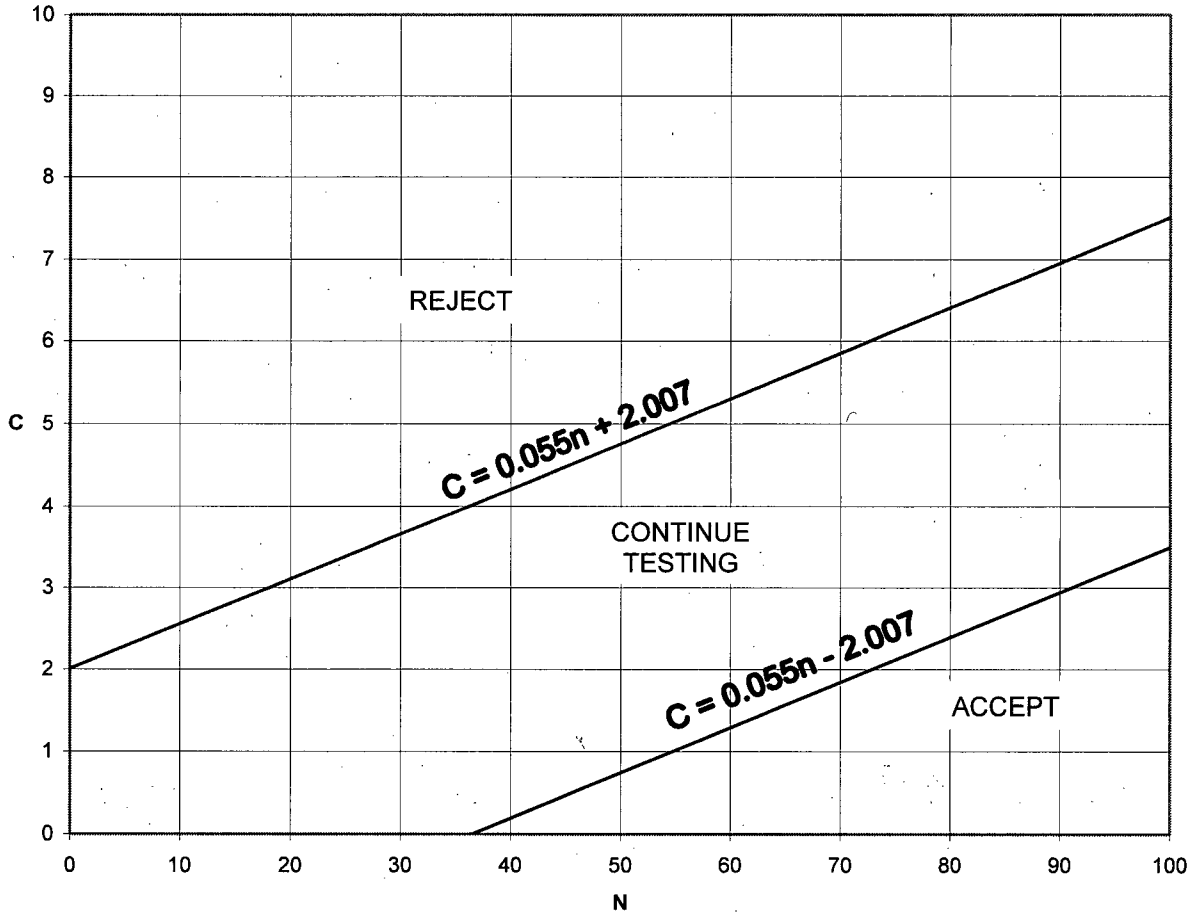
- 3) An initial representative sample of 55 snubbers of each type shall be functionally tested. For each snubber type which does not meet the functional test acceptance criteria, another sample of at least one-half the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, $1 + C/2$, where "C" is the number of snubbers found which do not meet the functional test acceptance criteria. The results from this sample plan shall be plotted using an "Accept" line which follows the equation $N = 55(1 + C/2)$. Each snubber point should be plotted when "N" snubbers have been tested. If the point plotted falls on or below the "Accept" line, testing of that type of snubber may be terminated. If the point plotted falls above the "Accept" line, testing must continue until the point falls on or below the "Accept" line or all the snubbers of that type have been tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time, providing all snubbers tested with the failed equipment during the day of equipment failure are retested.

The representative sample selected for the initial function test sample plans shall be randomly selected from the snubbers of each type and reviewed before beginning the testing. The review shall ensure as far as practical that they are representative of the various configurations, operating environments, range of size, and capacity of snubbers of each type. Snubbers placed in the same locations as snubbers which failed the previous functional test shall be retested at the time of the next functional test but shall not be included in the sample plan, and failure of this functional test shall not be the sole cause for increasing the sample size under the sample plan. If during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional testing results shall be reviewed at the time to determine if additional samples should be limited to the type of snubber which has failed the functional testing.

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-02
Revision 0
(Page 7 of 7)

Attachment HC-I3R-02.1 (Cont'd.)



SAMPLE PLAN 2) FOR SNUBBER FUNCTIONAL TEST

FIGURE 4.7.5-1

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-03
Revision 0
(Page 1 of 5)

**Request for Relief for Inservice Inspection Impracticality of Pressure Testing
the RPV Head Flange Seal Leak Detection System
In Accordance with 10 CFR 50.55a(g)(5)(iii)**

1.0 ASME CODE COMPONENTS AFFECTED:

Code Class:	2
Reference:	Table IWC-2500-1 IWC-5200
Examination Category:	C-H
Item Number:	C7.10
Description:	Pressure Testing the RPV Head Flange Seal Leak Detection System
Component Number:	Class 2 RPV Head Flange Seal Leak Detection System
Drawing Number:	M-41-1, Sheet 1

2.0 APPLICABLE CODE EDITION AND ADDENDA:

The Inservice Inspection program is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, 2001 Edition through the 2003 Addenda.

3.0 APPLICABLE CODE REQUIREMENT:

Table IWC-2500-1, Examination Category C-H, Item Number C7.10, requires all Class 2 pressure retaining components be subject to a system leakage test with a VT-2 visual examination in accordance with IWC-5220. This pressure test is to be conducted once each inspection period.

4.0 IMPRACTICALITY OF COMPLIANCE:

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested on the basis that pressure testing the RPV Flange Leak Detection Line is deemed impractical.

The Reactor 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 HC-I3R-03.1). This line is required during plant operation and will indicate failure of the inner flange seal O-ring. Failure of the O-ring would result in a High Pressure Alarm in the Main Control Room.

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-03

Revision 0
(Page 2 of 5)

The configuration of this system precludes manual testing while the vessel head is removed. As figure HC-I3R-03.1 portrays, the configuration of the vessel tap, combined with the small size of the tap and the high test pressure requirement (approximately 1005 psig), prevents the tap from being temporarily plugged. Also, when the vessel head is installed, an adequate pressure test cannot be performed due to the fact that the inner O-ring is designed to withstand pressure in one direction only. Due to the groove that the O-ring sits in and the pin/wire clip assembly (See Figure HC-I3R-03.2), pressurization in the opposite direction into the recessed cavity and retainer clips would likely damage the O-ring.

5.0 BURDEN CAUSED BY COMPLIANCE:

Pressure testing of this line during the Class 2 System Leakage Test is precluded because the line will only be pressurized in the event of a failure of the inner O-ring. Purposely failing the inner O-ring to perform the Code required test would require purchasing a new set of O-rings, additional time and radiation exposure to detension the reactor vessel head, install the new O-rings, and then reset and retension the reactor vessel head.

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

6.0 PROPOSED ALTERNATIVE AND BASIS FOR USE:

A VT-2 visual examination on the Class 2 portion of the RPV Flange Leak Detection Line will be performed during each inspection period when the RPV head is off and the head cavity is flooded above the vessel flange. The static head developed with the leak detection line filled with water will allow for the detection of any gross indications in the line. This examination will be performed each inspection period as per the frequency specified by Table IWC-2500-1.

7.0 DURATION OF PROPOSED ALTERNATIVE:

Relief is requested for the Third Ten-Year Inspection Interval for Hope Creek Generating Station.

ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-03
Revision 0
(Page 3 of 5)

8.0 PRECEDENTS:

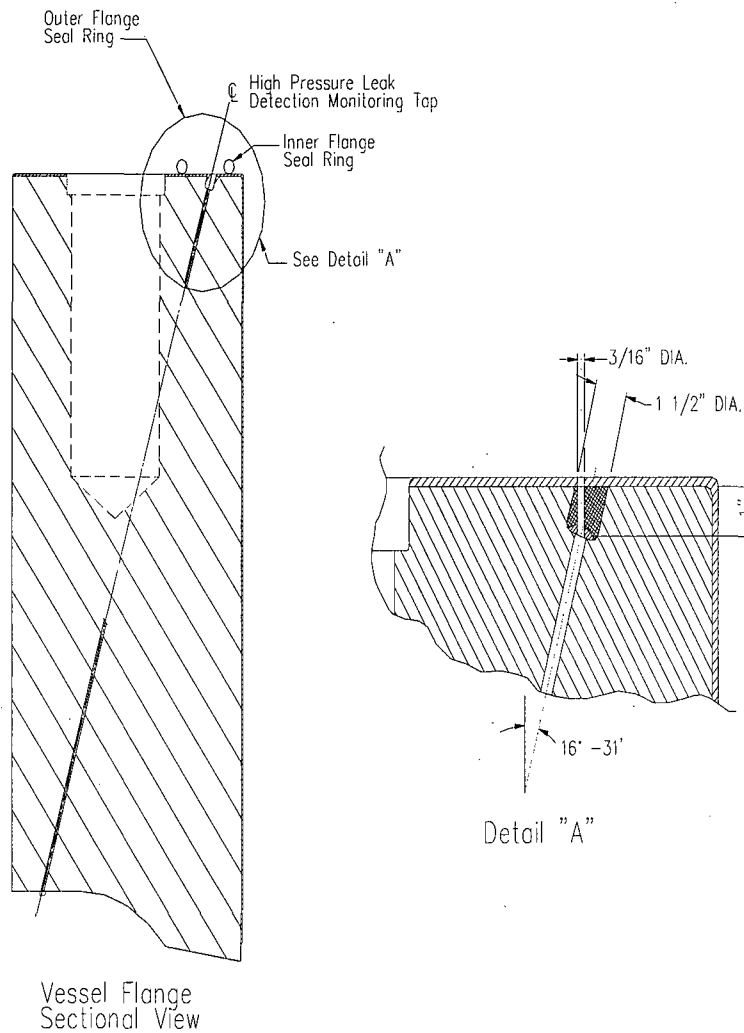
Similar relief requests have been approved for:

Quad Cities Nuclear Power Station, Units 1 and 2, Fourth 10-Year Interval Relief Request I4R-05, Rev.01 dated August 13, 2003 was authorized by SER dated January 28, 2004 (TAC Nos. MB7695 through MB7712).

10 CFR 50.55a RELIEF REQUEST: HC-I3R-03
Revision 0
(Page 4 of 5)

FIGURE HC-I3R-03.1

FLANGE SEAL LEAK DETECTION LINE DETAIL
(Dimensions are typical for BWR)



ISI Program Plan
Hope Creek Generating Station, Third Interval

10 CFR 50.55a RELIEF REQUEST: HC-I3R-03
Revision 0
(Page 5 of 5)

FIGURE HC-I3R-03.2
O-RING CONFIGURATION

