

June 25, 2003

Mr. Roy A. Anderson  
President & Chief Nuclear Officer  
PSEG Nuclear, LLC - X04  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - EVALUATION OF RELIEF REQUEST  
HC-RR-F02 (TAC NO. MB7837)

Dear Mr. Anderson:

By letter dated February 20, 2003, PSEG Nuclear, LLC (PSEG) submitted a request for relief from Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(a)(3)(i) for the Hope Creek Generating Station (Hope Creek). Specifically, Relief Request HC-RR-F02 sought approval to implement paragraphs IWF-3112.3 and IWF-3122.3 from the 1995 Edition of the ASME Code, including the 1997 Addenda, for ASME Class 1, 2, 3, and MC component supports.

Based on the information provided, the U.S. Nuclear Regulatory Commission (NRC) staff concludes that your proposal to use paragraphs IWF-3112.3 and IWF-3122.3 from the 1995 Edition of the ASME Code, including the 1997 Addenda, for ASME Class 1, 2, 3, and MC component supports, as described in Relief Request HC-RR-F02, provides an acceptable level of quality and safety. Therefore, the NRC staff authorizes you to use the proposed alternatives pursuant to 10 CFR 50.55a(a)(3)(i) for the second 10-year interval at Hope Creek. All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this Relief Request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

The NRC staff's Safety Evaluation is enclosed. If you have any questions, please contact your Project Manager, Rick Ennis, at 301-415-1420.

Sincerely,

**/RA by RLaufer for/**

James W. Clifford, Chief, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosure: As stated

cc w/encl: See next page

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\* SE input provided by memorandum dated 04/02/03. No major changes made.

ADAMS ACCESSION NUMBER: ML031410302

\*\* See previous concurrence

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OFFICIAL RECORD COPY

Hope Creek Generating Station

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF

SECOND 10-YEAR INSERVICE INSPECTION INTERVAL

HOPE CREEK GENERATING STATION

PSEG NUCLEAR, LLC

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated February 20, 2003, PSEG Nuclear, LLC (PSEG) submitted a request for relief from the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, requirements for the maximum percentage of examinations credited for each period of the Hope Creek Generating Station (Hope Creek), inservice inspection (ISI) program. In the letter, PSEG requested use of alternative requirements provided by paragraphs IWF-3112.3 and IWF-3122.3 from the 1995 Edition of the ASME Code, including the 1997 Addenda, for ASME Class 1, 2, 3, and MC component supports.

Relief was requested for the second 10-year ISI interval for Hope Creek.

2.0 REGULATORY EVALUATION

The ISI of the ASME Code Class 1, 2, 3, and MC components is to be performed in accordance with Section XI of the ASME Code and applicable edition and addenda as required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(g), except where specific written relief has been granted by the U.S. Nuclear Regulatory Commission (NRC or the Commission) pursuant to 10 CFR 50.55a(g)(6)(i). Pursuant to 10 CFR 50.55a(a)(3), alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, Director of the Office of Nuclear Reactor Regulation, if the licensee demonstrates that: (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, 3, and MC components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components," to the extent practical, within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals, comply with the

requirements in the latest edition and addenda of Section XI of the ASME Code, incorporated by reference in 10 CFR 50.55a(b), 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code, incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed therein and subject to Commission approval.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Component Description

This request for relief is associated with ASME Section XI Class 1, 2, 3, and MC component supports at Hope Creek.

#### 3.2 ASME Code Examination Requirement for which Relief is Requested

The code of record for the Hope Creek second 10-year ISI Program is Section XI of the ASME Code, 1989 Edition, without Addenda. Specifically, relief was requested from subparagraphs -3112.3 and -3122.3 of Code Case N-491-2, which provides requirements for acceptance of a component support or portion of a component support by evaluation or test.

#### 3.3 PSEG's Proposed Alternative to ASME Code

PSEG proposes to implement the alternative requirements of Code paragraphs IWF-3112.3 and IWF-3122.3 from the 1995 Edition, including the 1997 Addenda of ASME Code, Section XI, for component supports. The licensee requested relief for the second 10-year ISI interval for Hope Creek.

#### 3.4 PSEG's Basis for the Proposed Alternative

In its letter dated February 20, 2003, PSEG provided its basis for requesting relief (as stated):

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested on the basis that the proposed alternative provides an acceptable level of quality and safety.

PSEG Nuclear LLC requests to use Sub-paragraphs IWF-3112.3 and IWF-3122.3 from the 1995 Edition, including the 1997 Addenda of Section XI. The 1997 Addenda incorporated revisions to these paragraphs as was shown within sub-paragraphs -3112.3 and -3122.3 of Code Case N-491-2.

Under the requirements of Sub-paragraphs IWF-3112.3 and IWF-3122.3 of the 1995 Edition, including the 1996 Addenda of Section XI, and similar paragraphs within the above quoted Code Cases; examination results that exceed the acceptance standards of IWF-3410 are initially considered to be unacceptable for service, but may be accepted without performing corrective measures based on an analysis and/or test to substantiate its integrity for continued service. However, if the owner optionally elects to perform the corrective measures of IWF-3112.2 or IWF-3122.2, re-examination requirements of IWF-2220 are then required.

The requirement to perform re-examination of acceptable component supports that are optionally adjusted or have a repair/replacement activity performed to restore the component support to its original design condition is unnecessary.

The re-examination following these corrective measures on acceptable supports requires expenditure of visual examiner resources, [could] potentially incur additional radiation dose, and [could] potentially require additional critical path duration without a compensating increase in quality or safety.

In the 1997 Addenda, sub-paragraphs IWF-3112.3 and IWF-3122.3 were revised to clarify that corrective measures may be performed on a component support to return the support to its original design condition, after acceptance by an evaluation or test, without additionally requiring the re-examinations of IWF-2220.

This revision provides a realistic approach to the inspection of component supports. Examination results that exceed the acceptance standards of IWF-3410 are first evaluated or tested to determine whether the component support is acceptable for service. This is similar to an operability determination. If the component support is determined to be acceptable for service, no corrective measures are required. However, if PSEG Nuclear LLC optionally elects to perform corrective measures in order to return the component support to its original design condition, the additional re-examination requirements of IWF-2220 are not required.

All related requirements will be met, because these revisions to sub-paragraphs IWF-3112.3 and IWF-3122.3 are the only revisions to Subsection IWF in the 1997 Addenda. All other provisions of Article IWF remain identical to the 1995 Edition, including the 1996 Addenda of Section XI.

This revision to the Code therefore, has the net effect of encouraging the owner to perform corrective measures on degraded but acceptable component supports.

Based on the alternative requirements of sub-paragraphs IWF-3112.3 and IWF-3122.3 in the 1997 Addenda there is reasonable assurance of continued structural integrity, and an acceptable level of quality and safety will be maintained during the Second Inspection Interval.

### 3.5 NRC Staff's Evaluation

Paragraph IWF-2500 of Section XI of the ASME Code, 1989 Edition, requires that component supports be examined according to Table IWF-2500-1 for: (a) mechanical connections to pressure-retaining components and building structure; (b) weld connections to building structure; (c) weld and mechanical connections at intermediate joints in multi-connected integral and non-integral supports; (d) clearances of guides and stops, alignment of supports, and assembly of support items; (e) hot or cold settings of spring supports and constant load supports; and (f) accessible sliding surfaces. If a component support does not meet the structural integrity acceptance criteria stated in Paragraph IWF-3410, the licensee must take

corrective action in accordance with Paragraph IWF-3122.2 (or IWF-3112.2), or substantiate the structural integrity of the support in question through an appropriate engineering evaluation and/or test in accordance with IWF-3122.3 (or IWF-3112.3).

Paragraphs IWF-3112.2 and IWF-3122.2 allow licensees to make adjustments to component supports for certain conditions, such as: (1) detached or loosened mechanical connections; (2) improper hot or cold settings of spring supports and constant load supports; (3) misaligned supports; or (4) improper displacement settings of guides and stops. As an alternative, Paragraphs IWF-3112.2 and IWF-3122.2 permit licensees to repair or replace the defective component support in accordance with IWA-4000. The 1989 Edition of Section XI requires that the licensee reexamine the component according to IWF-2200 following these activities. Once this is successfully completed, the support may be declared acceptable for continued service.

The 1997 Addenda to the 1995 Edition of the ASME Code revised Paragraphs IWF-3112.3 and IWF-3122.3. The 1997 Addenda permits corrective measures to restore the component support to its original design condition, if a preceding engineering evaluation or test has determined that the support is acceptable for service. The 1997 Addenda also waives the requirement to reexamine the support in accordance with IWF-2200 after corrective measures, consisting of the previously discussed adjustments, have been completed. Because structural integrity will still be substantiated by evaluation or test, the staff finds the option to restore an otherwise acceptable component support to its original design condition after corrective measures (adjustments) of IWF-3112.2(a) or IWF-3122.2(a) have been performed without further reexamination to be acceptable.

#### 4.0 CONCLUSION

Based on its review, the NRC staff finds that the proposed alternative described in PSEG's letter dated February 20, 2003, provides an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), use of the alternative requirements of paragraphs IWF-3112.3 and IWF-3122.3 from the 1997 Addenda to the 1995 Edition of the ASME Code, Section XI, for component supports is authorized for the second 10-year ISI interval for Hope Creek. All other ASME Code, Section XI requirements, for which relief was not specifically requested and approved in this relief request, remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: J. Collins

Date: June 25, 2003