

October 30, 2002

Mr. Harold W. Keiser  
Chief Nuclear Officer & President  
PSEG Nuclear LLC - X04  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 - RELIEF  
FROM ASME CODE REQUIREMENTS RELATED TO THE SALEM INSERVICE  
INSPECTION PROGRAM, RELIEF REQUEST SC-RR-F02, (TAC NOS. MB6099  
AND MB6100)

Dear Mr. Keiser:

By letter dated July 8, 2002, PSEG Nuclear LLC (PSEG) submitted a request for relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (the Code), Section XI, requirements for the maximum percentage of examinations credited for each period of the Salem Nuclear Generating Station, Unit Nos. 1 and 2 (Salem), 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 third 10-year ISI interval for Salem Unit No. 1, and the second 10-year ISI interval for Salem Unit No. 2.

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the subject relief request. As documented in the enclosed Safety Evaluation (SE), the staff concludes that the proposed alternative will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the NRC staff authorizes the proposed alternative for the third 10-year ISI interval for Salem Unit No. 1, and the second 10-year ISI interval for Salem Unit No. 2.

Sincerely,

*/RA/*

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

Docket Nos. 50-272 and 50-311

Enclosure: Safety Evaluation

cc w/encl: See next page

October 30, 2002

Mr. Harold W. Keiser  
Chief Nuclear Officer & President  
PSEG Nuclear LLC - X04  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 - RELIEF FROM ASME CODE REQUIREMENTS RELATED TO THE SALEM INSERVICE INSPECTION PROGRAM, RELIEF REQUEST SC-RR-F02, (TAC NOS. MB6099 AND MB6100)

Dear Mr. Keiser:

By letter dated July 8, 2002, PSEG Nuclear LLC (PSEG) submitted a request for relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (the Code), Section XI, requirements for the maximum percentage of examinations credited for each period of the Salem Nuclear Generating Station, Unit Nos. 1 and 2 (Salem), 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 third 10-year ISI interval for Salem Unit No. 1, and the second 10-year ISI interval for Salem Unit No. 2.

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the subject relief request. As documented in the enclosed Safety Evaluation (SE), the staff concludes that the proposed alternative will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the NRC staff authorizes the proposed alternative for the third 10-year ISI interval for Salem Unit No. 1, and the second 10-year ISI interval for Salem Unit No. 2.

Sincerely,

**/RA/**

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

Docket Nos. 50-272 and 50-311

Enclosure: Safety Evaluation

cc w/encl: See next page

**DISTRIBUTION**

PUBLIC	ACRS	WBateman	TBergman	GMeyer, RGN-I
PDI-2 Reading	SRichards	RFretz	KManoly	GHill (4) - paper only
OGC	JAndersen	TClark		

ACCESSION NUMBER: ML022600485      **\*\*C/ via e-mail**

OFFICE	PDI-2/PM	PDI-2/LA**	EMEB/SC	OGC	PDI-2/SC(A)
NAME	RFretz	TClark	KManoly	SUttal	JAndersen
DATE	09/20/02	09/19/02	10/17/02	10/24/02	10/28/02

**OFFICIAL RECORD COPY**

PSEG Nuclear LLC

Salem Nuclear Generating Station,  
Unit Nos. 1 and 2

cc:

Mr. Elbert C. Simpson  
Senior Vice President &  
Chief Administrative Officer  
PSEG Nuclear - N19  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Vice President - Technical Support  
PSEG Nuclear - N10  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. David F. Garchow  
Vice President - Operations  
PSEG Nuclear - X10  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. Gabor Salamon  
Manager - Nuclear Safety and Licensing  
PSEG Nuclear - N21  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Jeffrie J. Keenan, Esquire  
PSEG Nuclear - N21  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Ms. R. A. Kankus  
Joint Owner Affairs  
PECO Energy Company  
Nuclear Group Headquarters KSA1-E  
200 Exelon Way  
Kennett Square, PA 19348

Lower Alloways Creek Township  
c/o Mary O. Henderson, Clerk  
Municipal Building, P.O. Box 157  
Hancocks Bridge, NJ 08038

Dr. Jill Lipoti, Asst. Director  
Radiation Protection Programs  
NJ Department of Environmental  
Protection and Energy  
CN 415  
Trenton, NJ 08625-0415

Richard Hartung  
Electric Service Evaluation  
Board of Regulatory Commissioners  
2 Gateway Center, Tenth Floor  
Newark, NJ 07102

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Senior Resident Inspector  
Salem Nuclear Generating Station  
U.S. Nuclear Regulatory Commission  
Drawer 0509  
Hancocks Bridge, NJ 08038

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO THE EXAMINATION OF COMPONENT SUPPORTS  
FOLLOWING CORRECTIVE MEASURES  
IN ACCORDANCE WITH RELIEF REQUEST SC-RR-F02  
PSEG NUCLEAR LLC  
SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated July 8, 2002, PSEG Nuclear LLC (PSEG) submitted a request for relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (the Code), Section XI, requirements for the maximum percentage of examinations credited for each period of the Salem Nuclear Generating Station, Unit Nos. 1 and 2 (Salem), 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 third 10-year ISI interval for Salem Unit No. 1, and the second 10-year ISI interval for Salem Unit No. 2.

2.0 BACKGROUND

Regulatory Requirements

The ISI of the ASME Code Class 1, 2, and 3 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 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 U.S. Nuclear Regulatory Commission (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.

ENCLOSURE

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 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 RELIEF REQUEST

#### 3.1 Component Description

ASME Section XI Class 1, 2, 3, and MC component supports

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

##### Salem, Unit No. 1

The code of record for the Salem, Unit No. 1 ISI Program is Section XI of the ASME Code, 1995 Edition, including the 1996 Addenda. Sub-paragraphs IWF-3112.3 and IWF-3122.3 of the Code provide requirements for acceptance of component supports or a portion of a component support by evaluation or test.

##### Salem, Unit No. 2

The code of record for the Salem, Unit No. 2 ISI Program is Section XI of the ASME Code, 1986 Edition, without Addenda. Sub-paragraphs -3112.3 and -3122.3 of Code Case N-491 provide requirements for acceptance of a component support or a 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 third 10-year ISI interval for Salem, Unit No. 1, and the second 10-year ISI interval for Salem, Unit No. 2.

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

In its letter dated July 8, 2002, 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, includes 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, potentially incur additional radiation dose, and 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 Third Inspection Interval.

#### 4.0 EVALUATION

Paragraph IWF-2500 of Section XI of the ASME Code, 1995 Edition, including the 1996 Addenda, 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 stop, 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. For Salem, Unit No. 2, Paragraphs -3112.2 and -3122.2 of Code Case N-491 state similar requirements. In either case, the 1995 Edition of Section XI, including the 1996 Addenda, and Code Case N-491 require 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.

However, 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.

#### NRC Staff's Conclusion

Based on its review, the NRC staff finds that the proposed alternative described in PSEG's letter dated July 8, 2002, 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. Relief is granted for the third 10-year ISI interval for Salem Unit No. 1, and the second 10-year ISI interval for Salem Unit No. 2.

Principal Contributor: R. Fretz

Date: October 30, 2002