

January 19, 2007

Mr. William Levis  
Senior Vice President & Chief Nuclear Officer  
PSEG Nuclear LLC-X04  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NO. 1 - NOTICE OF  
CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY  
OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING  
(TAC NO. MD4034)

Dear Mr. Levis:

Enclosed is a copy of a "Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity For a Hearing" related to your application for an amendment dated January 18, 2007, for Salem Nuclear Generation Station (Salem), Unit No. 1.

The amendment request proposes a one-time change to the Technical Specifications (TSs) regarding the steam generator (SG) tube inspection and repair required for the portion of the SG tubes passing through the tubesheet region. Specifically, for Salem Unit No. 1 refueling outage 18 (planned for spring 2007) and the subsequent operating cycle, the proposed TS changes would limit the required inspection (and repair if degradation is found) to the portions of the SG tubes passing through the upper 17 inches of the approximate 21-inch tubesheet region.

The notice has been forwarded to the Office of the *Federal Register* for publication.

Sincerely,

**/RA/**

Richard B. Ennis, Senior Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-272

Enclosure: As stated

cc w/encl: See next page

Mr. William Levis  
Senior Vice President & Chief Nuclear Officer  
PSEG Nuclear LLC-X04  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NO. 1 - NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING (TAC NO. MD4034)

Dear Mr. Levis:

Enclosed is a copy of a "Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity For a Hearing" related to your application for an amendment dated January 18, 2007, for Salem Nuclear Generation Station (Salem), Unit No. 1.

The amendment request proposes a one-time change to the Technical Specifications (TSs) regarding the steam generator (SG) tube inspection and repair required for the portion of the SG tubes passing through the tubesheet region. Specifically, for Salem Unit No. 1 refueling outage 18 (planned for spring 2007) and the subsequent operating cycle, the proposed TS changes would limit the required inspection (and repair if degradation is found) to the portions of the SG tubes passing through the upper 17 inches of the approximate 21-inch tubesheet region.

The notice has been forwarded to the Office of the *Federal Register* for publication.

Sincerely,  
*/RA/*  
Richard B. Ennis, Senior Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-272

Enclosure: As stated

cc w/encl: See next page

DISTRIBUTION:

PUBLIC	RidsOgcRp
LPL1-2 R/F	RidsAcrcsAcnwMailCenter
RidsNrrDorLp11-2	RidsRgn1MailCenter
RidsNrrLACRaynor	RidsNrrDorIDPR
RidsNrrPMREnnis	

Accession No.: ML070180511

OFFICE	LPL1-2/PM	LPL1-2/LA	LPL1-2/BC
NAME	REnnis	CRaynor	HChernoff
DATE	1/19/07	1/19/07	1/19/07

OFFICIAL RECORD COPY

Salem Nuclear Generating Station, Unit Nos. 1 and 2

cc:

Mr. Dennis Winchester  
Vice President - Nuclear Assessment  
PSEG Nuclear  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. Thomas P. Joyce  
Site Vice President - Salem  
PSEG Nuclear  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. George H. Gellrich  
Plant Support Manager  
PSEG Nuclear  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. Carl J. Fricker  
Plant Manager - Salem  
PSEG Nuclear - N21  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. Darin Benyak  
Director - Regulatory Assurance  
PSEG Nuclear - N21  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. James Mallon  
Manager - Licensing  
200 Exelon Way, KSA 3-E  
Kennett Square, PA 19348

Mr. Steven Mannon  
Manager - Regulatory Assurance  
P.O. Box 236  
Hancocks Bridge, NJ 08038

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

Township Clerk  
Lower Alloways Creek Township  
Municipal Building, P.O. Box 157  
Hancocks Bridge, NJ 08038

Mr. Paul Bauldauf, P.E., Asst. Director  
Radiation Protection Programs  
NJ Department of Environmental  
Protection and Energy  
CN 415  
Trenton, NJ 08625-0415

Mr. Brian Beam  
Board of Public Utilities  
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

UNITED STATES NUCLEAR REGULATORY COMMISSION

PSEG NUCLEAR LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-272

NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO  
FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING

The U.S. Nuclear Regulatory Commission (NRC or the Commission) is considering issuance of an amendment to Facility Operating License No. DPR-70 issued to PSEG Nuclear LLC (the licensee) for operation of the Salem Nuclear Generating Station (Salem), Unit No. 1, located in Salem County, New Jersey.

The amendment request proposes a one-time change to the Technical Specifications (TSs) regarding the steam generator (SG) tube inspection and repair required for the portion of the SG tubes passing through the tubesheet region. Specifically, for Salem Unit No. 1 refueling outage 18 (planned for spring 2007) and the subsequent operating cycle, the proposed TS changes would limit the required inspection (and repair if degradation is found) to the portions of the SG tubes passing through the upper 17 inches of the approximate 21-inch tubesheet region.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in Title 10 of

the *Code of Federal Regulations* (10 CFR), Section 50.92, this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

Of the accidents previously evaluated, the proposed changes only affect the steam generator tube rupture (SGTR) event evaluation and the postulated steam line break (SLB) accident evaluation. Loss-of-coolant accident (LOCA) conditions cause a compressive axial load to act on the tube. Therefore, since the LOCA tends to force the tube into the tubesheet rather than pull it out, it is not a factor in this amendment request. Another faulted load consideration is a safe shutdown earthquake (SSE); however, the seismic analysis of Model F steam generators has shown that axial loading of the tubes is negligible during an SSE.

At normal operating pressures, leakage from primary water stress corrosion cracking (PWSCC) below 17 inches from the top of the tubesheet is limited by both the tube-to-tubesheet crevice and the limited crack opening permitted by the tubesheet constraint. Consequently, negligible normal operating leakage is expected from cracks within the tubesheet region.

For the SGTR event, the required structural margins of the steam generator tubes will be maintained by the presence of the tubesheet. Tube rupture is precluded for cracks in the hydraulic expansion region due to the constraint provided by the tubesheet. Therefore, the performance criteria of NEI [Nuclear Energy Institute] 97-06, Rev. 2, "Steam Generator Program Guidelines" and the Regulatory Guide (RG) 1.121, "Bases for Plugging Degraded PWR [pressurized-water reactor] Steam Generator Tubes," margins against burst are maintained during normal and postulated accident conditions. The limited inspection length of 17 inches supplies the necessary resistive force to preclude pullout loads under both normal operating and accident conditions. The contact pressure results from the hydraulic expansion process, thermal expansion mismatch between the tube and tubesheet and from the differential pressure between the primary and secondary side. Therefore, the proposed change does not result in a significant increase in the probability or consequence of a[n] SGTR.

The probability of a[n] SLB is unaffected by the potential failure of a SG tube as the failure of a tube is not an initiator for a[n] SLB event. SLB leakage is limited by leakage flow restrictions resulting from the crack and tube-to-tubesheet contact pressures that provide a restricted leakage path above the indications and also limit the degree of crack face opening compared to free span indications. The leak rate during postulated accident conditions would be expected to be less than twice that during normal operation for indications near the bottom of the tubesheet (including indications in the tube end welds) based on the observation that while the driving pressure increases by about a factor of two, the flow resistance increases with an increase in the tube-to-tubesheet contact pressure. While such a decrease is rationally expected, the postulated accident leak rate is bounded by twice the normal operating leak rate if the increase in contact pressure is ignored. Since normal operating leakage is limited to 0.10 gpm [gallons per minute] (150 gpd [gallons per day]), the attendant accident condition leak rate, assuming all leakage to be from indications below 17 inches from the top of the tubesheet would be bounded by 0.187 gpm. This value is bounded by the 0.35 gpm leak rate assumed in Section 15.4.2, "Major Secondary System Pipe Rupture" of the Salem Unit 1 Updated FSAR [Final Safety Analysis Report (UFSAR)].

Based on the above, the performance criteria of NEI-97-06, Rev. 2 and draft RG 1.121 continue to be met and the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change does not introduce any changes or mechanisms that create the possibility of a new or different kind of accident. Tube bundle integrity is expected to be maintained for all plant conditions upon implementation of the limited tubesheet inspection depth methodology. The proposed changes do not introduce any new equipment or any change to existing equipment. No new effects on existing equipment are created nor are any new malfunctions introduced.

Therefore, based on the above evaluation, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the change involve a significant reduction in a margin of safety?

The proposed change maintains the required structural margins of the steam generator tubes for both normal and accident conditions. NEI 97-06, Rev. 2 and RG 1.121 are used as the basis in the development of the limited tubesheet inspection depth methodology for determining that steam generator tube integrity considerations are maintained within acceptable limits. RG 1.121 describes a method acceptable to the NRC staff for meeting General Design Criteria 14, 15,

31, and 32 by reducing the probability and consequences of an SGTR. RG 1.121 concludes that by determining the limiting safe conditions of tube wall degradation beyond which tubes with unacceptable cracking, as established by inservice inspection, should be removed from service or repaired, the probability and consequences of a[n] SGTR are reduced. This RG uses safety factors on loads for tube burst that are consistent with the requirements of Section III of the ASME [American Society of Mechanical Engineers Boiler and Pressure Vessel] Code.

For axially oriented cracking located within the tubesheet, tube burst is precluded due to the presence of the tubesheet. For circumferentially oriented cracking, Reference 1 [Westinghouse Report WCAP-16640-P, "Steam Generator Alternate Repair Criteria for Tube Portion Within the Tubesheet at Salem Unit 1," August 2006] defines a length of non-degraded expanded tube in the tubesheet that provides the necessary resistance to tube pullout due to the pressure induced forces (with applicable safety factors applied). Application of the limited tubesheet inspection depth criteria will not result in unacceptable primary-to-secondary leakage during all plant conditions.

Plugging of the steam generator tubes reduces the reactor coolant flow margin for core cooling. Implementation of the 17[-]inch inspection length at Salem Unit 1 will result in maintaining the margin of flow that may have otherwise been reduced by tube plugging.

Based on the above, it is concluded that the proposed changes do not result in any reduction of margin with respect to plant safety as defined in the [UFSAR] or bases of the plant Technical Specifications.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of 60 days after the date of publication of this notice. The Commission may issue the license amendment before expiration of the 60-day period provided that its final determination is that the

amendment involves no significant hazards consideration. In addition, the Commission may issue the amendment prior to the expiration of the 30-day comment period should circumstances change during the 30-day comment period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility. Should the Commission take action prior to the expiration of either the comment period or the notice period, it will publish in the *Federal Register* a notice of issuance. Should the Commission make a final No Significant Hazards Consideration Determination, any hearing will take place after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rulemaking, Directives and Editing Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and should cite the publication date and page number of this *Federal Register* notice. Written comments may also be delivered to Room 6D59, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1F21, 11555 Rockville Pike (first floor), Rockville, Maryland.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

Within 60 days after the date of publication of this notice, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.309, which is

available at the Commission's PDR, located at One White Flint North, Public File Area O1F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly-available records will be accessible from the Agencywide Documents Access and Management System's (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/doc-collections/cfr/>. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or a presiding officer designated by the Commission or by the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the Chief Administrative Judge of the Atomic Safety and Licensing Board will issue a notice of a hearing or an appropriate order.

As required by 10 CFR 2.309, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following general requirements: 1) the name, address and telephone number of the requestor or petitioner; 2) the nature of the requestor's/petitioner's right under the Act to be made a party to the proceeding; 3) the nature and extent of the requestor's/petitioner's property, financial, or other interest in the proceeding; and 4) the possible effect of any decision or order which may be entered in the proceeding on the requestors/petitioner's interest. The petition must also identify the specific contentions which the petitioner/requestor seeks to have litigated at the proceeding.

Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner/requestor shall provide a brief explanation of the bases for the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the

contention at the hearing. The petitioner/requestor must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. The petition must include sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner/requestor who fails to satisfy these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held. If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment. If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

Nontimely requests and/or petitions and contentions will not be entertained absent a determination by the Commission or the presiding officer of the Atomic Safety and Licensing Board that the petition, request and/or the contentions should be granted based on a balancing of the factors specified in 10 CFR 2.309(c)(1)(i)-(viii).

A request for a hearing or a petition for leave to intervene must be filed by: 1) first class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; 2) courier, express mail, and expedited delivery services: Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, Maryland, 20852, Attention: Rulemaking and Adjudications Staff; 3) E-mail addressed to the Office of the Secretary, U.S. Nuclear Regulatory Commission, [HEARINGDOCKET@NRC.GOV](mailto:HEARINGDOCKET@NRC.GOV); or 4) facsimile transmission addressed to the Office of the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC, Attention: Rulemakings and Adjudications Staff at (301) 415-1101, verification number is (301) 415-1966. A copy of the request for hearing and petition for leave to intervene should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and it is requested that copies be transmitted either by means of facsimile transmission to 301-415-3725 or by email to [OGCMailCenter@nrc.gov](mailto:OGCMailCenter@nrc.gov). A copy of the request for hearing and petition for leave to intervene should also be sent to Jeffrie J. Keenan, Esquire, Nuclear Business Unit - N21, P.O. Box 236, Hancocks Bridge, NJ 08038, attorney for the licensee.

For further details with respect to this action, see the application for amendment dated January 18, 2007, which is available for public inspection at the Commission's PDR, located at One White Flint North, File Public Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly-available records will be accessible from the ADAMS Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-room/adams.html>. Persons who do not have access to ADAMS or who encounter problems in

accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr@nrc.gov](mailto:pdr@nrc.gov).

Dated at Rockville, Maryland, this 19th day of January, 2007

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Richard B. Ennis, Senior Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation