

December 17, 2001

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, ISSUANCE OF
AMENDMENT RE: CONTAINMENT SYSTEMS - HYDROGEN ANALYZERS
(TAC NOS. MB1030 AND MB1031)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment Nos. 247 and 228 to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Nuclear Generating Station, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated January 5, 2001.

These amendments revise TS 3/4.6.4, Containment Systems, Combustible Gas Control, Hydrogen Analyzers, to reduce the channel calibration frequency of the Hydrogen Analyzers from quarterly to a frequency of once per refueling outage. The change also adds an additional surveillance requirement to perform a quarterly gas calibration.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Robert J. Fretz, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-272 and 50-311

Enclosures: 1. Amendment No. 247 to
License No. DPR-70
2. Amendment No. 228 to
License No. DPR-75
3. Safety Evaluation

cc w/encls: See next page

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DISTRIBUTION

PUBLIC	EAdensam	EMarinos	GMeyer, RGN-I
PDI-2 Reading	JClifford	BMarcus	GHill(4)
ACRS	RFretz	WBeckner	
OGC	TClark		

* SE input provided. No major changes made.

ACCESSION NUMBER: ML013240668

OFFICE	PDI-2/PM	PDI-2/LA	EEIB/SC*	OGC	PDI-2/SC
NAME	RFretz	TLClark	EMarinos	RHoefling	JClifford
DATE	11/29/01 12/12/01	11/27/01 12/12/01	11/15/2001	12/6/01	12/13/01

PSEG NUCLEAR LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-272

SALEM NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 247
License No. DPR-70

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the PSEG Nuclear LLC and Exelon Generation Company, LLC (the licensees) dated January 5, 2001, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-70 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 247, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Attachment: Changes to the Technical
Specifications

Date of Issuance: December 17, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 247

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Replace the following page of the Appendix A, Technical Specifications, with the attached revised page as indicated. The revised page is identified by amendment number and contain marginal lines indicating the area of change.

Remove Pages

3/4 6-18

Insert Pages

3/4 6-18

PSEG NUCLEAR LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-311

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 228
License No. DPR-75

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the PSEG Nuclear LLC and Exelon Generation Company, LLC (the licensees) dated January 5, 2001, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-75 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 228, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Attachment: Changes to the Technical
Specifications

Date of Issuance: December 17, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 228

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Replace the following page of the Appendix A, Technical Specifications, with the attached revised page as indicated. The revised page is identified by amendment number and contain marginal lines indicating the area of change.

Remove Pages

3/4 6-21

Insert Pages

3/4 6-21

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 247 AND 228 TO FACILITY OPERATING
LICENSE NOS. DPR-70 AND DPR-75
PSEG NUCLEAR LLC
EXELON GENERATION COMPANY, LLC
SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated January 5, 2001, PSEG Nuclear LLC (PSEG/the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit Nos. 1 and 2 (Salem), Technical Specifications (TSs). The requested changes would revise TS 3/4.6.4, "Containment Systems, Combustible Gas Control, Hydrogen Analyzers," to reduce the channel calibration frequency of the Hydrogen Analyzers from quarterly to a frequency of once per refueling outage. The proposed change will also add an additional surveillance requirement to perform a quarterly gas calibration. PSEG stated in its amendment application that the change is being requested to reduce personnel radiation exposure, and to reduce the potential for heat stress or fall-related injuries that are inherent with the current channel calibration surveillance test.

2.0 BACKGROUND

Section 50.44(b)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR 50.44(b)(1)) requires that pressurized water reactors have the capability to measure hydrogen concentration in the containment. Regulatory Guide (RG) 1.97 specifies that the monitors have a range of 0 to 10 volume percent. The quantity of hydrogen released to containment in most severe accidents would result in concentrations within this range.

General Design Criterion (GDC) 13, "Instrumentation and Control," states that "[i]nstrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety... Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges."

Salem TSs currently require a channel calibration of the containment hydrogen analyzer at least once every 92 days. The channel calibration procedure involves calibration of the hydrogen sensor, resistance temperature detector (RTD), and pressure transducer. The calibration of the hydrogen sensor uses sample gases containing a known hydrogen concentration that can be

accomplished without entering the containment. The calibration of the RTD and pressure transducer checks their accuracy against a secondary standard of a specified accuracy (referred to as a two-point check). The calibration of the RTD and pressure transducer can only be accomplished by technicians entering the containment. The area where the RTD and pressure transducer are located is accessed by climbing approximately 18 feet above the floor to a small platform. During power operation this area is a high neutron dose area and has high ambient temperature. According to the licensee, these conditions increase the probability of heat stress, potential fall-related injuries, and impose unnecessary radiation exposure.

3.0 EVALUATION

3.1 Quarterly Gas Calibration

The containment hydrogen analyzer manufacturer has recommended that the calibration of the hydrogen sensor be accomplished quarterly using sample gases containing a known hydrogen concentration. The manufacturer also recommends that the measurement of the RTD and pressure transducer be reviewed quarterly for reasonableness by comparison to other installed plant instrumentation (referred to as a single-point check). The hydrogen sensor calibration and the single-point check of the RTD and pressure transducer do not require entry into the containment. PSEG proposed using readings from temperature and pressure instrumentation located in the containment for the single-point check. The temperature and pressure instrumentation include instruments that are governed by the TS.

The proposed TS would combine the quarterly hydrogen sensor gas calibration and the RTD and pressure transducer single-point checks into a single surveillance requirement referred to as "gas calibration." The gas calibration would be accomplished at least every 92 days. Because the gas calibration does not include a calibration of the RTD and the pressure transducer, it does not fully meet the TS definition of a channel calibration. However, since the RTD and the pressure transducer are only used to compensate indicated hydrogen concentration for temperature and pressure, the proposed quarterly gas calibration will provide reasonable assurance that the hydrogen analyzer will accurately monitor containment hydrogen concentration within the guidelines of RG 1.97 between channel calibrations.

3.2 18-month Channel Calibration

Salem TSs defines a channel calibration as a complete check of the instrument loop, including the sensor. This test verifies that the channel responds to measured parameter with the necessary range and accuracy. The proposed TS change would require, in addition to the gas calibration, that a channel calibration be performed, at a minimum frequency of every refueling outage (18 months), consisting of a calibration of the hydrogen sensor using sample gases containing a known hydrogen concentration, as is performed in the gas calibration. The channel calibration would also include a calibration of the RTD and the pressure transducer using a two-point check. By performing the channel calibration during a refueling outage, entry into the containment at power would not be required, thus reducing the exposure to technicians and the potential for heat stress and fall-related injuries.

The proposed frequency of the containment hydrogen analyzer channel calibration is in agreement with the frequency of the containment hydrogen analyzer channel calibration in NUREG-1431, "Standard Technical Specifications Westinghouse Plants." This frequency is

based, in part, on operating experience and consistency with the typical industry refueling cycle. The staff finds the channel calibration and its associated frequency to be acceptable.

3.3 Staff's Conclusions

Based on its review, the staff concludes that the combined quarterly gas calibration and 18-month channel calibration surveillance tests proposed by PSEG will continue to meet the requirements of 10 CFR 50.44(b)(1) and GDC 13, and are consistent with the guidelines in Chapter 7 of the Standard Review Plan. Therefore, the staff finds that the changes to the containment hydrogen analyzer TS surveillance requirements are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (66 FR 20008). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Barry Marcus

Date: December 17, 2001

PSEG Nuclear LLC

Salem Nuclear Generating Station,
Unit Nos. 1 and 2

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