July 31, 2008

Mr. William Levis
President & Chief Nuclear Officer
PSEG Nuclear LLC – N09
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 – APPROVAL OF REQUEST FOR EXTENSION OF COMPLETION DATE FOR GENERIC LETTER 2004-02 CORRECTIVE ACTIONS (TAC NOS. MC4712 AND MC4713)

Dear Mr. Levis:

By letter dated June 26, 2008, as supplemented by letter dated July 10, 2008, PSEG Nuclear LLC (PSEG) requested an extension to the date to complete certain corrective actions associated with Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," for Salem Nuclear Generating Station, Unit Nos. 1 and 2. Specifically, PSEG requested to extend the due date from June 30, 2008, until December 31, 2008, for completion of the corrective actions and an additional 90 days (i.e., until March 31, 2009) to provide an updated response to the GL.

As discussed in the enclosed evaluation, the Nuclear Regulatory Commission staff concludes that the proposed extension is acceptable. If you have any questions, please contact me at 301-415-1420.

Sincerely,

***/ra/***

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

Docket Nos. 50-272 and 50-311

Enclosure:
Evaluation

cc w/encl: See next page

July 31, 2008

Mr. William Levis
President & Chief Nuclear Officer
PSEG Nuclear LLC – N09
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2 – APPROVAL OF REQUEST FOR EXTENSION OF COMPLETION DATE FOR GENERIC LETTER 2004-02 CORRECTIVE ACTIONS (TAC NOS. MC4712 AND MC4713)

Dear Mr. Levis:

By letter dated June 26, 2008, as supplemented by letter dated July 10, 2008, PSEG Nuclear LLC (PSEG) requested an extension to the date to complete certain corrective actions associated with Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," for Salem Nuclear Generating Station, Unit Nos. 1 and 2. Specifically, PSEG requested to extend the due date from June 30, 2008, until December 31, 2008, for completion of the corrective actions and an additional 90 days (i.e., until March 31, 2009) to provide an updated response to the GL.

As discussed in the enclosed evaluation, the Nuclear Regulatory Commission staff concludes that the proposed extension is acceptable. If you have any questions, please contact me at 301-415-1420.

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

Docket Nos. 50-272 and 50-311

Enclosure:
Evaluation

cc w/encl: See next page

DISTRIBUTION:

| | |
|---|---|
| PUBLIC | RidsAcrsAcnw_MailCTR Resource |
| LPL1-2 Reading | RidsRgn1MailCenter Resource |
| RidsNrrDorlLpl1-2 Resource | RidsNrrDssSsib Resource |
| RidsNrrLAABaxter Resource | RArchitzel, NRR/DSS/SSIB |
| RidsNrrPMREnnis Resource | SSmith, NRR/DSS/SSIB |
| RidsOgcRp Resource | JGolla, NRR/DPR/PGCB |

ADAMS Accession No.: ML082040013 *By memo dated 7/17/08

| OFFICE | LPL1-2/PM | LPL 1-2/LA | SSIB/BC | LPL1-2/BC |
|---|---|---|---|---|
| NAME | REnnis | ABaxter | MScott* | HChernoff (JLamb for) |
| DATE | 7/28/08 | 7/29/08 | 7/17/08 | 7/31/08 |

OFFICIAL RECORD COPY

Salem Nuclear Generating Station, Unit Nos. 1 and 2

cc:

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

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

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

Mr. Carl Fricker
Vice President - Operations Support
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

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

Mr. James Mallon
Manager - Licensing
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

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

Mr. 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

EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR EXTENSION OF COMPLETION DATE

FOR GENERIC LETTER 2004-02 CORRECTIVE ACTIONS

SALEM NUCLEAR GENERATING STATION, UNIT NOS 1 AND 2

DOCKET NOS. 50-272 AND 50-311

By letter dated June 26, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML081910152), as supplemented by letter dated July 10, 2008, PSEG Nuclear LLC (PSEG or the licensee) requested an extension to the date to complete certain corrective actions associated with Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," for Salem Nuclear Generating Station (Salem), Unit Nos. 1 and 2. The stated intent of this extension was to allow PSEG additional time to complete strainer performance testing, chemical testing, final analysis, and all licensing activities to address GL 2004-02. PSEG requested an extension from June 30, 2008, until December 31, 2008, for completion of the corrective actions and an additional 90 days (i.e., until March 31, 2009) to provide an updated response to the GL.

The NRC had previously approved an extension for completion of corrective actions associated with GL 2004-02 for Salem from December 31, 2007, until June 30, 2008 (reference NRC letter dated December 21, 2007, ADAMS Accession No. ML073532115).

PSEG stated in their June 26, 2008, letter that the request for an additional extension is due to a delay in completing vendor testing to determine strainer head losses associated with postulated debris loading of the strainer and incorporation of the results into net positive suction head (NPSH) calculations for the two units. The licensee explained that testing at Control Components Inc. (CCI) is being repeated to provide a prototypical test configuration and to resolve NRC staff concerns with previous testing practices. In addition to the repeated testing, PSEG is planning to perform bench top chemical testing to determine the time at which chemical precipitants may form in the post-loss-of-coolant accident (LOCA) containment sump pool. PSEG stated that the chemical testing is anticipated to show that significant chemical effects will not occur until the sump pool is somewhat subcooled providing additional NPSH margin.

As stated in the June 26, 2008, letter, PSEG is requesting an extension until December 31, 2008, for completion of the following activities:

- Strainer performance testing and test documentation that confirms Salem's debris loading does not adversely impact pump NPSH margins.

- Bench top chemical testing and documentation of the testing to show the timing of precipitate formation in the post-LOCA containment sump fluid. PSEG stated that the combination of the strainer testing results and chemical bench top test results are anticipated to demonstrate that pump NPSH margins are not adversely affected in the post-LOCA environment.

- Following completion of the strainer performance testing and chemical bench top testing, and documentation of these tests, incorporation of the results into the emergency core cooling system (ECCS) NPSH evaluation. The NPSH evaluation is anticipated to be completed by December 31, 2008.

- Submittal of a revised GL 2004-02 response documenting these actions to the NRC not later than March 31, 2009.

The NRC has based its reviews for granting extensions to the due date for completion of GL 2004-02 corrective actions on the criteria stated in SECY-06-0078. Specifically, an extension may be granted if:

- the licensee has a plant-specific technical/experimental plan with milestones and schedule to address outstanding technical issues with enough margin to account for uncertainties, and

- the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded ECCS and containment spray system (CSS) functions during the extension period.

The SECY also states that for proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical improvements to the ECCS sump or materials inside containment to better ensure a high level of ECCS sump performance.

With regard to the first extension criterion, PSEG has provided a plant-specific technical/experimental plan, with milestones and schedules, to complete the GL 2004-02 corrective actions. In light of the new developments, and in order to meet the regulatory requirements, PSEG stated that it has scheduled the following activities:

- Completion of strainer performance testing to support final evaluation of ECCS performance by December 31, 2008.

- Completion of chemical bench top testing and documentation by October 31, 2008.

- Final analysis of ECCS performance incorporating the results of strainer and chemical bench top testing by December 31, 2008.

PSEG stated that it had completed other corrective actions for Salem Unit Nos. 1 and 2 that were included in PSEG's extension request letter dated December 10, 2007 (ADAMS Accession No. ML073531261) and PSEG's GL 2004-02 supplemental response dated February 29, 2008 (ADAMS Accession No. ML080800469).

With regard to the second extension criterion, the licensee stated in its letter dated June 26, 2008, that modifications, mitigation measures, compensatory measures, and/or favorable conditions are in effect at Salem Unit Nos. 1 and 2, minimizing the risk of degraded ECCS and CSS functions during the extension period. The NRC staff evaluation of the previous extension request and interim extension request concluded that PSEG had put mitigation measures in place to adequately reduce risk for the previous requested extension periods (June 30, 2008), as stated in the NRC extension approval letter cited above.

Following receipt of the PSEG extension request letter dated June 26, 2008, the NRC staff conducted a phone call on June 30, 2008, with PSEG personnel to obtain clarification regarding the time required for PSEG to complete the required testing, the technical basis for the testing, and the current test results and how they apply to the NPSH margins at Salem Units 1 and 2. The staff also stated that it expects that PSEG will continue near-term testing until a demonstrated acceptable plant configuration is identified. In addition, the staff stated that it expects that PSEG will expeditiously take the actions necessary so that both units will meet the configuration which has been shown to result in adequate NPSH margins. The staff requested that PSEG provide additional information detailing the contingency measures planned. The staff also requested that PSEG provide the results of strainer head loss testing conducted to date. These requests were sent to the licensee in a draft request for information (RAI) dated June 30, 2008 (ADAMS Accession No. ML081830551). PSEG's letter LR-N08-0160 dated July 10, 2008, provided a response to the NRC's draft RAI. The NRC staff has reviewed the information in PSEG's response and has concluded that the licensee has a reasonable plan for showing adequate ECCS NPSH. Additionally, in the event that testing shows that the current configuration may not result in adequate NPSH, PSEG has contingency plans in place that the licensee expects will resolve sump performance issues.

The NRC staff believes that PSEG has a reasonable plan for Salem that should result in the completion of final GL 2004-02 corrective actions that provide acceptable strainer function with adequate margin for uncertainties. The staff finds that the additional time requested in the June 26, 2008, letter to complete testing and evaluations is considered to be of low safety concern. This finding is based on the mitigation measures and plant improvements already in place, and staff review of the recent testing conducted by PSEG that indicates that NPSH margins will be acceptable (with chemical precipitation, and its additional head loss, delayed until sump pool temperatures are reduced providing the additional required NPSH margin). Based on the licensee having satisfactorily addressed the NRC GL 2004-02 due date extension criteria as discussed above, the NRC staff finds it is acceptable to extend the completion date for GL 2004-02 corrective actions associated with strainer performance testing, chemical bench top testing, final analysis and related NPSH calculations, as described in this enclosure, for Salem Unit Nos. 1 and 2 from June 30, 2008, to December 31, 2008. While the NRC accepts this date as reasonable allowance for contingencies regarding completion of remaining activities to address GL 2004-02, the NRC expects PSEG to place a high priority on completing remaining actions and updating the plants' licensing basis as soon as possible.

The NRC staff expects that PSEG will provide an updated GL 2004-02 supplemental response within 90 days of the completion of the actions described in the extension request, and not later than March 31, 2009.

The NRC staff notes that PSEG's July 10, 2008, letter discusses plans to complete any needed contingent modifications by April 2010. The NRC staff expects PSEG to contact the NRC if the need for additional modifications is identified. This letter should not be construed as approval of the proposed April 2010 date.

Principal Contributor: S. Smith