



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 15, 2015

Mr. Robert Braun
President and Chief Nuclear Officer
PSEG Nuclear LLC – N09
P.O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NO. 1 – LICENSE
RENEWAL COMMITMENT IMPLEMENTATION TO RENEWED FACILITY
OPERATING LICENSE CONDITION 2.C.21 (TAC NO. MF6126)

Dear Mr. Braun:

By letter dated March 4, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15069A110), PSEG Nuclear LLC (PSEG or the licensee) submitted a letter in accordance with the Renewed Facility Operating License (RFOL) Condition 2.C.21 for Salem Nuclear Generating Station, Unit No. 1 (Salem). The RFOL for Salem was issued on June 30, 2011 (ADAMS Accession No. ML11166A135).

RFOL Condition 2.C.21 states:

PSEG Nuclear LLC shall take one core sample in the Unit 1 spent fuel pool west wall, by the end of 2013, and one core sample in the east wall where there have been indications of borated water ingress through the concrete, by the end of 2015. The core samples (east and west walls) will expose the rebar, which will be examined for signs of corrosion. Any sample showing signs of concrete degradation and/or rebar corrosion will be entered into the licensee's corrective action program for further evaluation. PSEG Nuclear LLC shall submit a report in accordance with 10 CFR 50.4 no later than three months after each sample is taken on the results, recommendations, and any additional planned actions.

In its letter dated March 4, 2015, PSEG outlined the results of petrographic examination findings from the east wall concrete core bore, as well as findings from visual examinations of the reinforcement for corrosion. PSEG provided the results of the examination findings from the west wall concrete bore in a letter dated November 12, 2013 (ADAMS Accession No. ML13317B684). The U.S. Nuclear Regulatory Commission (NRC) staff's evaluation of the condition of the west wall bored concrete and the exposed steel reinforcement was addressed previously by a letter dated May 8, 2014 (ML14100A180).

According to the March 4, 2015, letter, PSEG obtained a 5-inch (12.7 centimeter (cm)) long by 4-inch (10.2 cm) diameter core bore from the Salem spent fuel pool (SFP) east wall in the vicinity of the construction joint. PSEG stated that the petrographic examination was visual and in accordance with American Society for Testing and Materials C856. The sample obtained demonstrated that the extracted concrete is in good condition and the cement paste was unaffected by chemical attacks, showing no signs of softening, degradation, or dissolution. The slightly yellow/orange discoloration that was observed within 0.039 inch (1-mm) of the

construction joint was attributed by PSEG to carbonation of the floor slab surface during original construction. PSEG stated that petrographic examination did not identify any signs of degradation related to ingress of borated water through the concrete. PSEG concluded that the structural performance of the Salem fuel handling building has not been impacted due to leakage of SFP borated water. In addition to the core sample, PSEG excavated a small area of the east wall in the vicinity of the lateral construction joint to expose and assess the condition of a portion of the reinforcing steel. PSEG stated that the exposed reinforcement steel had no visible signs of corrosion. The licensee summarized the findings for concrete and rebar examination by stating, in part, that, "[t]he removal and examination of the core sample in the Unit 1 spent fuel pool east wall did not show any indications of concrete degradation due to borated water ingress through the concrete. Also, the exposed rebar did not show signs of aging-related corrosion."

NRC staff reviewed the licensee's letter dated March 4, 2015, documenting its 2015 actions and results related to RFOL Condition 2.C.21. The NRC staff noted that the petrographic examinations of the concrete showed that it is in good condition with no signs of degradation related to chemical attacks due to borated water leakage. The staff also noted that the licensee's visual examination of the exposed reinforcing steel did not show signs of degradation due to corrosion.

Based on its review of the licensee's examination of the concrete core bore sample and steel reinforcement on the Salem SFP east wall, the NRC staff finds that this examination provides reasonable assurance that the examined materials are in good condition. Further, there are no findings of significance that have a bearing on the aging management of concrete or reinforcing steel for further evaluation.

Based on its review, the NRC staff concludes that the licensee has provided the required information and completed the actions required by RFOL Condition 2.C.21 for 2015.

This completes the NRC's staff review of TAC No. MF6126.

R. Braun

- 3 -

If you have any questions concerning this matter, please contact me at 301-415-1603 or Carleen.Parker@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Carleen J. Parker", written over a faint circular stamp.

Carleen J. Parker, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-272

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R. Braun

-3-

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Sincerely,

/RA/

Carleen J. Parker, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
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*by memo dated 8/06/2015

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