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Salem Generating Station, Units 1 and 2  
Facility Operating License Nos. DPR-70 And DPR-75  
NRC Docket Nos. 50-272 and 50-311

Subject: 2006 ANNUAL ENVIRONMENTAL OPERATING REPORT

The attached 2006 Annual Environmental Operating Report is hereby submitted pursuant to Subsection 5.4.1 of the Environmental Protection Plan (non-radiological) for Salem Generating Station, Unit Nos. 1 and 2. The Environmental Protection Plan is Appendix B to Facility Operation License DPR-70 and DPR-75 (Docket Nos. 50-272 and 50-311).

If you have any questions or require additional information, please do not hesitate to contact Mr. Frederic D. Bevington at (856) 339-1807.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Fricker", written over a horizontal line.

Carl J. Fricker  
Plant Manager - Salem  
PSEG Nuclear LLC

Attachment (1)

JEQS

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2006 ANNUAL ENVIRONMENTAL OPERATING REPORT  
(NON-RADIOLOGICAL)  
January 1 through December 31, 2006

SALEM GENERATION STATION  
UNIT NOS. 1 AND 2  
DOCKET NOS. 50-272 AND 50-311  
OPERATING LICENSE NOS. DPR-70 AND DPR-75

PSEG NUCLEAR LLC  
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APRIL 2007

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## 1.0 INTRODUCTION

This 2006 Annual Environmental Operating Report (AEOR) is submitted in accordance with Section 5.4.1 of the Salem Generating Station Unit No. 1 and 2, Environmental Protection Plan (EPP), non-radiological (Appendix B to Unit Nos. 1 and 2, Facility Operating License Nos. DPR-70 and DPR-75, Docket Nos. 50-272 and 50-311, respectively).

## 2.0 ENVIRONMENTAL PROTECTION ACTIVITIES

### 2.1 AQUATIC MONITORING – SUMMARY AND ANALYSES

Subsection 4.2.1 of the EPP references the Clean Water Act as a mechanism for protecting aquatic biota through water quality monitoring. The United States Nuclear Regulatory Commission (USNRC) relies on the State of New Jersey, acting under the authority of the Clean Water Act, to insure applicable requirements for aquatic monitoring are implemented. The New Jersey Department of Environmental Protection (NJDEP) is the State's regulatory agency.

The NJDEP requires as part of the New Jersey Pollutant Discharge Elimination System (NJPDES) permit program that effluent monitoring be performed, with the results summarized and submitted monthly on Discharge Monitoring Report (DMR) forms. The monitoring is intended to determine compliance with the effluent limitations of the station's NJPDES permit (No. NJ0005622). PSEG has reviewed the DMRs corresponding to the 2006 AEOR reporting period and has determined that three deviations had occurred. These deviations are listed in this report under Section 5, Nonroutine Reports. PSEG has observed no evidence of trends towards damage to the environment. Copies of monthly DMRs are routinely sent to USNRC's Document Control Desk, and additional copies are available upon request.

While the USNRC relies on the State of New Jersey and the NJDEP for protection of the water quality, the National Marine Fisheries Service (NMFS) maintains regulatory authority with respect to certain migratory threatened and endangered aquatic species. As required by Section 4.2.1 of the EPP, Salem Generating Station adhered to the recommendations delineated in the "Conservation Recommendations" of the Section 7 Consultation Biological Opinion, dated May 14, 1993, as follows:

1. PSEG, in conjunction with the NMFS, completed the research program to determine whether the station provides features attractive to sea turtles in a study entitled "Evaluation of Macrohabitat Utilization by Loggerhead Sea Turtles In Delaware Estuary Using Sonic and Satellite Tracking Techniques", dated

June 1997, that was sent to NRC in PSEG Letter LR-E970424 from D.R. Powell to the NRC Document Control Desk, dated July 30, 1997. The study concluded that sea turtles make use of the entire Delaware Estuary macrohabitat and are not attracted to the Salem Circulating Water Intake Structure.

2. Records could not be located documenting and forwarding results to NRC for PSEG's historic benthic survey data reviews to identify prey density and distribution at various sites in the Delaware Bay and to clarify the potential for attractions of invertebrates to the site. This item has been entered into the corrective actions program. In accordance with EPP, Section 5.4.1, the missing results will be submitted as soon as possible in a supplementary report.
3. PSEG completed the distribution studies for sea turtles in the Delaware Bay in the study cited in Item 1 above.
4. Records could not be located documenting and forwarding results to NRC that PSEG had reached an agreement with the State of New Jersey Endangered Species and Non-Game Commission regarding the protocol for conducting pesticide and heavy metal sampling during necropsy procedures on lethal turtle takes. This item has been entered into the corrective actions program. In accordance with EPP, Section 5.4.1, the missing results will be submitted as soon as possible in a supplementary report.
5. Per the current Incidental Take Statement, dated January 21, 1999, Terms and Conditions, Item 6, the Conservation Recommendation to meet annually with the NMFS to review incidental takes, assess the status of sea turtles in the Delaware Bay and to reconsider the Conservation Recommendations accordingly was revised to read that the NMFS, NRC and PSEG staff will meet "as appropriate" to review incident reports, identify trends in sea turtle and shortnose sturgeon takes and review Conservation Recommendations that may improve understanding of listed species' biology in the region. There were no meetings held in 2006.

As required by Section 4.2.1 of the EPP, Salem Generating Station also adhered to the requirements delineated in the "Reasonable and Prudent Measures" and "Terms and Conditions" sections of the current Incidental Take Statement, dated January 21, 1999. In 2006, no shortnose sturgeon or sea turtles were recovered at the circulating water intake trash bars. This is consistent with the results from 2005.

## 2.2 TERRESTRIAL MONITORING – SUMMARY AND ANALYSES

As addressed in Section 4.2.2 of the EPP, Terrestrial Monitoring is not required.

### 3.0 EPP NONCOMPLIANCES

Subsection 5.4.1 of the EPP requires a list of EPP noncompliances and the corrective actions taken to remedy them. There were no EPP noncompliances during 2006.

### 4.0 CHANGES IN STATION DESIGN OR OPERATION

Pursuant to the requirements of Section 3.1 of the EPP, station changes to design or operations, as well as any tests and experiments, made in 2006 were reviewed for potential environmental impact. None of these changes posed a potential to significantly affect the environment, created an unreviewed environmental question or resulted in a change to the EPP.

### 5.0 NONROUTINE REPORTS

#### 5.1 2006 NONROUTINE REPORTS

Subsection 5.4.1 of the EPP requires a list of all nonroutine reports (submitted in accordance with Subsection 5.4.2 of the EPP) be included as part of the Annual Environmental Operating Report. Salem Generating Station experienced no unusual or important events (in accordance with Subsection 4.1 of the EPP) that indicated or could have resulted in a "significant environmental impact" during the 2006 reporting period. However, the following events were reported to other Federal, State or local agencies in accordance with their reporting requirements, and copies of those reports were provided to the USNRC at the same time:

- On May 10, 2006, approximately 40,000 gallons of secondary condensate was released from a relief valve inside the Unit 1 Condensate Polisher Building (CPB). Of this amount, approximately 2,000 gallons containing a concentration of 3 ppm hydrazine discharged to the Delaware River through the DSN 488 outfall, and 2,000 gallons containing concentrations of 3 ppm hydrazine and 40 ppm ammonia infiltrated into the ground around the outside of the building. The remainder was captured inside various plant systems and structures or removed as standing water from the ground. The cause of the event was human error while placing a Condensate Polisher into purge rinse.
- On May 14, 2006, approximately 1,000 gallons of Service Water containing a concentration of 3000 ppm Total Residual Chlorine (TRC) was discharged to the Delaware River through the DSN 488 outfall. The cause of the event was a through-wall failure of a Service Water isolation valve with concurrent failure of a check valve.

- On June 21, 2006, approximately 5 gallons of 15% sodium hypochlorite solution was spilled to the Delaware River through the intake bay of a secured Circulating Water pump. The cause of the event was human error while restoring the Service Water Chlorination System back to service after maintenance.

Corrective actions for the above events have been completed. No visible impacts to the environment were observed.

On 8/25/06, the NJDEP, Bureau of Compliance and Enforcement, issued two Administrative Orders and Notices of Civil Administrative Penalty Assessments (EA ID # PEA060001 and PEA060002) with regard to the above releases. PSEG Nuclear submitted Requests for Adjudicatory Hearing to appeal the orders.

## 5.2 ONGOING ISSUES FROM PREVIOUS NONROUTINE REPORTS

Groundwater monitoring and product recovery activities to remediate an underground leak of spent fuel pool water containing tritium from the Unit 1 Fuel Handling / Auxiliary Building seismic gap first identified on September 18, 2002 continued through 2006 in accordance with the scope of work proposed in the Remedial Action Work Plan, approved by the NJDEP - Bureau of Nuclear Engineering (BNE) in November 2004. Product recovery activities involved the use of both a fixed groundwater extraction system and a mobile groundwater recovery unit. During the year, tritium levels in the monitoring wells have decreased significantly, and for the first time have been below 100,000 pCi/L in all wells. New deep and shallow monitoring wells were installed in 2006 at BNE's request to provide additional data. There is no evidence that tritium contaminated water above permissible levels has migrated to the station boundary or the Delaware River.

Groundwater monitoring and product recovery activities to remediate an underground diesel fuel oil leak first identified on August 2, 2004 continued through 2006 in accordance with the scope of work proposed in the Remedial Investigation Work Plan, dated December 2004 (NJDEP Incident Number 04-08-02-2350-16). Product recovery activities involve the use of a Spill Buster® unit, a passive oil skimmer, or absorbent socks at the monitoring wells. A new groundwater monitoring well was installed in 2006 at NJDEP's request to provide additional horizontal delineation data. Groundwater sample results continue to remain below the Ground Water Quality Criterion (GWQA) for Class IIA aquifers.

Copies of the progress reports for either of the above remediation activities are available upon request.