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Gentlemen:

**2005 ANNUAL ENVIRONMENTAL OPERATING REPORT  
SALEM GENERATING STATION, UNIT NOS. 1 AND 2  
FACILITY OPERATING LICENSE NOS. DPR-70 AND DPR-75  
DOCKET NOS. 50-272 AND 50-311**

The attached 2005 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).

Sincerely,

A handwritten signature in black ink, appearing to read "Carl J. Fricker".

Carl J. Fricker  
Salem Plant Manager

/tjs  
Attachment (1)

Handwritten initials "JES" in black ink.

**MAR 29 2006**

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**2005 ANNUAL ENVIRONMENTAL OPERATING REPORT  
(NON-RADIOLOGICAL)  
January 1 through December 31, 2005**

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

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**APRIL 2006**

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	INTRODUCTION	1
2.0	ENVIRONMENTAL PROTECTION ACTIVITIES	1
2.1	AQUATIC ISSUES	1
2.2	TERRESTRIAL ISSUES	4
3.0	EPP COMPLIANCE STATUS	4
3.1	EPP NONCOMPLIANCES	4
3.2	REVIEW	4
4.0	CHANGES IN STATION DESIGN OR OPERATION	4
5.0	NONROUTINE REPORTS	4

## **1.0 INTRODUCTION**

This 2005 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).

This is the 16th AEOR submitted under the EPP and covers Salem Unit No. 1 and Salem Unit No. 2 for the period from January 1 through December 31, 2005. During 2005, Salem Unit No. 1 and 2 generated a combined total of 18,255,437 megawatt-hours of net electrical energy.

As required by Subsection 5.4.1 of the EPP, we have included summaries and analyses of the results of all required environmental protection activities. This information is described in Section 2.0. Section 3.0 addresses the issues of EPP compliance. Changes to station design or operation and the review for potentially significant unreviewed environmental questions are addressed in Section 4.0. Unusual and/or important environmental events are discussed in Section 5.0.

## **2.0 ENVIRONMENTAL PROTECTION ACTIVITIES**

### **2.1 AQUATIC MONITORING ISSUES**

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). We have reviewed the DMRs corresponding to the 2005 AEOR reporting period and have determined that one significant deviation has occurred. We have 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.

Early on April 8, 2005 while in a plant shutdown, approximately 5,000 gallons of water from the 22 Steam Generator leaked through a check valve in the system. The water was released out of a vent on to the Auxiliary Building roof. From the roof, the water passed through a roof drain, to the station storm drain system and ultimately to the Delaware River. The water, when analyzed, had a concentration of 7 ppm of hydrazine (CAS # 302-01-2). The total amount of hydrazine released was approximately 2 ounces. The New Jersey Department of Environmental Protection (NJDEP) levied a \$ 7,500 civil administrative penalty for this discharge on August 29, 2005.

On June 29, 2001, the New Jersey Department of Environmental Protection (NJDEP) issued a Final New Jersey Pollutant Discharge Elimination System (NJPDES) Permit that authorizes the continued discharge of cooling water and other effluents from the Salem Generating Station to the Delaware River. The Permit contains conditions and limitations for continued compliance with the federal and state Clean Water Act (CWA) and the NJDEP's regulations. The Permit includes the NJDEP resolution of comments presented by PSEG, regulatory agencies, environmental groups and the public.

The NJPDES Permit retains substantially similar effluent limitations and conditions, including chemical-specific requirements and system operational requirements. The thermal variance for Salem under Section 316(a) of the CWA is renewed, with continuation of the existing thermal effluent limitations applicable to Salem's current cooling water system. The NJDEP again determined that the thermal discharge is expected to assure the protection and propagation of the balanced indigenous population of aquatic resources in the Delaware Estuary and has included requirements for the renewal of the Section 316(a) variance in connection with the next renewal application for the Station's NJPDES permit. A reassessment of the factors considered by the NJDEP is required during the next NJPDES permit renewal.

The NJDEP also determined that the operation of the Station's existing intake structure (which incorporates the flow limitation and modified intake screens as required by the 1994 permit), in conjunction with additional studies being proposed, reflects Best Technology Available (BTA) to address impacts under Section 316(b) of the CWA. The permit requires an integrated study of the feasibility of "Multi-Sensory Hybrid Intake Protection Technology" including any combination of sound, light repellant/diversion, and air bubble curtain technologies as well as ancillary effects of those technologies. Specific biological studies include the requirement to evaluate the effects of the fish return system and impingement sampling on fish survival, the relative vulnerability for specific Representative Important Species (RIS), and the fish return trough velocity compared with sampling trough velocity. The results of these evaluations and any proposed study or redesign of the fish

return and sampling systems will be submitted to the NJDEP who will then determine if new Permit requirements are appropriate.

The Permit requires the continued implementation of the wetland restoration/preservation program and requires the acquisition and preservation of additional lands for any acreage that may be needed to offset acreage deemed "failed" by the NJDEP based on established restoration criteria, as well as development of Management Plans for the replacement acreage. The Permit requires continued operation and maintenance of the installed fish ladders, and continued stocking of impoundments at fish ladder sites.

The Permit requires continuation of the extensive biological monitoring program in the estuary, at the Station, and for the fish ladders and the wetland restoration sites. The Permit also requires continuation of the existing estuarine and fish ladder monitoring programs, continuation of the station intake monitoring (impingement and entrainment) including optimization of sampling frequency and sampling methodology, an evaluation of the appropriateness of the RIS, continued monitoring relative to the wetland restoration activities (detrital and fish) and other special monitoring studies required by the NJDEP. The NJDEP is also requiring that PSEG Nuclear conduct supplemental analyses of Station losses using additional model analyses, alternative RIS, enhanced uncertainty analysis, different variables, customized intake protection strategies, and characterization of loss estimate uncertainty. The Final Permit also requires an evaluation of the hydrodynamics in the intake area to assess the flow field, potential vortices, and bathymetrically induced eddys. In addition, the Final Permit contains funding provisions for construction and installation of artificial reefs.

The Permit requires an Estuary Enhancement Program Advisory Committee (EEPAC) that provides similar expertise previously provided by the Monitoring Advisory Committee and the Management Plan Advisory Committee in a combined committee to provide coordinated technical advice relative to both the management plans and biological monitoring program. The EEPAC includes representatives of regulatory agencies, independent scientists, and county governments and have been meeting at least twice per year with at least one meeting to include a tour of wetland restoration sites.

Additionally, the Delaware River Basin Commission (DRBC) renewed the Docket Decision that incorporates Salem into the Comprehensive Plan for the Delaware River Basin. The revised Docket Decision includes no significant modifications and will expire in September 2026.

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 Amendments 129 and 108 to the Facility Operating License Nos. DPR-70 and DPR-75 and the Section 7 Consultation, Biological Opinion, Salem Generating Station conducted inspections of the circulating water intake trash bars at least every two hours during the 2005 sea turtle season. In 2005, no shortnose sturgeon were recovered at the circulating water intake trash bars. In 2005, no sea turtles were recovered from the circulating water intake trash bars.

## **2.2 TERRESTRIAL ISSUES**

PSEG NUCLEAR continues to monitor the osprey population in a joint effort with the NJDEP.

## **3.0 EPP COMPLIANCE STATUS**

### **3.1 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 non-compliances during 2005.

### **3.2 REVIEW**

Subsection 5.1 of the EPP for Salem Generating Station, Unit Nos. 1 and 2, requires that an independent review of compliance with the EPP be maintained and made available for inspection. The EPP was reviewed as part of the Quality Assurance Assessment Program in 2003. The EPP is scheduled to be reviewed in 2006.

## **4.0 CHANGES IN STATION DESIGN OR OPERATION**

Pursuant to the requirements of Section 3.1 of the EPP for Salem Unit Nos. 1 and 2, station design changes and operation performance of tests or experiments, for the AEOR covered time period, were reviewed for potential environmental impact. None of the recommended changes posed a potential to significantly affect the environment, therefore, none involved an unreviewed environmental question or a change in the EPP. The only change to the facility was the addition of a reverse osmosis unit to supplement the Demineralizers in the water treatment plant. The addition of this system was approved by the NJDEP and did not involve an unreviewed environmental question.



## 5.0 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. During 2005, PSEG began the pumping/remediation system to recover the tritium, which is in the groundwater around Salem Station, in accordance the Remedial Action Work Plan approved by the NJDEP in 2004. During the year, the tritium levels in the monitoring wells have decreased. There is no evidence that tritium contaminated water above permissible levels has migrated to the station boundary or the Delaware River.

The ground water remediation of the fuel oil at Salem Station continued in 2005. During 2005, PSEG initiated groundwater monitoring and product recovery activities in accordance with the scope of work proposed in the remedial investigation report. (Incident Number 04-08-02-2350-16). This project is associated with the recovery of diesel fuel oil, which leaked out of an underground pipe during 2004. The product recovery activities relate to the use of a *Spill Buster*® unit, a passive oil skimmer, or absorbent socks at the monitoring wells. The ground water results remain below the Ground Water Quality Criterion (CWQA) for Class IIA aquifers.

Copies of either of the independent project progress reports are available upon request.

Salem Generating Station experienced no unusual or important events that indicated or could have resulted in a "significant environmental impact" during the 2005 reporting period.