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APR 26 2010

U. S. Nuclear Regulatory Commission
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Rockville, MD 20852

SUSQUEHANNA STEAM ELECTRIC STATION
ANNUAL ENVIRONMENTAL OPERATING REPORT
(NON-RADIOLOGICAL)
PLA-6604

Docket Nos. 50-387
and 50-388

The Susquehanna Steam Electric Station Annual Environmental Operating Report (Non-Radiological) is hereby submitted for the calendar year 2009 in accordance with the Environmental Protection Plan.

Should you have any questions or require additional information, please contact Mr. Michael H. Crowthers, Manager – Nuclear Regulatory Affairs at (610) 774-7766.

T. S. Rausch

Attachment

Copy: Mr. S. J. Collins, NRC Region I, Regional Administrator
Ms. C. Copeyon, U. S. Dept. of Interior Fish and Wildlife Service
Mr. P. W. Finney, NRC Sr. Resident Inspector
Mr. R. V. Guzman, NRC Sr. Project Manager
Mr. R. R. Janati, DEP/BRP

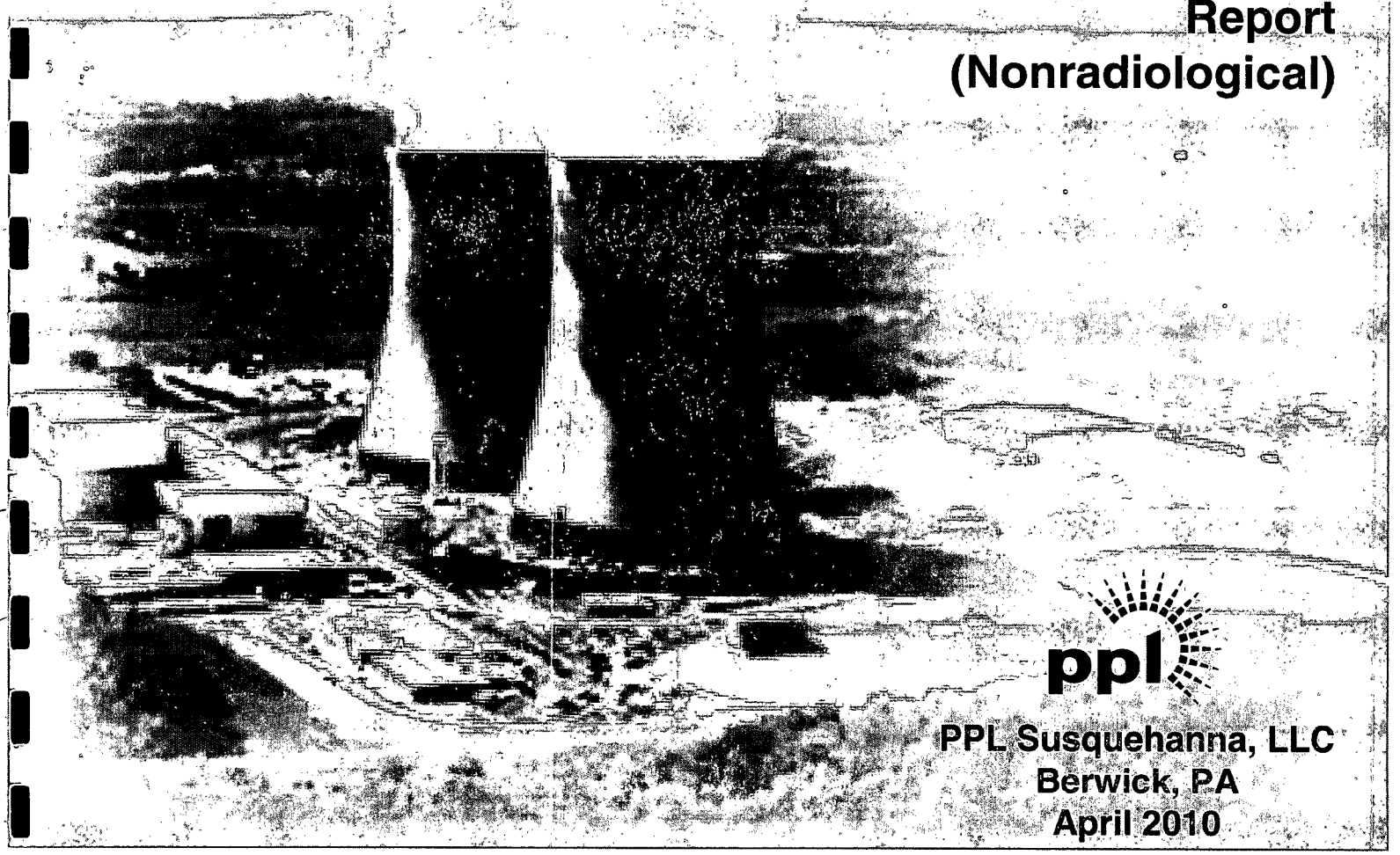
IE25
NRR

Susquehanna Steam Electric Station

Units 1 & 2

2009 ANNUAL REPORT

Annual Environmental Operating Report (Nonradiological)



PPL Susquehanna, LLC
Berwick, PA
April 2010

Susquehanna Steam Electric Station
Units 1 & 2

2009
ANNUAL ENVIRONMENTAL OPERATING REPORT
(NONRADIOLOGICAL)

PPL Susquehanna, LLC
Berwick, PA
April 2010

SUSQUEHANNA STEAM ELECTRIC STATION

ANNUAL ENVIRONMENTAL OPERATING REPORT (NONRADIOLOGICAL)

2009

Prepared by: _____ Date: 4/6/2010
Curtis H. Saxton
Supervisor – Services & Programs

Reviewed by: Raymond E. Dueller for B.E. Rhoads Date: 4/6/2010
Bruce E. Rhoads
Manager – Plant Chemistry / Environmental

Approved by: _____ Date: 4/6/2010
J. M. Helsel
VP – Nuclear Operations

Susquehanna Steam Electric Station
Units 1 & 2

2009
ANNUAL ENVIRONMENTAL OPERATING REPORT (NONRADIOLOGICAL)

Facility Operating License Nos. NPF-14 & NPF-22
Docket Nos. 50-387 & 50-388

Prepared by
Plant Chemistry
PPL Susquehanna, LLC
Berwick, PA
April 2010

FOREWORD

The Susquehanna Steam Electric Station (Susquehanna SES) consists of two boiling water reactors each with about 1250 megawatts electrical (MWE) net electrical capacity located in Salem Township, Luzerne County, Pennsylvania. The site consists of approximately 2,355 acres located along the North branch of the Susquehanna River approximately five miles northeast of Berwick, Pennsylvania; 716 acres of which, mostly undeveloped and recreational lands, are located on the East Side of the Susquehanna River in Conyngham and Hollenback Townships. Under terms of an agreement finalized in January 1978, 90% of the Susquehanna SES is owned by PPL Susquehanna, LLC (Licensee) and 10% by the Allegheny Electric Cooperative, Inc.

This report discusses environmental commitments and impacts from January 1, 2009 through December 31, 2009. In summary it documents that environmental commitments were met and that there was no significant adverse environmental impact from station operation.

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1.0 OBJECTIVE

The Licensee has developed procedures and guidelines to ensure that operation of Susquehanna SES does not adversely affect the environment in the vicinity of the station. Also, these procedures allocate responsibilities and define interfaces necessary to monitor environmental impacts. They include coordination of U.S. Nuclear Regulatory Commission (NRC) requirements with other federal, state, and local requirements for environmental protection.

The objective of this 2009 Annual Environmental Operating Report (Nonradiological) is to provide a summary of both environmental programs and procedures. This report is required by the Final Environmental Statement (FES) for the operation of the Susquehanna SES, Unit 1 and 2, NUREG-0564 June 1981, and Appendix B - Environmental Protection Plan (EPP) to Operating Licenses No. NPF-14 and No. NPF-22. The 2009 report is the 27th Annual Environmental Operating Report (Nonradiological) submitted to meet EPP requirements.

The Licensee submitted an Environmental Report-Operating License Stage for Susquehanna SES to the NRC in May 1978. This report reviewed the results of the preoperational environmental programs and described the preoperational and proposed operational environmental monitoring programs. The NRC and other agencies reviewed this report and made recommendations for operational environmental monitoring programs which were listed in the FES.

2.0 ENVIRONMENTAL ISSUES

2.1 Aquatic Issues

The aquatic monitoring program for operation of the Susquehanna SES is divided into two parts. Part 1 includes effluent monitoring required by a National Pollutant Discharge Elimination System (NPDES) permit issued by the Pennsylvania Department of Environmental Protection (PaDEP). Monthly discharge monitoring reports are submitted to the PaDEP as part of the permitting requirements. The station's operational NPDES permit No. PA-0047325 was reissued on September 1, 2005, and expires on August 31, 2010. Part 2 of the aquatic monitoring program deals with programs listed in the FES or recommended by the PaDEP or U.S. Fish and Wildlife Service.

The PaDEP is responsible for regulating the water quality permit for the Susquehanna SES. The NPDES permit deals with discharge parameters for the Susquehanna SES Sewage Treatment Plant, Cooling Tower blowdown, and miscellaneous low volume waste discharges. The Cooling Tower blowdown also includes in-plant process streams which discharge to the Susquehanna River. Various low volume waste sumps discharge to the storm sewers which flow into Lake Took-A-While, and eventually into the Susquehanna River. A copy of the NPDES permit was provided to the NRC in 2005 (PLA-5952 September 2, 2005).

American Shad

American shad (*Alosa sapidissima*) fry were not stocked in the spring of 2009 upriver from the Susquehanna SES intake. Therefore, juvenile American shad impingement monitoring was not conducted at the intake during the fall of 2009.

Biofouling Mollusk Monitoring

The biofouling mollusk monitoring program continued at the Susquehanna SES in 2009. Since the arrival of Asian clams in the vicinity of the plant, the program continues to monitor mollusks by periodic artificial substrate inspections at the River Intake Building and the Emergency Service Water Spray Pond. The spray pond is also inspected annually via scuba. High water throughout 2009 prevented the inspection of river substrates. It is expected, however, that while the Asian clam is present in the vicinity of the plant and southward in the river, its densities are still likely to be highly variable.

Zebra mussels have now been reported in the Susquehanna River to the north and south of the plant. It is not known, however, how close this potential biofouler is to the immediate plant vicinity.

2.2 Terrestrial Issues

2.2.1 Studies Previously Completed

Terrestrial environmental studies completed prior to 1989 included Cooling Tower bird impaction and sound level surveys.

2.2.2 Sound Level Survey

Sound level surveys were conducted during preoperation and operational periods and are completed. There were no noise complaints received during 2009.

2.2.3 Maintenance of Transmission Line Corridors

Transmission line corridor vegetation maintenance and inspection records are maintained by the Project and Contract Management department of PPL Electric Utilities and are available upon request. There were no adverse environmental impacts to transmission corridors reported in 2009. Records will be maintained for five years.

2.3 Cultural Resources Issues

Environmental Protection Plan actions required to satisfy Title 36, Code of Federal Regulations Part 800, relating to archeological sites, were completed in 1987. The Advisory Council on Historic Preservation (ACHP), in accordance with 36 CFR 800.6 (a)(1), approved the NRC's determination of "no adverse effect" for archeological sites SES-3, SES-6, SES-8, and SES-11 located on the Licensee's property (NRC letter dated October 28, 1987, to ACHP).

As part of the determination-of-effect process, the Licensee committed to and is taking appropriate measures to mitigate impacts from plant maintenance and operation to sites SES-3, SES-6, SES-8, SES-11 and 36LU43. There was no impact to these sites from plant maintenance and operation in 2009.

As a result of License Renewal reviews additional programmatic elements to address protection of cultural resource have been developed. This will allow us to anticipate and prevent impacts to unknown cultural resources that could be affected by station activities.

3.0 CONSISTENCY REQUIREMENTS

3.1 Plant Design and Operation

In accordance with the Environmental Protection Plan (EPP), the Licensee shall prepare and record an environmental evaluation of proposed changes in plant design, operation, or performance of any test or experiment which may significantly affect the environment. Before initiating such activities, the Licensee shall provide a written evaluation and obtain prior approval from the Director, Office of Nuclear Reactor Regulation. Criteria for the need to perform an environmental evaluation include: (1) a significant increase in any adverse environmental impact previously evaluated by the NRC or Atomic Safety and Licensing Board, (2) a significant change in effluent or power level, or (3) a matter not previously evaluated which may have a significant adverse environmental impact.

The EPP requires that if an activity meets any of the criteria to perform an environmental evaluation, the NRC will be notified. If the change, test, or experiment does not meet any of these criteria, the Licensee will document the evaluation and allow the activity to occur.

During operation of the Susquehanna SES in 2009, there were five proposed activities that the Licensee reviewed as part of the unreviewed environmental question program. None of these activities were determined to involve an unreviewed environmental question or require prior NRC notification. The activities reviewed were:

1. Security upgrades to North Storm Drains.
2. C-1 Pond access road maintenance.
3. Installation of Firing Range Rip-Rap.
4. Installation of concrete steps for North Stormdrain Outfall.
5. Removal of Black Locust Trees along Riverlands Canal.

3.2 Reporting Related to NPDES Permits and State Certifications

There were no noncompliances or special reporting requirements associated with implementation of NPDES Permit No. PA-0047325.

The Susquehanna SES has an NPDES permit; therefore, state certification pursuant to Section 401 of the Clean Water Act is not required.

3.3 Changes Required for Compliance with Other Environmental Regulations

During NRC review of the Susquehanna SES License Renewal Application recommendations were made to enhance environmental program elements related to protection of endangered species and protection of cultural resources. In 2009, procedural guidance was developed for further review and control of operational impacts in these areas. These program enhancements have been issued and are fully implemented.

4.0 ENVIRONMENTAL CONDITIONS

4.1 Unusual or Important Environmental Events

During 2009, there was one operating occurrence, described below, reviewed as part of the significant environmental event evaluation program. There were no significant or adverse environmental effects related to station operation and there were no EPP noncompliances.

1. A significant environmental event evaluation was prepared for emergency tree trimming on the Susquehanna Sunbury #2, 500kv transmission line. This trimming was conducted on August 25, 2009 and involved the removal of 4 red oak trees (smooth bark 12-24" d.b.h.) to comply with FERC transmission line reliability standards. This was conducted within the quiet period (April 1 – November 15) established for protection of the Indiana Brown Bat. A biological survey was conducted which indicated there was very low probability of any impact and there was no evidence of any mortality, injury or detrimental effect to a member of an endangered species. Procedural guidelines for emergency tree cutting have been established including follow-up reporting via this report. This occurrence was determined not to involve a significant environmental event.

4.2 Environmental Monitoring

4.2.1 General Monitoring

With the exception of aquatic monitoring required for compliance with the NPDES permit which continues during operation of the station, all monitoring of station operational impacts on aquatic and terrestrial biota listed in the FES and Appendix B of the operating license have been completed.

4.2.2 Maintenance of Transmission Line Corridors

In 2009, the Project and Contract Management department of PPL Electric Utilities maintained transmission line vegetation maintenance and inspection records.

5.0 ENVIRONMENTAL PROTECTION PLAN REPORTING REQUIREMENTS

5.1 Review and Audit

The Licensee has established procedures for an independent group to review and audit compliance with the EPP. Audits of EPP compliance are conducted by Quality Assurance. The Manager-Quality Assurance is responsible for verifying compliance with the EPP. The Vice President-Nuclear Operations is responsible for environmental monitoring and for providing any related support concerning licensing. The Manager – Plant Chemistry / Environmental is responsible for day-to-day environmental monitoring.

The Auditing Organization Chart (Fig. 5.1-1) lists the groups utilized in reviewing and auditing of the Susquehanna SES environmental programs as well as those responsible for managing these programs. PPL's Senior Director of Environmental Management is available to provide auditing support as necessary.

An audit of compliance with the EPP program was conducted during 2008 as part of a regularly scheduled Chemistry Program Audit. There were no issues, findings or noncompliances identified as a result of this effort. The program was determined to be effective and well implemented.

5.2 Records Retention

Records and logs relative to environmental aspects of plant operation and audit activities are retained in the Nuclear Records System. This system provides for review and inspection of environmental documents, which are available to the NRC upon request.

All records concerning modifications of plant structures, systems and components which are determined to potentially affect the continued protection of the environment are retained for the life of the plant. All other records, data, and logs relating to the environmental programs and monitoring are retained for at least five years or, where applicable, in accordance with the requirements of other agencies. Transmission line corridor vegetation maintenance records are maintained by PPL Electrical Utilities per section 2.2.3 of this report.

5.3 Changes in Environmental Protection Plan

No changes were made to the EPP during 2009.

5.4 Plant Reporting Requirements

5.4.1 Routine Reports

This Annual Environmental Operating Report (Nonradiological) was prepared to meet routine reporting requirements of the EPP for 2009. It provides summaries and analyses of environmental protection activities required in Subsection 4.2 of the EPP for the reporting period.

A letter was received November 24, 2009 from the NRC, issuing Renewed Facility Operating License Nos. NPF-14 and NFP-22 for the Susquehanna Steam Electric Station (SSES) Units 1 and 2. The period of extended operation for SSES begins at midnight July 17, 2022, for Unit 1 and at midnight March 23, 2024 for Unit 2. The Renewed Facility Operating Licenses expire at midnight on July 17, 2042, and March 23, 2044, respectively.

5.4.2 Nonroutine Reports

There were no unusual or Important Environmental Events as identified in the Environmental Protection Plan that required reporting in 2009.

6.0 ATTACHMENTS

Figure 5.1-1

Auditing Organization Chart (2009)
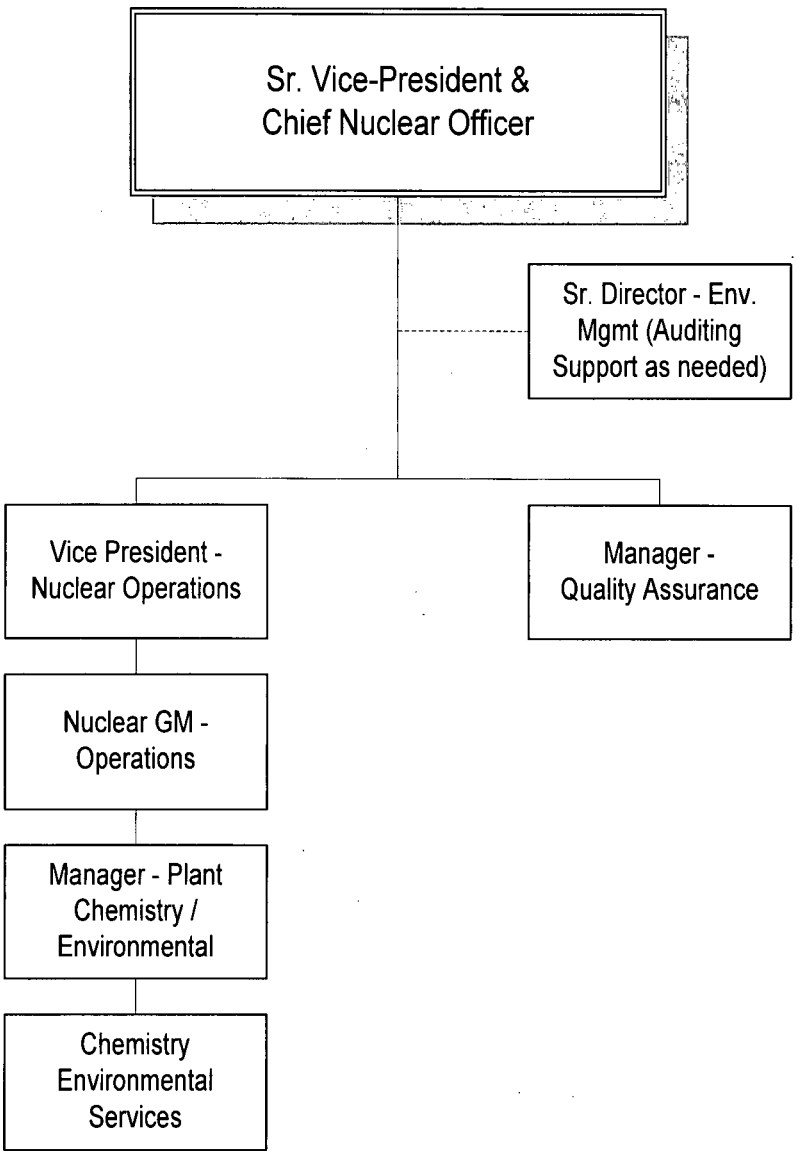
FIGURE 5.1-1
AUDITING ORGANIZATION CHART
(2009)