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APR 29 2008

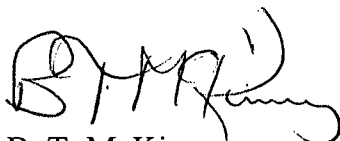
U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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11555 Rockville Pike
Rockville, MD 20852

**SUSQUEHANNA STEAM ELECTRIC STATION
ANNUAL ENVIRONMENTAL OPERATING REPORT
(NON-RADIOLOGICAL)
PLA-6348**

**Docket Nos. 50-387
50-388**

The Susquehanna Steam Electric Station Annual Environmental Operating Report (Non-Radiological) is hereby submitted for the calendar year 2007 in accordance with the Environmental Protection Plan.

Should you have any questions or require additional information, please contact Mr. Rocco R. Sgarro, Manager – Nuclear Regulatory Affairs, at (610) 774-7552.


B. T. McKinney

Attachment

Copy: Mr. S. J. Collins, NRC Region I, Regional Administrator
Mr. R. R. Janati, DEP/BRP
Mr. F. W. Jaxheimer, NRC Sr. Resident Inspector
Mr. B. K. Vaidya, NRC Project Manager

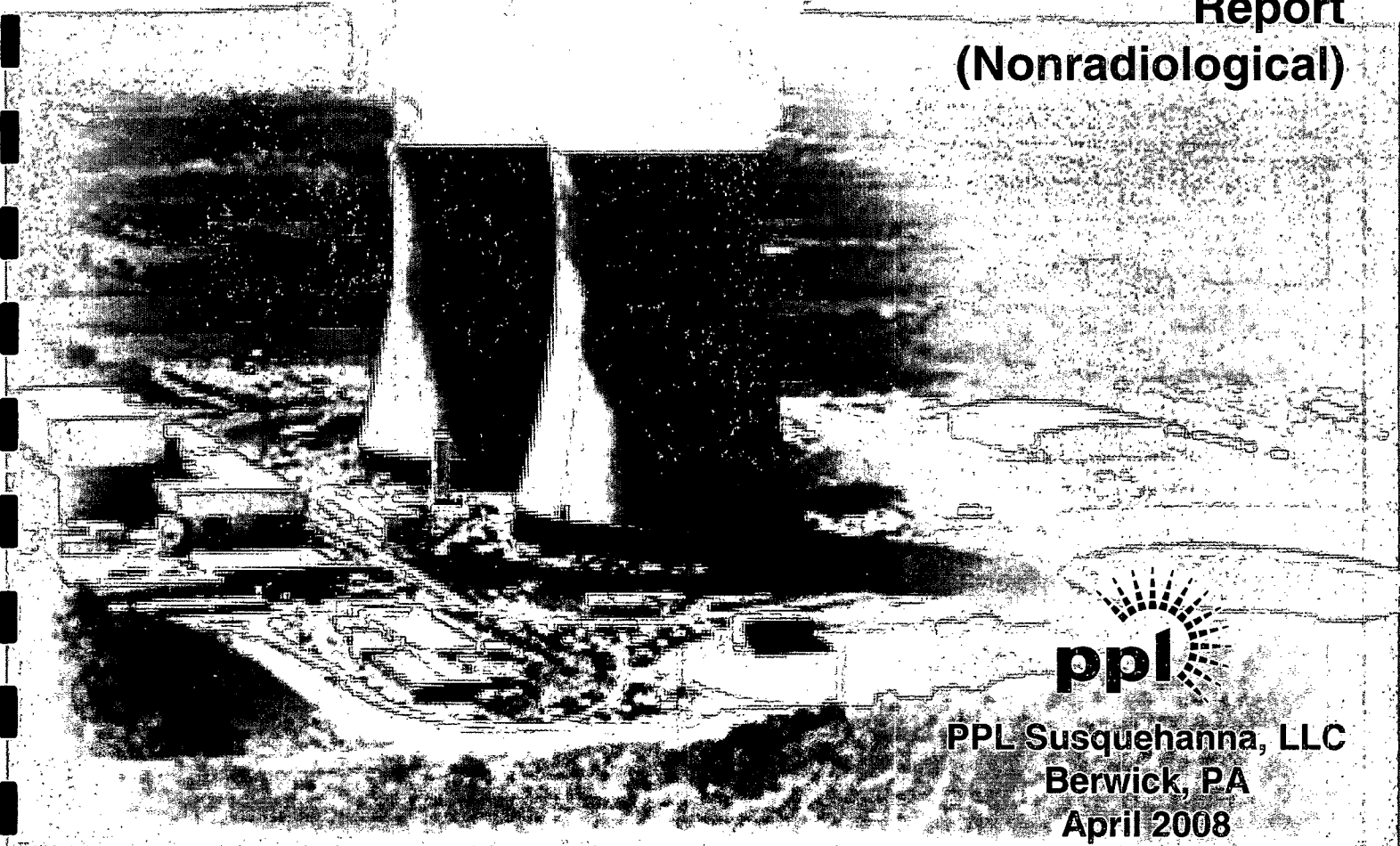
IE25
NRC

Susquehanna Steam Electric Station

Units 1 & 2

2007 ANNUAL REPORT

Annual
Environmental
Operating
Report
(Nonradiological)



ppl

PPL Susquehanna, LLC
Berwick, PA
April 2008



**Susquehanna Steam Electric Station
Units 1 & 2**

**2007
ANNUAL ENVIRONMENTAL OPERATING REPORT
(NONRADIOLOGICAL)**



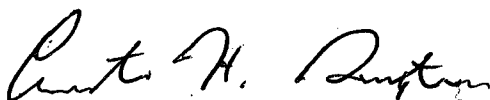
**PPL Susquehanna, LLC
Berwick, PA
April 2008**

SUSQUEHANNA STEAM ELECTRIC STATION

ANNUAL ENVIRONMENTAL OPERATING REPORT (NONRADIOLOGICAL)

2007

Prepared by:



Curtis H. Saxton
Supervisor – Services & Programs

Date:

4/11/08

Reviewed by:

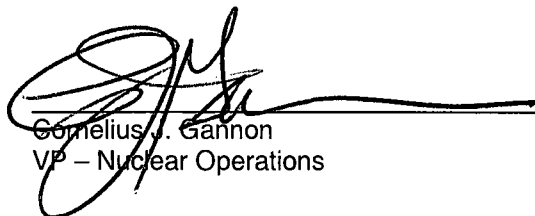


Bruce E. Rhoads
Manager – Plant Chemistry

Date:

4/15/08

Approved by:



Cornelius J. Gannon
VP – Nuclear Operations

Date:

4/25/2008



**Susquehanna Steam Electric Station
Units 1 & 2**

**2007
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 2008**

FOREWORD

The Susquehanna Steam Electric Station (Susquehanna SES) consists of two boiling water reactors with design electrical ratings of 1220 megawatts electrical (MWE) net for Units 1 and 2, respectively. The site consists of approximately 1,700 acres located in Salem Township, Luzerne County, Pennsylvania, approximately five miles northeast of Berwick, Pennsylvania. An additional 700 acres of PPL 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, 2007 through December 31, 2007. In summary it documents that environmental commitments were met and there was no significant adverse environmental impact from station operation.

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2007 Shad Impingement Monitoring Program

Figure 3.2-1

PLE 0024361, March 2007 Monthly Discharge Monitoring Report

Figure 5.1-1

Auditing Organization Chart (2007)

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 2007 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 2007 report is the 26th 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

The Susquehanna Anadromous Fish Restoration Committee continued to administer programs to restore American Shad (*Alosa sapadissima*) to the Susquehanna River in 2007. The restoration program is a continuing commitment to return shad and other migratory fishes to historic spawning and nursery waters above major dams in the Susquehanna River.

The Susquehanna SES intake screens were monitored daily for impinged juvenile American Shad from 1 August through 28 September 2007. During the two-month period, 64 fish of nine species, predominately channel catfish (33) and smallmouth bass (19) were collected along with 234 crayfish (Table 2.1-1). Most fish were young-of-the year or juveniles; no juvenile shad were taken. The screens did not operate from 8-17 August 2007 due to PPL maintenance activities.

Biofouling Mollusk Monitoring

The biofouling mollusk monitoring program continued at the Susquehanna SES in 2007. Since the arrival of Asian clams in the vicinity of the plant, the program continues to include biweekly artificial substrate inspections at the River Intake Building and monthly inspections of artificial substrates and the cement shoreline of the Engineered Safeguards Service Water Spray Pond. The spray pond is also inspected annually via scuba. River substrates were inspected at select sites this summer from Millersburg to Great Bend Pennsylvania. While the Asian clam is present in the vicinity of the plant, its densities are still relatively low.

In July, personnel of the Pennsylvania Department of Environmental Protection reported that adult zebra mussels had been collected in the river in the vicinity of Hallstead, Pennsylvania. Zebra mussels have not yet been found south of this location in the Susquehanna River.

During September 2007, PPL Susquehanna personnel treated the spray pond with biocide to kill Asian clams in the pond.

2.2 Terrestrial Issues

2.2.1 Studies Previously Completed

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

2.2.2 Sound Level Survey

An increase in station power generation of 5% was completed during spring 1995. A power uprate sound level survey was conducted in June 1995.

2.2.3 Maintenance of Transmission Line Corridors

Transmission line corridor vegetation maintenance and inspection records are maintained by the Planning and Engineering Services Department of PPL Electric Utilities and are available upon request. There were no adverse environmental impacts to transmission corridors reported in 2007. 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 2007.

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 2007, 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. Submittal of Extended Power Uprate River Water Consumptive Use Application to Susq. River Basin Commission.
2. Relocation of underground electrical conduit at Susquehanna Riverlands.
3. Reutilization of Sulfuric Acid Injection tanks for U1/U2 Extended Power Uprate Project Plan.
4. Construction of Steam Dryer Shielded Storage Enclosure
5. Installation of Ground Water Wells for Tritium Monitoring

3.2 Reporting Related to NPDES Permits and State Certifications

The US Nuclear Regulatory Commission was provided a copy of PLE-0024361 (April 19, 2007), which was sent to PaDEP as notification of an NPDES noncompliance that occurred in March 2007 at the Sewage Treatment Plant. Refer to Figure 3.2-1 for PLE-002461 cover letter.

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

On September 12, 2007 the Susquehanna River Basin Commission approved PPL Susquehanna's Extended Power Uprate (Docket No. 19950301-1) for riverwater withdrawal and consumptive use.

4.0 ENVIRONMENTAL CONDITIONS

4.1 Unusual or Important Environmental Events

During 2007, 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 a diesel fuel spill of approximately 70 gallons from a ruptured saddle tank on a water truck. The spill was immediately contained and cleaned up. There was no release to a waterway. NRC notification was made (Event Number: 43589) pursuant to 10CFR50.72(b)(2)(xi) as an event related to the protection of environment since a courtesy notification to the PaDEP was made. This event was determined not to be 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, 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 2007, the Field Services 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 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 Corporate Director of Environmental Management is available to provide auditing support as necessary.

There are periodic audits of the EPP program. The next audit of the EPP is scheduled for 2008 as part of an overall Chemistry Program Audit.

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 2007.

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 2007. It provides summaries and analyses of environmental protection activities required in Subsection 4.2 of the EPP for the reporting period.

5.4.2 Nonroutine Reports

There were no unusual or Important Environmental Events as identified in the Environmental Protection Plan that required reporting in 2007.

6.0 ATTACHMENTS

Table 2.1-1

2007 Shad Impingement Monitoring Program

Figure 3.2-1

PLE 0024361, March 2007 Monthly Discharge Monitoring Report Cover Letter

Figure 5.1-1

Auditing Organization Chart (2007)

**TABLE 2.1-1
2007 AMERICAN SHAD IMPINGEMENT PROGRAM**

Date	Time	Items Found on Trash Bar/Traveling Screen		
		Shad	Fish	Other
2007				
1 Aug	1200	Nets set to begin sampling.		
2 Aug	1500	0	10 smallmouth bass	19 crayfish
3 Aug	1400	0	5 smallmouth bass	9 crayfish
4-5 Aug	Nets set but not checked.			
6 Aug	1430	0	2 smallmouth bass 1 tessellated darter	21 crayfish
7 Aug	1300	0	1 smallmouth bass 1 spottail shiner	3 crayfish
8 Aug	1400	0	0 <i>PPL working on river intake screens. No water flowing through nets.</i>	0
9 Aug	1030	0	0 <i>No water flowing through nets.</i>	0
10-12 Aug	Nets set but not checked.			
13 Aug	1500	0	0 <i>No water flowing through nets.</i>	0
14 Aug	1010	0	0 <i>No water flowing through nets.</i>	0
15 Aug	Nets set but not checked.			
16 Aug	1100	0	0 <i>No water flowing through nets.</i>	0
17 Aug	1200	0	0 <i>No water flowing through nets.</i>	0
18-19 Aug	Nets set but not checked.			
20 Aug	1445	0	3 channel catfish 1 rock bass 1 spottail shiner <i>PPL work on river intake screens appears to be completed.</i>	26 crayfish
21 Aug	1205	0	1 channel catfish 1 rock bass	14 crayfish
22 Aug	1400	0	5 channel catfish 1 northern pike 1 spottail shiner 1 brown bullhead	9 crayfish
23 Aug	1430	0	2 channel catfish	6 crayfish
24 Aug	1320	0	5 channel catfish	7 crayfish
25-26 Aug	Nets set but not checked.			
27 Aug	1500	0	5 channel catfish	14 crayfish
28 Aug	Nets set but not checked.			
29 Aug	0900	0	0	3 crayfish
30 Aug	1000	0	0	6 crayfish
31 Aug	1130	0	0	2 crayfish

TABLE 2.1-1 (continued)

Date		Time	Items Found on Trash Bar/Traveling Screen	
2007		Shad	Fish	Other
1-3 Sep	Nets set but not checked.			
4 Sep	1320	0	0	16 crayfish
5 Sep	0845	0	2 channel catfish	3 crayfish
6 Sep	0937	0	1 spotfin shiner	3 crayfish
7 Sep	1140	0	1 channel catfish	1 crayfish
8-9 Sep	Nets set but not checked.			
10 Sep	1450	0	0	16 crayfish
11 Sep	0935	0	0	3 crayfish
12 Sep	0930	0	0	2 crayfish
13 Sep	1130	0	0 <i>High volume of leaves/debris in traveling screen net.</i>	5 crayfish
14 Sep	1145	0	1 bluntnose minnow	1 crayfish
15-16 Sep	Nets set but not checked.			
17 Sep	1100	0	1 smallmouth bass 1 rock bass	2 crayfish
18 Sep	0900	NA	<i>Leaves/debris combined with flow through traveling screen net prevented lifting net onto platform for inspection.</i>	0 (trash bar)
19 Sep	0910	NA	<i>Had to dump contents of traveling screen net in order to lift onto platform.</i>	2 crayfish (trash bar)
20 Sep	1025	0	0	3 crayfish
21 Sep	1130	0	0	2 crayfish
22-23 Sep	Nets set but not checked.			
24 Sep	0850	0	3 channel catfish	10 crayfish
25 Sep	Nets set but not checked.			
26 Sep	0750	0	1 channel catfish	8 crayfish
27 Sep	0830	0	2 channel catfish 1 tessellated darter	10 crayfish
28 Sep	0825	0	3 channel catfish	8 crayfish
28 Sep	Nets removed.			
TOTALS		0 shad	64 fish – 9 species 33 channel catfish 19 smallmouth bass 3 rock bass 2 spottail shiner 2 spotfin shiner 2 tessellated darter 1 northern pike 1 brown bullhead 1 bluntnose minnow	234 crayfish

Figure 3.2-1



April 19, 2007

Ms. Kate Crowley
Water Quality Regional Manager
Bureau of Water Quality Management
Pennsylvania Department of Environmental Protection
Two Public Square
Wilkes-Barre, PA 18711-0790

**SUSQUEHANNA STEAM ELECTRIC STATION
DISCHARGE MONITORING REPORT – MARCH 2007
NPDES PERMIT NO. PA 0047325
PLE 0024361**

Dear Ms. Crowley:

Pursuant to Part A,3.b.(1) of NPDES Permit No. PA 0047325, enclosed is the Susquehanna Steam Electric Station (SES) Discharge Monitoring Report (DMR) for March and the Monthly Facility Report Form (01-112).

During March, the monthly average CBOD limit was exceeded at the Sewage Treatment Plant (outfall 079) due to increased flows resulting from a large population of temporary workers on site. Preemptive measures and immediate corrective actions were taken to improve treatment, including increasing air, alternately loading aeration beds, and increasing sludge hauling frequency; however, it took some time for the plant to respond to an upset and it was not until the first sample collected in April that all parameters including CBOD were again within permit limits.

If you have any questions, please call Curt Saxton (570) 542-1879 or Jerrold McCormick at (570) 542-3014.

Respectfully yours,

Bruce E. Rhoads
Manager – Plant Chemistry

CHS/kds

Enclosure 1 – March 2007 DMR (12 pages)
Enclosure 2 – Monthly Facility Report Form (1 page)

Copy to:
Ms. N. Green, EPA Region III
NRC, ATTN: Document Control Desk
NRC, Region 1
Mr. A. J. Blamey, NRC, Sr. Resident Inspector
Mr. R. V. Guzman, NRC, Project Manager

FIGURE 5.1-1 AUDITING ORGANIZATION CHART (2007)

