



PECO NUCLEAR

A Unit of PECO Energy

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EPP 5.4.1

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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Limerick Generating Station, Units 1 and 2
1999 Annual Environmental Operating Report
(Non-Radiological)

Gentlemen:

In accordance with Section 5.4.1, of Appendix B of the Facility Operating Licenses, Environmental Protection Plan (EPP), this letter submits the Limerick Generating Station, Units 1 and 2, 1999 Annual Environmental Operating Report (Non-Radiological). This report describes the implementation of the EPP for 1999.

If you have any questions, please do not hesitate to contact us.

Sincerely,

Michael Gallagher
Plant Manager

Attachment
DEW/dew

cc: H. J. Miller, Administrator, Region I, USNRC (w/attachment)
A. L. Burritt, USNRC Senior Resident Inspector, LGS (w/attachment)

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**LIMERICK GENERATING STATION
UNITS 1 AND 2**

**1999
ANNUAL ENVIRONMENTAL OPERATING REPORT
(NON-RADIOLOGICAL)**

JANUARY 1999 - DECEMBER 1999

**FACILITY OPERATING LICENSE NOS. NPF-39, NPF-85
DOCKET NOS. 50-352, 50-353**

PECO ENERGY COMPANY

1.0 Introduction

This report describes the implementation of the Environmental Protection Plan (EPP), LGS Appendix B Technical Specifications, from January 1, 1999 through December 31, 1999.

Provided herein are summaries and results of the environmental protection activities required by Subsection 4.2 of the EPP.

2.0 Environmental Protection Activities

2.1. Aquatic Monitoring

The Environmental Protection Plan states that the NRC will rely on decisions made by the Commonwealth of Pennsylvania, under the authority of the Clean Water Act, for any requirements for aquatic monitoring. Industrial waste NPDES Permit PA 0051926 provides the mechanism for protecting water quality and indirectly aquatic biota. In accordance with the requirements of Section 3 of the Permit, monitoring results were summarized for each month and reported on Discharge Monitoring Reports (DMR) which were submitted to the PaDEP and US EPA.

A summary of the results as reported in the monthly DMR's is presented in Table 1 for discharge points at the Limerick Station and the Bradshaw Reservoir discharge to the East Branch Perkiomen Creek.

In 1999, a monitoring program for zebra mussel was performed upstream and downstream of Limerick on the Schuylkill River as well on the Delaware River near the Point Pleasant Pumping Station and at the Perkiomen Creek (Graterford, PA) Pumping Station. Neither the monitoring devices employed nor the general area near the devices showed any sign of mussel infestation. In addition, general observations were made on several occasions to determine the presence of zebra mussel at several points along the Point Pleasant water diversion route. Sites visited included the Delaware River at Point Pleasant, several locales along the East Branch Perkiomen Creek, the intake location on the Perkiomen Creek at Graterford, and the Schuylkill upstream and downstream of Limerick Generating Station. No zebra mussels were found, although Asiatic clams were commonly observed on the Schuylkill River as well as throughout the diversion system from Bradshaw Reservoir and to the mouth of the East Branch Perkiomen Creek.

Fish tissue samples were collected as part of the Radiological Environmental Monitoring Program biannually on the Schuylkill River, both upstream and downstream of Limerick Generating Station. These collection efforts allow for a descriptive assessment of the fish community in the vicinity of Limerick. Most common were spottail, spotfin, and common shiner; carp, goldfish, white sucker, redbreast sunfish, pumpkinseed, smallmouth and largemouth bass, brown and yellow bullhead, and channel and white catfish. Smallmouth bass appeared to be one of the most common species of game fish. The species composition upstream and downstream of Limerick appeared to be similar.

2.2. Terrestrial Monitoring

No terrestrial monitoring was required.

2.3. Maintenance of Transmission Line Corridors

Transmission line maintenance records concerning herbicide use are being maintained by PECO Energy Distribution, Electric Supply and Transmission Department. As required by the LGS Appendix B Technical Specifications, Section 4.2.3, these records can be made available to the NRC upon request.

2.4. Noise Monitoring

All noise surveys required by the LGS Final Environmental Statement, Section 5.14.4, Atomic Safety Licensing Board (ASLB) ruling LBP-83-11, dated March 8, 1983, and LGS Appendix B Technical Specifications, Sections 2.3 and 4.2.4, were completed in 1990 for Limerick Generating Station Unit 2 operation and Bradshaw Reservoir. These studies were reported on in the 1990 Annual Environmental Operating Report (Non-radiological). No further noise monitoring is required per LGS Appendix B Technical Specifications, Section 4.2.4.1.

2.5. Environmental Protection Plan

There were no Environmental Protection Plan (EPP) non-compliances identified by the Nuclear Quality Assurance Department or by Station Self-Assessment in 1999.

2.6. Changes in Station Design or Operation, Tests or Experiments

There were no changes in the Limerick Generating Station design or operation and performance of tests or experiments that required an Environmental Evaluation in accordance with the requirements of Section 3.1 of the Environmental Protection Plan.

2.7. Non-routine Reports Submitted

Two non-routine reports containing two incidences of non-compliance were submitted in accordance with EPP Section 5.4.2. Copies of all letters were supplied to the NRC.

1. On March 19, 1999 On March 19, 1999, station personnel observed foam emanating from a manhole vent associated with Outfall 001, no foam was observed on any waterway. A sample of Outfall 001 was analyzed for BETZ 3625 and the value exceeded the daily maximum limit of 0.4 ppm for 2.5 hours. This is in violation of Part A of NPDES Permit PA0051926, which requires the maximum daily concentration of 0.4 ppm for BETZ 3625 during chemical addition.

The source of BETZ 3625 was the spray pond. Approximately one hour before the sample was taken, a batch addition of BETZ 3625 was made to the spray pond. During that time, the spray pond was being fed with water to reduce conductivity. This caused a short cycle of chemical to the spray pond overflow.

The cause of this violation was the inappropriate addition of BETZ 3625 to the Spray Pond during a bleed and feed evolution. Normally the spray pond does not overflow, therefore the addition of BETZ 3625 does not have an effect on Outfall 001. The procedure governing the addition of chemicals has been modified to prevent addition of biocides during bleed and feed operations.

2. During the month of July 1999, the NPDES limit for fecal coliform concentration at the discharge of the Bradshaw Reservoir pumps into the East Branch of the Perkiomen Creek was not met. The permit requires five consecutive grab samples each collected on different days, and the geometric mean of the five samples must be less than or equal to 200

colonies per 100 ml. An Ozone Disinfection System is utilized for treatment at the Bradshaw Reservoir Water Processing Facility.

On July 29, 1999, the geometric mean of the fecal coliform concentration was calculated to be 329 colonies per 100 ml. Additional samples were taken on August 2nd and 3rd that brought the geometric mean back within the limits to 162 colonies per 100 ml.

The July 1999 non-compliance occurred in the following manner. Two of the samples taken were within the limits imposed by the NPDES permit. The other three, occurring on July 15, July 21 and July 29, were greater than the 200 colonies per 100 ml limit. During this period the ozonation system was operating at maximum capacity and the ozonation system was checked to ensure that the system was optimized. The non-compliance is attributed to high water temperatures and low river flows concentrating the fecal coliform bacteria. The non-compliance was attributed to the extreme weather conditions in eastern Pennsylvania.

Table 1
SUMMARY OF 1999 LGS NPDES MONITORING RESULTS

Location:	Bradshaw	LGS Site	NO DISCH LGS Site	LGS Site	LGS Site	NO DISCH LGS Site	LGS Site	NO DISCH LGS Site	LGS Site	NO DISCH LGS Site	NO DISCH LGS Site	NO DISCH LGS Site	NO DISCH LGS Site
Permit Number:	0052221	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926
	001	001	101	201	301	MP003	MP005	020	021	023	All Others	105	103
Ave. Monthly Flow, MGD													
Maximum	39.40	8.79	0	0.2931	0.0210	0.0000	1267000	0	0.0094	0.0000	0	0.0000	0.0000
Mean	26.32	8.19	0	0.2301	0.0070	0.0000	105583.3358	0	0.0094	0.0000	0	0.0000	0.0000
Std Dev	11.46	0.47	0	0.0313	0.0054	0.0000	350180.3	0	0.0000	0.0000	0	0.0000	0.0000
Max Daily Flow, MGD													
Maximum	41.00	11.87	0	1.0000	0.1115	0.0000	1267000	0	0.0094	0.0000	0	0.0000	0.0000
Mean	32.47	10.36	0	0.5938	0.0455	0.0000	633500.015	0	0.0094	0.0000	0	0.0000	0.0000
Std Dev	11.58	0.74	0	0.2222	0.0248	0.0000	633499.985	0	0.0000	0.0000	0	0.0000	0.0000
TSS, mg/l													
Maximum	NR	12	NR	27	0	NR	21	NR	231	NR	NR	NR	NR
Mean	NR	12	NR	9	0	NR	11.5	NR	231	NR	NR	NR	NR
Std Dev	NR	0	NR	6	0	NR	9.5	NR	0	NR	NR	NR	NR
Discharge Temperature, Deg F													
Maximum	NR	86.0	NR	NR	NR	NR	76	NR	NR	NR	NR	NR	NR
Mean	NR	75.7	NR	NR	NR	NR	69.5	NR	NR	NR	NR	NR	NR
Std Dev	NR	8.2	NR	NR	NR	NR	6.5	NR	NR	NR	NR	NR	NR
Total residual Oxidants, mg/l													
Maximum	NR	0.20	NR	NR	NR	NR	<0.01	NR	<0.01	NR	NR	NR	NR
Mean	NR	0.12	NR	NR	NR	NR	<0.01	NR	<0.01	NR	NR	NR	NR
Std Dev	NR	0.04	NR	NR	NR	NR	0	NR	0	NR	NR	NR	NR
Zinc, mg/l													
Maximum	8.40	0.40	NR	NR	NR	NR	0.081	NR	NR	NR	NR	NR	NR
Mean	7.68	0.19	NR	NR	NR	NR	0.0805	NR	NR	NR	NR	NR	NR
Std Dev	0.28	0.09	NR	NR	NR	NR	0.0005	NR	NR	NR	NR	NR	NR
Copper, mg/l													
Maximum	NR	0.070	NR	NR	NR	NR	0.09	NR	NR	NR	NR	NR	NR
Mean	NR	0.043	NR	NR	NR	NR	0.0625	NR	NR	NR	NR	NR	NR
Std Dev	NR	0.010	NR	NR	NR	NR	0.0275	NR	NR	NR	NR	NR	NR

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	001	001	101	201	301	MP003	MP005	020	021	023	All Others	105	103
Inlet Temperature													
Maximum	NR	85	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	NR	64	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	NR	13.66	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hydrothol 191, mg/l													
Maximum	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Betz - 3625, mg/l													
Maximum	NR	0.12	NR	NR	NR	NR	<0.052	NR	NR	NR	NR	NR	NR
Mean	NR	0.07	NR	NR	NR	NR	<0.052	NR	NR	NR	NR	NR	NR
Std Dev	NR	0.03	NR	NR	NR	NR	0	NR	NR	NR	NR	NR	NR
Clamtrol, CT-1													
Maximum	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
pH, Min													
Minimum	7.30	8.45	NR	NR	NR	NR	8.52	NR	7.69	NR	NR	NR	NR
Mean	6.94	8.31	NR	NR	NR	NR	8.365	NR	7.69	NR	NR	NR	NR
Std Dev	0.40	0.13	NR	NR	NR	NR	0.155	NR	0.00	NR	NR	NR	NR
pH, Max													
Maximum	8.40	8.65	NR	NR	NR	NR	8.52	NR	7.69	NR	NR	NR	NR
Mean	7.68	8.49	NR	NR	NR	NR	8.27	NR	7.69	NR	NR	NR	NR
Std Dev	0.28	0.08	NR	NR	NR	NR	0.25	NR	0.00	NR	NR	NR	NR
Phosphorous, mg/l													
Maximum	NR	1.80	NR	NR	NR	NR	8.52	NR	0.04	NR	NR	NR	NR
Mean	NR	0.95	NR	NR	NR	NR	5.68	NR	0.04	NR	NR	NR	NR
Std Dev	NR	0.30	NR	NR	NR	NR	3.87	NR	0.00	NR	NR	NR	NR

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SUMMARY OF 1999 LGS NPDES MONITORING RESULTS

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Permit Number:	0052221	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926
	001	001	101	201	301	MP003	MP005	020	021	023	All Others	105	103
Nickel, mg/l													
Maximum	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0.00000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fecal Coliform, #/100 ml													
Maximum	329	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	97	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	119	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenolics, mg/l													
Maximum	<0.01	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	<0.01	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0.00	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Oil & Grease, mg/l													
Maximum	NR	NR	NR	5.5	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	NR	NR	NR	2.3	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	NR	NR	NR	1.3	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium-Hex, mg/l													
Maximum	<0.002	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	<0.002	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper, mg/l													
Maximum	0.003	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	0.003	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead, mg/l													
Maximum	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

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Permit Number:	0052221	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926
	001	001	101	201	301	MP003	MP005	020	021	023	All Others	105	103
Silver, mg/l													
Maximum	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cyanide, Free mg/l													
Maximum	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR