

Exelon Nuclear  
Limerick Generating Station  
P.O. Box 2300  
Pottstown, PA 19464

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April 26, 2004

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

Limerick Generating Station, Unit 1 and 2  
Facility Operating License Nos. NPF-39 and NPF-85  
NRC Docket Nos. 50-352 and 50-353

Subject: 2003 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), attached is the Limerick Generating Station, Units 1 and 2, 2003 Annual Environmental Operating Report (Non-Radiological). This report describes the implementation of the EPP for 2003.

If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,



Ron J. DeGregorio  
Vice President-LGS

Attachment 2003 Annual Environmental Operating Report (Non-Radiological)

cc: H. Miller, Administrator, Region I, USNRC  
A. Burritt, LGS USNRC Senior Resident Inspector

JEAS

bcc: J. Benjamin - Cantara  
W. Levis - KSA 3N  
M. Gallagher - KSA 3P  
B. Hanson - GML 5-1  
K. Cellars - KSA 3  
J. Grimes - KSA 3  
C. Mudrick - SSB 3-1  
D. Helker - KSA 3  
K. Kemper - SSB 2-4  
R. Newmaster - SSB 2-2  
T. Dougherty - SSB 2-3  
S. Endy - SMB 1-2  
T. Tierney - SSB 2-2  
R. McCall - SSB 2-3  
J. Toro - SMB 1-2  
D. Wahl - KSA 3  
S. Sklenar - KSA 3  
R. Alejnikov, SSB 2-2  
S. Gamble - SSB 2-4  
R. Kankus - KSA 3  
B. Lewis - KSA 3  
D. Dyckman - PA DEP BRP Inspector SSB 2-4  
R. R. Janati - Commonwealth of Pennsylvania DEP  
S. P. Focht - American Nuclear Insurers  
B. Aptowicz - City of Phila. Water Dept  
Dr. T. Yohe - Phila. Suburban Water Co  
J. Patano - Phoenixville Water Works  
A. Wyda - Citizens Utility Water Co.  
R. Jones - Pottstown Water Authority

**LIMERICK GENERATING STATION  
UNITS 1 AND 2**

**2003  
ANNUAL ENVIRONMENTAL OPERATING REPORT  
(NON-RADIOLOGICAL)**

**JANUARY 1, 2003- DECEMBER 31 , 2003**

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

**EXELON GENERATION COMPANY, LLC**

## **1.0 Introduction**

This report describes the implementation of the Environmental Protection Plan (EPP), Limerick Generating Station (LGS) Appendix B Technical Specifications, from January 1 through December 31, 2003.

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 PA DEP and US EPA.

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

In 2003, general observations were made to determine if the exotic zebra mussel was present in the surface waters used for cooling purposes for Limerick Generating Station. Locations were visited upstream and downstream in the vicinity of Limerick Generating Station on the Schuylkill River, as well as approximately 70 miles upriver near Pottsville and near the pumping station on Perkiomen Creek (Graterford, PA). None of the observations revealed 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 diversion outfall structure on the East Branch, and several locales along the East Branch Perkiomen Creek water diversion route. No zebra mussels were found, although Asiatic clams were common at all locations.

Fish tissue samples were collected bi-annually as part of the Radiological Environmental Monitoring Program (REMP) 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. The most common fish were spottail shiner, spotfin shiner,

common shiner, carp, goldfish, white sucker, redbreast sunfish, pumpkinseed, rockbass, smallmouth and largemouth bass, yellow bullhead, and channel catfish. Smallmouth bass was one of the most common species of game fish. Other less common species observed during 2003 included bluegill, green sunfish, and brown bullhead. The species composition of the fish community upstream and downstream of Limerick appeared to be similar.

**2.2 Terrestrial Monitoring**

No terrestrial monitoring is required.

**2.3 Maintenance of Transmission Line Corridors**

Transmission line maintenance records concerning herbicide use are maintained by the PECO Energy Company Consumer Energy Services Group - Power Delivery Division (Electric Transmission and Distribution 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**

An Environmental Health and Safety compliance audit, which included the Environmental Protection Plan, was conducted during the period of September 23-26, 2003 by Exelon Health & Safety, and Parker and Associates, Inc.. During this audit, it was identified that not all required information for application of herbicides within the LGS transmission line corridors was available in a documented record. Additionally, records were not available to demonstrate that the NRC was notified of the NPDES revision dated November 2002. Both of these issues were promptly addressed: all required herbicide data was documented on data sheets and forwarded to LGS; and a notification letter was forwarded to the NRC regarding the referenced NPDES permit revision.

## **2.6 Changes in Station Design or Operation, Tests or Experiments**

During 2003 there was one LGS operational activity that required an Environmental Evaluation in accordance with the requirements of Section 3.1 of the Environmental Protection Plan. It involved a demonstration project for providing mine water as additional consumptive water for Limerick Generating Station. Normally, when the Schuylkill River is restricted for consumptive water makeup due to elevated temperature or low flow conditions, water is diverted to Limerick Generating Station (LGS) from the Delaware River via the Point Pleasant Water Diversion System. In June of 2003, the Delaware River Basin Commission (DRBC) approved a demonstration project to allow Exelon to pump water into the Schuylkill River from a mine pool in the anthracite region of Pennsylvania, in order to support part of the consumptive water needs for LGS. This demonstration project commenced with the pumping of water from the Wadesville Mine into the Schuylkill River in mid-July, and continued until mid-October of 2003, ultimately reducing the amount of water used by Limerick Generating Station from the Delaware River.

An extensive monitoring plan was performed to determine if this project produced any deleterious impacts on the basin waterways. None have been identified, but the results were inconclusive due to the record rainfalls that occurred in 2003. In December, a request to continue the demonstration in 2004 was made to the DRBC. The continuation of the Demonstration was approved with PADEP support for 2004.

Attachment 1 serves as an evaluation to provide the bases for a determination that the proposed use of coal mine water, as an alternate source of consumptive cooling makeup, does not:

1. Involve an un-reviewed environmental question; or
2. Constitute a decrease in the effectiveness of the Environmental Protection Plan.

## **2.7 Non-routine Reports Submitted**

No non-routine reports were submitted during the calendar year 2003.

## APPENDIX 1 SUMMARY OF 2003 LGS NPDES MONITORING RESULTS

	Location: Bradshaw	LGS Site	NO DISCH LGS Site	LGS Site	LGS Site	LGS Site	NO DISCH LGS Site	LGS Site	LGS Site	LGS Site	Visual Inspect LGS Site	LGS Site
Permit Number:	0052221	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926
	001	001	101	201	301	003	005	020	021	023	All Others	012
<b>Ave. Monthly Flow, MGD</b>												
Maximum	37.61	9.51	0	0.368	0.023	1.267	NR	1.42	NR	0.030	NR	0.0087
Mean	16.13	8.22	0	0.297	0.016	1.267	NR	1.42	NR	0.015	NR	0.0087
Std Dev	10.66	0.71	0	0.035	0.005	0.0	NR	0.0	NR	0.013	NR	0.00
<b>Max Daily Flow, MGD</b>												
Maximum	40.40	12.16	0	0.893	0.037	1.267	NR	1.42	NR	0.030	NR	0.0105
Mean	24.03	10.63	0	0.636	0.031	1.267	NR	1.42	NR	0.015	NR	0.0105
Std Dev	13.27	0.78	0	0.123	0.005	0.0	NR	0.0	NR	0.013	NR	0.00
<b>TSS, mg/l</b>												
Maximum	NR	12.26	NR	50.5	NR	57.08	NR	78	6.0	192.3	NR	224.5
Mean	NR	8.48	NR	15.1	NR	57.08	NR	78	6.0	79.8	NR	224.5
Std Dev	NR	3.78	NR	11.3	NR	0.0	NR	0	0.0	72.9	NR	0
<b>Discharge Temperature, Deg F</b>												
Maximum	NR	90.0	NR	NR	NR	66.6	NR	58	NR	89.0	NR	NR
Mean	NR	77.3	NR	NR	NR	66.6	NR	58	NR	73.8	NR	NR
Std Dev	NR	8.7	NR	NR	NR	0.0	NR	0	NR	14.4	NR	NR
<b>Total residual Oxidants, mg/l</b>												
Maximum	NR	0.22	NR	NR	NR	<0.05	NR	NR	NR	0.17	NR	NR
Mean	NR	0.17	NR	NR	NR	<0.05	NR	NR	NR	0.11	NR	NR
Std Dev	NR	0.03	NR	NR	NR	0.0	NR	NR	NR	0.04	NR	NR
<b>Zinc, mg/l</b>												
Maximum	0.015	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	0.015	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0.0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>Copper, mg/l</b>												
Maximum	<0.005	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
Std Dev	0.0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>Inlet Temperature</b>												
Maximum	NR	76.5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	NR	60.40	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	NR	11.04	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

## APPENDIX 1

### SUMMARY OF 2003 LGS NPDES MONITORING RESULTS

	Location: Bradshaw		NO DISCH				NO DISCH				Visual Inspect	
	Bradshaw	LGS Site	LGS Site									
Permit Number:	0052221	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051927
	001	001	101	201	301	003	005	020	021	023	All Others	012
<b>Spectrus CT 1300, mg/l</b>												
Maximum	NR	0.303	NR	NR	NR	<0.052	NR	NR	NR	<0.052	NR	NR
Mean	NR	0.089	NR	NR	NR	<0.052	NR	NR	NR	<0.052	NR	NR
Std Dev	NR	0.073	NR	NR	NR	0.0	NR	NR	NR	0	NR	NR
<b>Spectrun NX 1104, mg/l</b>												
Maximum	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
Std Dev	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>pH, Min</b>												
Minimum	7.51	8.30	NR	NR	NR	7.77	NR	7.77	NR	8.40	NR	NR
Mean	7.32	8.14	NR	NR	NR	7.77	NR	7.77	NR	8.26	NR	NR
Std Dev	0.20	0.10	NR	NR	NR	0.0	NR	0	NR	0.11	NR	NR
<b>pH, Max</b>												
Maximum	7.87	8.44	NR	NR	NR	7.77	NR	7.77	7.8	8.40	NR	7.52
Mean	7.67	8.31	NR	NR	NR	7.77	NR	7.77	7.8	8.26	NR	7.52
Std Dev	0.24	0.08	NR	NR	NR	0.0	NR	0	0.0	0.11	NR	0.00
<b>Phosphorous, mg/l</b>												
Maximum	NR	NR	NR	NR	NR	NR	NR	NR	0.12	NR	NR	NR
Mean	NR	NR	NR	NR	NR	NR	NR	NR	0.12	NR	NR	NR
Std Dev	NR	NR	NR	NR	NR	NR	NR	NR	0.0	NR	NR	NR
<b>Dissolved Oxygen, mg/l</b>												
Minimum	8.90	NR	NR									
Mean	10.46	NR	NR									
Std Dev	1.07	NR	NR									
<b>Aluminum, mg/l</b>												
Maximum	0.230	NR	NR									
Mean	0.230	NR	NR									
Std Dev	0.0	NR	NR									
<b>Cadmium, mg/l</b>												
Maximum	<0.005	NR	NR									
Mean	<0.005	NR	NR									
Std Dev	0.0	NR	NR									

## APPENDIX 1

### SUMMARY OF 2003 LGS NPDES MONITORING RESULTS

	Location:	Bradshaw	LGS Site	NO DISCH	LGS Site	LGS Site	LGS Site	LGS Site	NO DISCH	LGS Site	LGS Site	LGS Site	Visual Inspect	LGS Site
	Permit Number:	0052221	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051927
	001	001	101	201	301	003	005	020	021	023	All Others	012		
<b>Iron, Total mg/l</b>														
Maximum	0.300	NR	NR	NR	9.7									
Mean	0.300	NR	NR	NR	9.7									
Std Dev	0.0	NR	NR	NR	0.0									
<b>Iron, Dissolved mg/l</b>														
Maximum	0.06	NR	<0.05	NR	NR	NR	3.84							
Mean	0.06	NR	<0.05	NR	NR	NR	3.84							
Std Dev	0.0	NR	0.0	NR	NR	NR	0.0							
<b>Nitrogen, Kjeldahl, mg/l</b>														
Maximum	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.84	NR	NR	NR	NR
Mean	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.84	NR	NR	NR	NR
Std Dev	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.0	NR	NR	NR	NR
<b>Mercury, mg/l</b>														
Maximum	<0.0002	NR	NR	NR	NR									
Mean	<0.0002	NR	NR	NR	NR									
Std Dev	0.0	NR	NR	NR	NR									
<b>Nickel, mg/l</b>														
Maximum	<0.005	NR	NR	NR	NR									
Mean	<0.005	NR	NR	NR	NR									
Std Dev	0.0	NR	NR	NR	NR									
<b>Fecal Coliform, #/100 ml</b>														
Maximum	84.0	NR	NR	NR	NR									
Mean	42.00	NR	NR	NR	NR									
Std Dev	31.88	NR	NR	NR	NR									
<b>Phenolics, mg/l</b>														
Maximum	<0.01	NR	NR	NR	NR									
Mean	<0.01	NR	NR	NR	NR									
Std Dev	0.0	NR	NR	NR	NR									
<b>Oil &amp; Grease, mg/l</b>														
Maximum	NR	NR	NR	4.71	NR	NR	NR	NR	NR	2.41	NR	NR	NR	<2.0
Mean	NR	NR	NR	1.18	NR	NR	NR	NR	NR	2.41	NR	NR	NR	<2.0
Std Dev	NR	NR	NR	1.77	NR	NR	NR	NR	NR	0.0	NR	NR	NR	0.0

## APPENDIX 1

### SUMMARY OF 2003 LGS NPDES MONITORING RESULTS

Location:	Bradshaw	LGS Site	NO DISCH LGS Site	LGS Site	LGS Site	LGS Site	NO DISCH LGS Site	LGS Site	LGS Site	LGS Site	Visual Inspect LGS Site	LGS Site
	Permit Number:	0052221	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051926	0051927
	001	001	101	201	301	003	005	020	021	023	All Others	012
<b>Chromium-Hex, mg/l</b>												
Maximum	<0.01	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
Std Dev	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>Copper, mg/l</b>												
Maximum	<0.005	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
Std Dev	0.0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>Lead, mg/l</b>												
Maximum	<0.05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	<0.05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0.0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>Silver, mg/l</b>												
Maximum	<0.005	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
Std Dev	0.0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>Cyanide, Free mg/l</b>												
Maximum	0.008	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean	0.008	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Std Dev	0.0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>CBOD5, mg/l</b>												
Maximum	NR	NR	NR	NR	NR	NR	NR	NR	<2.0	NR	NR	NR
Mean	NR	NR	NR	NR	NR	NR	NR	NR	<2.0	NR	NR	NR
Std Dev	NR	NR	NR	NR	NR	NR	NR	NR	0.0	NR	NR	NR
<b>COD, mg/l</b>												
Maximum	NR	NR	NR	NR	NR	NR	NR	NR	<5.0	NR	NR	NR
Mean	NR	NR	NR	NR	NR	NR	NR	NR	<5.0	NR	NR	NR
Std Dev	NR	NR	NR	NR	NR	NR	NR	NR	0.0	NR	NR	NR

## Attachment 1

July 10, 2003  
Exelon Nuclear  
200 Exelon Way  
Kennett Square, PA 19348

Attn: Mr. Scott A. Sklenar, Environmental Manager

Re: Environmental Protection Plan (Nonradiological)  
Limerick Generating Station  
Evaluation of Use of Coal Mine as Alternate Source of Consumptive Cooling Makeup

Dear Mr. Sklenar:

This letter serves as a written evaluation to provide the bases for a determination that the proposed use of coalmine water as an alternate source of consumptive cooling makeup for Limerick Generating Station (LGS) does not:

1. Involve an un-reviewed environmental question; or
2. Constitute a decrease in the effectiveness of the Environmental Protection Plan (EPP) (Nonradiological) [Appendix B to Facility Operating License No. NPF-39 as applicable to Units 1 and 2 of Limerick Generating Station (LGS)] in meeting its objectives.

The proposed project would require a revision to the LGS Makeup Water System Operating Plan ("The Operating Plan"), currently Revision 4, May 2002, to:

- Add mine pool water as an alternate source of water to supply consumptive cooling water required for LGS when Schuylkill River flow and temperature restrictions are in effect; and
- Modify the use of other water sources currently addressed in the plan [i.e., Perkiomen Creek, diverted Delaware River water ("the diversion project"), and Tamaqua reservoirs).

Therefore, the proposed project is associated with operation of LGS and must be evaluated in accordance with EPP requirements.

### Background

A proposed change is deemed to involve an un-reviewed environmental question if it concerns a:

1. Matter which may result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement - Operating License (FES-OL) stage, environmental impact appraisals, or in any decision of the Atomic Safety and Licensing Board (ASLB); or

## Attachment 1

2. Significant change in effluents or power level; or
3. Matter not previously reviewed and evaluated in the documents specified in the FES-OL, environmental impact appraisals, or in any decision of the ASLB, which may have a significant environmental impact.
4. The EPP's purpose is to provide for protection of nonradioactive environmental values during operation of LGS. The principal objectives of the EPP are:
  5. Verify that Exelon operates its facility in an environmentally acceptable manner, as established by the FES-OL and other Nuclear Regulatory Commission (NRC) environmental impact assessments.
  6. Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.
  7. Keep the NRC informed of the environmental effects of facility construction and operation and of the actions taken to control those effects.

The current Operating Plan requires LGS to withdraw consumptive cooling water from the Schuylkill River or, when river flow and temperature restrictions are in effect, from Perkiomen Creek. Water diverted from the Delaware River (the diversion project) supplements flows in the Perkiomen Creek when its natural flows are below set amounts for one or two unit operation. In addition, LGS may use water released from Tamaqua reservoirs into the Schuylkill River for consumptive cooling makeup during times when the reservoirs have sufficient volumes of stored water and water from the diversion project is unavailable or insufficient.

At its Public Hearing on June 26, 2003, the Delaware River Basin Commission (DRBC) approved changes to Docket D-69-210 CP (Final) via Revision No. 11 that will result in changes to the LGS Operating Plan. The docket changes would allow:

1. Augmentation of the Schuylkill River from pumping of stored mine waters from the Anthracite coal mine fields to serve as consumptive cooling makeup for LGS with specific sources addressed in the DRBC-approved Operating Plan. This would allow Exelon to withdraw an amount of consumptive cooling water from the Schuylkill River that is equivalent to the amount pumped into the river from the mine pools during the period when flow and temperature restrictions are in effect.
2. Use of unused Delaware River diversion project water for the protection of potable water sources with the specific protected sources addressed in the DRBC-approved Operating Plan. Unless the diversion project water is required for operation of LGS, Exelon would make the unused portion of its allocation available for use as a potable water supply.

## Attachment 1

3. A demonstration to establish the capability to pump mine waters into tributaries of the Schuylkill River in a manner that meets applicable regulatory requirements and to qualify the mine waters as an additional consumptive cooling makeup source for LGS. The source of the water for the demonstration would be the Wadesville Mine located in Schuylkill County, Pennsylvania, which could supply up to 40 percent of the average consumptive cooling need for LGS.
4. Acknowledgement from the DRBC that the additional influents from the pumped mine waters qualify as an additional consumptive cooling makeup source for LGS.
5. Use of Tamaqua's reservoir system, independent of the availability of the diversion system, as an additional source of consumptive cooling makeup at any time during the season when Schuylkill River flow and temperature restrictions are in effect. This would increase the amount of time that Tamaqua could release water on behalf of LGS.
6. The minimum release from the Bradshaw Reservoir to remain at the off-season Perkiomen Creek conservation flow of 10 cubic feet per second (cfs) until pumping commences at Bradshaw Reservoir and continues without interruption over at least a two-week period. At that time, the minimum release would increase to 27 cfs.
7. In addition, the DRBC stated in a letter to Exelon Nuclear dated July 9, 2003 that the DRBC staff has reviewed the Operating and Monitoring Plan for the Wadesville Pumping Demonstration and found it satisfactory.

### Evaluation

In the FES-OL, the NRC staff considered the environmental impacts associated with the operation of the two-unit LGS. The NRC identified certain environmental issues that required study or license conditions to resolve environmental concerns and to assure protection of the environment. Among the issues identified in the aquatic area were several involved with the operation of the diversion project. The NRC concluded that even though the operation of the diversion project altered the hydrology, aquatic habitats, and water quality of the headwater section of the East Branch of Perkiomen Creek, the diversion waters were expected to provide beneficial dilution of waste loads entering the East Branch in its middle and lower reaches. In addition, the NRC stated that supplemental cooling water withdrawal from Perkiomen Creek would result in localized effects from entrainment of fish larvae.

Consequently, the NRC required Exelon to report any occurrence of an unusual or important event during operation that indicates or could result in significant impact causally related to plant operation. The NRC specifically did not require aquatic monitoring. More importantly, the NRC stated that it would rely on the decisions made by the Commonwealth of Pennsylvania, under the authority of the Clean Water Act, for any requirements for aquatic monitoring.

## Attachment 1

As evidenced by issues identified in the FES-OL, the NRC previously evaluated the matter of consumptive cooling water sources. The evaluation criteria, which the NRC applied to the existing sources, presumably are the same that it would apply to any new sources. Therefore, this project would not be considered a matter that has not previously reviewed and evaluated.

The proposed change will not result in a significant change in power level or effluents. An increase in power level would be associated with an increase in the heat rate and the quantity of water required for consumptive cooling makeup. Although proposing an alternate source of consumptive cooling makeup, Exelon is not proposing an increase in the quantity of the makeup. Also, there will not be a significant change to effluents since:

- The limitations of the current National Pollutant Discharge Elimination System (NPDES) permit for LGS will continue to apply with the addition of the mine water source; and
- The proposed project will not proceed without the review and approval of the DRBC, which receives and addresses input from the Pennsylvania Department of Environmental Protection (PADEP) and other public and private groups that are interested in maintaining the water quality and beneficial uses of the Schuylkill River.

The proposed addition of water derived from Anthracite mine pools as an alternate source of consumptive cooling makeup for LGS will not cause an increase in any significant adverse impacts previously evaluated in the FES-OL. Exelon will continue to maintain a minimum conservation flow in the Perkiomen Creek that is acceptable to the regulatory agencies. Also, localized effects in the Perkiomen Creek from entrainment of fish larvae will decrease since the quantity of water withdrawn from the creek at the Perkiomen Pumphouse on average will diminish.

In addition, the regulatory review and approval process is designed to ensure that Exelon continue to operate its facility in an environmentally friendly manner. The process will weigh the benefits of the project to the aquatic environment from the pumping of mine pool water into the headwaters of the Schuylkill River against any identified potential adverse impacts. Based on an evaluation of the project taken as a whole, the DRBC will issue a decision to approve the requested changes only if the benefits outweigh the risks, or, as a minimum, are environmentally neutral. A pumping demonstration conducted over a four to six month period from the Wadesville Mine pool will include water quality and biological monitoring will provide confirmatory data to support DRBC decisions.

## Attachment 1

Among the anticipated direct and indirect environmental benefits of the use of coal mine water include:

- The addition of base flow to approximately 72 miles of the Schuylkill River from its headwaters to the withdrawal point at LGS at a time when low flow conditions would normally be present.
- The addition of cool water into Norwegian Creek, a tributary of the Schuylkill River with a use designation for Cold Water Fishes, and into the Schuylkill River during a time when high temperature conditions (and associated lower dissolved oxygen levels) would normally be present.
- The addition of higher alkalinity (and associated increased buffering capacity) water into the Schuylkill River.
- A decrease in occurrences of uncontrolled mine pool overflows that could potentially have an adverse affect on the water quality of the Schuylkill River and Delaware Estuary.
- Allowing Exelon's unused diversion system capacity to be used for protection of potable water sources.
- Reducing the potential for orphan coal mine sites by providing a revenue stream to contracted coal companies.
- Changing a potential acid-mine drainage liability into a valuable resource.
- Reducing the need to transfer water from the Delaware River when typically there are low-flow conditions present.
- Addressing the Pennsylvania stated policy to use mine water to support electrical generation.

Potential issues that will be evaluated during the demonstration period to identify any unintended or unanticipated adverse environmental effects include:

- The levels of constituents other than those currently required to be monitored by the mine pool discharger in the applicable NPDES permit, which could have significant adverse impacts on water quality or designated stream uses.
- The response of the mine pool to increased pumping.

## Attachment 1

- Erosion and sedimentation of flow channels.
- Public concerns (localized flooding, effects on wells, objectionable odors, etc.)

The DRBC will require that any mitigation determined to be necessary to offset adverse impacts will be included in the revision to the Operating Plan.

The proposed increased use of water released into the Schuylkill River from the Tamaqua reservoirs will continue to be subject to yield limitations previously established for the reservoirs. The water released from this source typically improves the water quality of the Schuylkill River.

### Conclusion

The DRBC review and approval process considers the concerns of the affected communities, agencies and stakeholders as well as other interested parties, including fishery groups, watershed groups, and public water purveyors. This will provide additional assurances that the project will not result in significant unacceptable environmental impacts and that Exelon will operate LGS in an environmentally acceptable manner. This process addresses NRC requirements and maintains consistency with other Federal, State and local requirements for environmental protection.

The proposed revision to the LGS Makeup Water System Operating Plan does not involve an un-reviewed environmental question or constitute a decrease in the effectiveness of the EPP. Therefore, Exelon:

- May make the proposed changes in station operation; and
- Is not required to submit a request to the NRC to issue its approval in the form of a license amendment incorporating the revision as a change to the EPP.

This evaluation does not relieve Exelon of the requirements of 10 CFR 50.59.

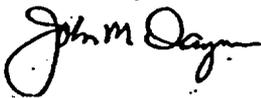
(End)

**Appendix 1**

If you have any questions or comments on the above evaluation, please call us at 215-657-5000.

Sincerely,

**URS CORPORATION**

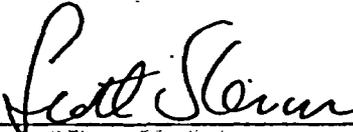


John M. Dayman, P.E.  
Project Engineer



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Project Principal

**EXELON APPROVAL:**



Scott A. Sklenar  
Environmental Manager

Date: 7-17-03