

## LimerickNPEm Resource

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**From:** Perkins, Leslie  
**Sent:** Wednesday, February 15, 2012 1:42 PM  
**To:** Nancy.Ranek@exeloncorp.com  
**Subject:** Limerick Draft RAIs  
**Attachments:** Limerick enviro RAIs.docx

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi Nancy,

I left you a message on your voicemail. Sorry it so long for me to respond. I got a little busy yesterday and I had meetings all morning today.

Attached are the staff's draft RAIs. Please take a look at the draft RAIs and let me know in the next day or two if any conference calls are needed. If no conference calls are needed then the formal letter could be issued as early as next week, or no later than the end of the month. Exelon has 30 days from the date the letter is formally issued to respond to the RAIs.

Please call me if you any questions or concerns.

Thanks,

Leslie Perkins  
Project Manager  
Division of License Renewal  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
301-415-2375

**Hearing Identifier:** Limerick\_LR\_NonPublic  
**Email Number:** 23

**Mail Envelope Properties** (Leslie.Perkins@nrc.gov20120215134200)

**Subject:** Limerick Draft RAIs  
**Sent Date:** 2/15/2012 1:42:04 PM  
**Received Date:** 2/15/2012 1:42:00 PM  
**From:** Perkins, Leslie

**Created By:** Leslie.Perkins@nrc.gov

**Recipients:**  
"Nancy.Ranek@exeloncorp.com" <Nancy.Ranek@exeloncorp.com>  
Tracking Status: None

**Post Office:**

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MESSAGE	795	2/15/2012 1:42:00 PM
Limerick enviro RAIs.docx	42935	

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
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**Expiration Date:**  
**Recipients Received:** Follow up

Mr. Michael P. Gallagher  
Vice President License Renewal Projects  
Exelon Generation Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
LIMERICK GENERATING STATION UNITS 1 AND 2 LICENSE RENEWAL  
APPLICATION ENVIRONMENTAL REVIEW

Dear Mr. Gallagher:

By letter dated June 22, 2011, Exelon Generation Company, LLC (Exelon) submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 (10 CFR Part 54), to renew Operating License NPF-39 and NPF-85 for Limerick Generating Station, Units 1 and 2 (LGS) for review by the U.S. Nuclear Regulatory Commission (NRC or staff). The NRC is reviewing the information contained in the license renewal application and the associated Environmental Report. The staff has identified, in enclosure 1, areas where additional information is needed to complete the review. Enclosure 2 identifies certain documents reviewed during the November 7-10, 2011, site audit that the NRC request be submitted by Exelon for further review. Additional requests for additional information may be issued in the future.

As discussed with your staff, we request that you provide your responses no later than 30 days from the date of this letter. If you have any questions, please contact me at 301-415-2375 or by e-mail at [leslie.perkins@nrc.gov](mailto:leslie.perkins@nrc.gov).

Sincerely,

Leslie Perkins, Project Manager  
Projects Branch 2  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 & 50-353

Enclosures:  
As stated

cc w/encl: Distribution via Listserv

Mr. Michael P. Gallagher  
Vice President License Renewal Projects  
Exelon Generation Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

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As discussed with your staff, we request that you provide your responses no later than 30 days after the issuance of this letter. If you have any questions, please contact me at 301-415-2375 or by e-mail at [leslie.perkins@nrc.gov](mailto:leslie.perkins@nrc.gov).

Sincerely,

Leslie Perkins, Project Manager  
Projects Branch 2  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 & 50-353

Enclosures:  
As stated

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NAME	IKing	LPerkins	Almboden	DWrona
DATE				

OFFICIAL RECORD COPY

Letter to Michael P. Gallagher from Leslie Perkins dated February, 2012

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
LIMERICK GENERATING STATION UNITS 1 AND 2 LICENSE RENEWAL  
APPLICATION ENVIRONMENTAL REVIEW

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LPerkins

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PBamford, DORL

MSmith, OGC

CKanatas, OGC

EDiPaolo, SRI

JAmbrosini, SRI (A)

NSieller, RI

NMcNamara, RI

DScrenci, RI

NSheehan, RI

**Request for Additional Information  
For Limerick Generating Station License Renewal  
Environmental Review**

**Meteorology and Air Quality**

1. Please provide the associated annual air emissions (pollutant and amount) for the most recent 5 years of operation for sources that are permitted under the Limerick Generating Station (LGS) Title V Operating Permit (TVOP 46-00038).
2. Sections 2.9.1 and 2.9.2 of the LGS ER contain numerous references to weather data that were originally presented in the 1984 Environmental Report - Operating License Stage. These data are at least 28 years old. Please provide the following meteorological information from data recorded at the primary meteorological tower (Tower 1) or provide the best available data if the requested information is not available from Tower 1. The meteorological data should include the most recent year for which data is available. Please provide the following information:
  - a. mean monthly temperatures at LGS;
  - b. mean monthly relative humidity values for mornings and afternoons at LGS;
  - c. mean annual rainfall and monthly rainfall distribution at LGS; and
  - d. indicate whether channeling effects through the river valley continue to affect regional synoptic scale weather systems at LGS as indicated in section 2.9.1 of the LGS LRA.

**Hydrology/Water Resources**

1. Describe the current status of Delaware River Basis Commission's (DRBC's) review/approval of the docket revision (docket integration) for LGS, including, as applicable, the status of any additional studies, milestones achieved, projected timeframe for issuance, etc.
2. Describe the current status of LGS' NPDES permit renewal (#PA0051926), including, as applicable, milestones achieved, projected timeframe for issuance, etc.
3. Provide copies of any Notices of Violation (NOVs), nonconformance notifications, or related infractions received from regulatory agencies associated with NPDES permitted discharges, sewage systems, groundwater or soil contamination, including spills, leaks, and other inadvertent releases of fuel solvents, chemicals, or radionuclides (covering past 5 years).

## **Aquatic Ecology**

1. Possum Hollow Creek is downstream of the LGS power block. Provide any sampling or monitoring reports for aquatic species and benthos from Possum Hollow Creek.
2. LGS withdraws cooling water from the Schuylkill River at the Schuylkill River pumphouse. The through screen intake velocity can influence impingement rates. Describe the through screen intake velocity for the Schuylkill River pumphouse.
3. Provide a description of screen clearing and maintenance activities and frequency at the Schuylkill Pumphouse, the Perkiomen Pumphouse, and Point Pleasant Pumping Station.
4. Zebra mussels are a non-native species that may occur within the waterbodies from which LGS withdraws. Describe zebra mussel monitoring and surveys efforts and discuss whether LGS staff has identified zebra mussels in any of the water bodies associated with the makeup water system of LGS.

## **Archaeological and Cultural Resources**

1. Submit the two Exelon presentations that were provided at the audit on the status of the agreement and the path forward for Fricks Lock Historic District. Docketing should follow guidelines from NRC regarding sensitive cultural resources location information. When submitting cultural resources information, do not include maps or coordinates of site location information.
2. Describe the current the status of Fricks Lock rehabilitation and mothball project. Docketing should follow guidelines from NRC regarding sensitive cultural resources location information. When submitting cultural resources information, do not include maps or coordinates of site location information.

**References Requested for Docketing at the  
Limerick Generating Station Environmental Site Audit  
November 7-10, 2011**

<b>Meteorology and Air Quality</b>
A. Title V Operating Permit, TVOP-46-00038, Issued December 7, 2009, and Revised February 17, 2010.
B. Title V Compliance Certification Reports (2006-2010)
<b>Aquatic Ecology</b>
A. NAI (Normandeau Associates, Inc.). 2 010a. East Branch Perkiomen Creek Aquatic Biology Assessment XIII, 2008 Monitoring Period. Prepared for Exelon Nuclear, Limerick Generating Station. May.
B. NAI (Normandeau Associates, Inc.). 2010b. East Branch Perkiomen Creek Aquatic Biology Assessment XIV, 2009 Monitoring Period. Prepared for Exelon Nuclear, Limerick Generating Station. July.
C. NAI (Normandeau Associates, Inc.). 2010c. Fish and Benthic Macroinvertebrate Community Composition in the Schuylkill River in the Vicinity of Limerick Generating Station During 2009. February 2010.
D. NAI (Normandeau Associates, Inc.). 2010d. Letter from Normandeau Associates, Inc. to Exelon Nuclear via email. Zebra mussel/Asiatic clam Survey. November. PECO (Philadelphia Electric Company). 1984. Environmental Report – Operating License Stage. Limerick Generating Station Units 1&2. 5 vols.
E. RMC (RMC Environmental Services). 1984. Progress Report, Non-Radiological Environmental Monitoring for Limerick Generating Station 1979-1983. Prepared for Philadelphia Electric Company. October.
F. RMC (RMC Environmental Services). 1985. Progress Report, Non-Radiological Environmental Monitoring for Limerick Generating Station 1984. Prepared for Philadelphia Electric Company. December.
G. RMC (RMC Environmental Services). 1986. Progress Report, Non-Radiological Environmental Monitoring for Limerick Generating Station 1985. Prepared for Philadelphia Electric Company. September.
H. RMC (RMC Environmental Services). 1987. Progress Report, Non-Radiological Environmental Monitoring for Limerick Generating Station 1986. Prepared for Philadelphia Electric Company. November.
I. RMC (RMC Environmental Services). 1988. Progress Report, Non-Radiological Environmental Monitoring for Limerick Generating Station 1987. Prepared for Philadelphia Electric Company. September.
J. RMC (RMC Environmental Services). 1989. Progress Report, Non-Radiological Environmental Monitoring for Limerick Generating Station 1988. Prepared for Philadelphia Electric Company. December.
K. Describe any aquatic surveys conducted at the Bradshaw Reservoir, the Wadesville Mine Pool and discharge channel, Bedminster Water Processing Facility, and the Still Creek Reservoir. For example, submit for docketing the response to information need (AQ-2 from the Audit Information Needs).
L. Describe the frequency that water is withdrawn from the Schuylkill River compared to other sources. For example, submit for docketing the response to information need (AQ-3 from the Audit Information Needs).
M. Describe the intake velocity, traveling screens, and any other operational procedures or structural designs that limits impingement and entrainment at the Point Pleasant Pumping Station on the Delaware River or at the pumping stations on the Bradshaw Reservoir, Still



Creek Reservoir, or Wadesville Mine Pool. For example, submit for docketing the response to information need (AQ-5 from the Audit Information Needs).
N. Describe any impingement or entrainment studies conducted at the Schuylkill Pumphouse, Perkiomen Pumphouse, or at the intakes on the Delaware River. For example, submit for docketing the response to information need (AQ-6 from the Audit Information Needs).
O. Describe the extent of a thermal plume as a result of discharges to the Schuylkill River. For example, submit for docketing the response to information need (AQ-7 from the Audit Information Needs).
P. In the ER, LGS stated that three species of concern were identified in the Pennsylvania Natural Diversity Index (PNDI) search for LGS license renewal. However, it was unclear which three species LGS identified and where the species would occur on the LGS site and at the Bradshaw Reservoir. Please state these species (AQ-8 from the Audit Information Needs).
Q. In addition, discuss the potential location of the three PNDI species of concern on the LGS site and at the Bradshaw Reservoir and Pumphouse, as discussed on Page 2-44 of the ER (AQ-8 from the Audit Information Needs).
<b>Hydrology</b>
A. Submit the last 5 years of monthly records for site groundwater production at all four site supply wells with outage periods identified.
B. 2006 Hydrogeologic Investigations Report.
C. Provide a summary of the results of groundwater monitoring performed for tritium, strontium-90, and gamma-emitting radionuclides since 2006 (i.e., groundwater protection program reports).
D. NPDES permit renewal application for PA0051926 (minus Appendix A and B) and the administrative completeness letter received from PA DEP.
<b>Archaeological and Cultural Resources</b>
A. Submit the references called out in Section 2.10 of the ER for archaeological surveys and the architectural and historical analysis of the Fricks Lock Historic District (CR-2 from the Audit Information Needs). Docketing should follow guidelines from NRC regarding sensitive cultural resources location information. When submitting cultural resources information, do not include maps or coordinates of site location information.
B. Submit the 1983 letter from the SHPO/PHMC. This letter contains the SHPO findings regarding the determination of impacts to cultural resources from construction and operation of T-lines (CR-3 from the Audit Information Needs). Docketing should follow guidelines from NRC regarding sensitive cultural resources location information. When submitting cultural resources information, do not include maps or coordinates of site location information.
C. Submit the list and description of the type of cultural resources that occur on the LGS site as a result of the CRGIS query (CR-4 from the Audit Information Needs). Docketing should follow guidelines from NRC regarding sensitive cultural resources location information. When submitting cultural resources information, do not include maps or coordinates of site location information.
D. Submit a summary of the cultural resources management plan to NRC. This summary should contain the table of contents, a brief overview, and a description of how and when the management plan will be implemented (CR-7 from the Audit Information Needs). Docketing should follow guidelines from NRC regarding sensitive cultural resources location information. When submitting cultural resources information, do not include maps or coordinates of site location information.
<b>Terrestrial Ecology</b>
A. Biodiversity Evaluation of Possum Hollow Run (completed under the direction of Exelon's

Environmental Stewardship Committee).
B. Blye, R. 1973. Relative Abundance of Bird Species During Migration.
C. Exelon. 1979-1983. Limerick Generating Station Non-radiological Environmental Report.
D. Exelon. 1984. Limerick Generating Station Non-radiological Environmental Report.
E. Exelon. 1985. Limerick Generating Station Non-radiological Environmental Report.
F. Exelon. 1986. Limerick Generating Station Non-radiological Environmental Report.
G. Exelon Generation. 2010. Limerick Generating Station Wildlife Management Plan. LGS-R-086.
H. Wildlife Habitat Council (WHC). 2006. Site Assessment and Wildlife Management Opportunities. 100 pp. LGS-R-278.
I. In relation to reference WHC (2006) above, please provide the following for the indicated Wildlife at Work Projects: <ul style="list-style-type: none"> <li>a. Bird and bat project summary sheets, including location maps, data sheets, and notes</li> <li>b. Frog project summary sheet</li> <li>c. Documented Environmental Evaluation Walkdown/Assessment (for frog fence replacement) (Report AR 01183399)</li> </ul>
J. Submit for docketing the text responses to site audit information needs TE-1, TE-2, TE-3, TE-4, TE-5, TE-6, TE-7, TE-8, and TE-9. These information needs can be found in NRC's Environmental Audit Needs List dated November 4, 2011 (ML11286A330).