LASALLE COUNTY STATION, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION
ENVIRONMENTAL REQUESTS FOR ADDITIONAL INFORMATION

Meteorology, Air Quality, and Noise

MA-1. Provide the following meteorological information from the data recorded at the LaSalle County Station, Units 1 and 2 (LSCS) meteorological facility for the most recent 5 years for which data is available:

a. mean monthly and annual temperatures;

b. mean monthly precipitation and annual precipitation; and

c. seasonal and annual summary wind statistics in the form of wind direction, wind roses, annual average wind speed and peak wind gust.

MA-2. The Environmental Report (ER) identifies that LSCS is subject to the emission standards for hazardous air pollutants for reciprocating internal combustion engines, 40 CFR Part 63, Subpart ZZZZ.

a. Clarify if the gasoline dispensing facility and fuel storage tank are subject to National Emission Standards for Hazardous Air Pollutants: Gasoline Dispensing Facilities (40 CFR 63, Subpart CCCCCC);

b. Provide annual hazardous air pollutants (HAP) emissions from LSCS emission sources for the most recent 5 years for which data is available.

MA-3. Describe and identify the small engines (less than 600 horsepower) included in the HAP emission calculations and that are exempt from air permitting requirements. Provide a description of the frequency of use of these small engines.

MA-4. Are there expected upgrade/replacement activities for equipment/operation that could increase or decrease air emissions over the license renewal period? If so, describe those upgrade/replacement activities.

MA-5. Describe the compliance history associated with LSCS Federally Enforceable State Operating Permit (FESOP) permit No. 75040086. Provide the five most recent annual emission reports submitted to the Illinois Environmental Protection Agency (IEPA) associated with LSCS FESOP permit No. 75040086. Has LSCS received any Notice of Violations (NOVs) from the IEPA regarding the FESOP? If so, provide copies of such NOVs.

MA-6. Section 4.2 of the ER states that "[a]ir quality effects of transmission lines were not evaluated because, as is explained in Section 2.2.6 of the ER, no LSCS transmission lines are within the scope of the LSCS license renewal environmental review." Section 2.2.6 of the ER discusses that the offsite transmission lines are not in scope in accordance with footnote 4 of Table B–1 of 10 CFR Part 51, Subpart A. However, Section 2.2.6 does not identify the in-scope transmission lines, which as defined in footnote 4 of Table B–1 are "transmission lines that connect the nuclear power plant to the substation where electricity is fed into the regional power distribution." Section 2.2.6 of the ER identifies electrical connections between the main plant and the LSCS switchyard. Therefore, the Category 1 issue, "Air Quality effects of transmission lines" is applicable to LSCS. Provide an evaluation of any new and significant information that pertains to the Category 1 issue, "Air Quality effects of transmission lines" for those in-scope transmission lines that connect the nuclear power plant to the on-site LSCS switchyard.

MA-7. Table 3.3-2 of the ER provided a greenhouse gas (GHG) emission inventory for the year 2013.

a. Provide annual GHG emission inventory of LSCS for the most recent 5 years.

b. Does Exelon compile LSCS site-specific data for mobile GHG emission sources (e.g. employee vehicles, delivery vehicles)? If so, provide GHG emissions from mobile sources in the annual GHG emission inventory.

c. As provided during the environmental audit, provide a description as to how GHG emissions were calculated for each source (direct stationary combustion, direct CO_2 fugitive, HFC/PFC refrigerants, purchased electricity, and ozone depleting refrigerants).

d. Clarify if Exelon maintains a program to manage stationary refrigeration appliances at LSCS to recycle, recapture, or reduce emissions of ozone depleting substances and is in compliance with Section 608 of the CAA, under Title VI of the CAA.

MA-8. In support of NRC's greenhouse gas, climate change, and cumulative impacts analysis, address the following:

a. Has a river warming trend been observed in the Illinois River during the period of plant operations? Please provide any study(s), relevant information, or historical and current data that covers the last 20 years that support the conclusions reached (e.g., mean annual, seasonal, and/or or monthly water temperature trend for the period of record).

b. Has a warming trend been observed in the cooling pond during the period of plant operations? Please provide any study(s), relevant information, or historical and current data that covers the last 20 years that support the conclusions reached (e.g., maximum observed water temperature values and date of occurrence, mean annual, seasonal, and/or or monthly water temperature trend for the period of record).

MA-9. Describe the LSCS off-site noise environment and primary noise sources in the vicinity of LSCS.

MA-10. The ER states that Illinois does not have regulations or guidelines for environmental noise. However, Illinois has a noise regulation with allowable octave band sound levels according to emitting and receiving land-use classification and time of day (IAC, Title 35: Environmental Protection, Subtitle H: Noise). Please clarify if LSCS is subject to Illinois' noise regulation and if LSCS is in compliance with these regulations.

Aquatic Ecology

AQ-1. Section 3.7.5.1 of the ER (page 3-59) states that since 2001, LSCS has had four reportable fish kills (in July 2001, June 2005, June 2009, and August 2010) in the cooling pond, and one small, unreported (approximately 100 shad) event in 2002. The NRC staff is aware of the fish kill events that occurred in 2001 (ML012330070, ML021330421), 2005 (Event Report Number: 41805), 2009 (ML092040381) and 2010 (ML102371289, ML12285A200).

a. Provide the date of the unreported fish kill in 2002. In addition, summarize the species of fish that were affected by the fish kill.

b. Provide the temperature in the cooling pond during the 2005 fish kill event (June 27-28, 2005). In addition, summarize the species of fish that were affected by the fish kill.

c. Provide a summary of the temperature in the cooling pond (intake at the lake screen house) since 2001. In addition, provide the daily maximum cooling pond blowdown temperatures from the monthly NPDES Discharge Monitoring Reports during July 2001, June 2005, June 2009, and August 2010.

d. Provide the daily maximum cooling pond blowdown temperatures from the monthly NPDES Discharge Monitoring Reports from the past 5 years (2010 through 2014).

e. As documented in NPDES Discharge Monitoring Report submittals, during March, July, and August 2012, IEPA granted Exelon provisional variances from its NPDES permitted discharge temperature limits (under Special Condition 3 of the permit). During the variance period(s), Exelon was required in part to continuously monitor both the discharge and receiving water temperatures and visually inspect all discharge areas at least three times each day to assess the impact on aquatic life. Exelon was also required to notify IEPA and the Illinois Department of Natural Resources (IDNR) if aquatic life was shown to be affected. Describe the circumstances surrounding the need for these variances and also whether Exelon observed any affected aquatic life, and if so, please describe any interactions with IEPA or IDNR and actions that were taken to mitigate the impacts on aquatic life.

f. Describe any mitigation Exelon has implemented to reduce the number of fish kills in the cooling pond.

AQ-2. Section 3.7.5.1 of the ER (page 3-59) states that Exelon and IDNR meet annually to discuss activities within the cooling pond at LSCS, including an assessment of the fish populations within the cooling pond and stocking rates for the following year. The ER further states that smallmouth bass in the LSCS cooling pond do not appear to be thermally stressed.

a. Provide copies of the Lake Management Plan meeting minutes for the past 10 years. In addition, provide copies of any fish population assessments completed in the cooling pond for the past 10 years.

b. Describe why Exelon concluded that smallmouth bass in the LSCS cooling pond do not appear to be thermally stressed.

AQ-3. Section 3.7.1.7 of the ER describes some State-listed species that could occur at or near LSCS.

a. Discuss whether aquatic State-listed species have ever been observed on LSCS or within 6 miles of the river screen house or could potentially occur on LSCS or within 6 miles of the river screen house. Further, describe whether LSCS's operation has ever been known to impinge or entrain a State-listed species. Please consider all aquatic species that IDNR lists as potentially occurring within La Salle County, which include the following:

1. *Alasmidonta viridis, s*lippershell
2. *Elliptio dilatata, s*pike
3. *Fundulus diaphanous,* banded killifish
4. *Moxostoma carinatum,* river redhorse
5. *Moxostoma valenciennesi*, greater redhorse
6. *Notropis heterolepis*, blacknose shiner
7. *Notropis texanus,* weed shiner

b. If State-listed species have been affected by operation of LSCS, provide a summary or documentation of any applicable coordination with IDNR.

AQ-4. Section 4.6 of the ER considers the effects of impingement and entrainment on aquatic biota in the Illinois River. In its analysis, the NRC staff will consider the effects of impingement and entrainment on aquatic biota in both the Illinois River and the cooling pond. To support this analysis, please describe any impingement and entrainment studies that have been conducted on the cooling pond or in the Illinois River.

a. Docket the following reference:

EA Engineering. 2015. Draft Impingement and Entrainment Characterization Study La Salle County Station. May 2015.

b. Provide a summary of the results and assessment of the impacts to fish in the Illinois River based on the information collected in EA Engineering (2015). Within this discussion, compare the impingement and entrainment rates at LSCS relative to other nearby energy facilities that withdraw river water.

c. Docket the final report of EA Engineering (2015) when available.

AQ-5. Section 4.6 of the ER considers the effects of heat shock on aquatic biota in the Illinois River.

a. Section 4.6.3.2 of the ER (page 4-34) states that in its Final Environmental Statement (FES) for LSCS operation, NRC staff predicted that under worst-case conditions (highest blowdown temperature) the thermal plume area (defined by the 3°C/5°F isotherm) would be 2,500 m^2 (0.6 ac) and would encompass approximately 9 percent of the river's cross section. Describe any field studies or modeling studies that have occurred during operations that describe the temperature and size of the thermal plume in the Illinois River, such as ComEd's Mixing Zone Thermal Studies from 1989 through 1995.

b. In its analysis, the NRC staff will consider the effects of heat shock on aquatic biota in both the Illinois River and the cooling pond. To support this analysis, please provide any thermal studies that have been conducted on the cooling pond.

Microbiological Hazards

MH-1. Section 4.5.2.3 of the ER states that water treatment additives are utilized for scale inhibition, silt dispersion, corrosion inhibition, and micro- and macro-biological control. Please provide a summary of Exelon's chlorination procedures for the circulating water and service water systems that includes the chlorine compounds used to treat each system as well as the concentrations and frequency of injection.

Land Use and Visual Resources

LU-1. The ER (Section 3.2, p. 3-5 and 3-6) states that the LSCS site is 1,568 hectares (ha; 3,875 acres (ac)) in size. Of that area, the cooling pond occupies 833 ha (2,058 ac); industrial or developed areas account for 60 ha (150 ac); undeveloped areas account for 101 ha (250 ac); and the LaSalle Fish Hatchery occupies 18 ha (45 ac). Describe the land use(s) for the remaining 556 ha (1,372 ac).

LU-2. The NRC's supplemental environmental impact statement (SEIS) for LSCS license renewal will include a description of fuel at the LSCS site that mirrors Section 3.1.6.1 in

the NRC's 2013 GEIS (ML13107A023). To facilitate the staff's preparation of this section, provide the following information:

a. How much nuclear fuel does each LSCS unit contain in pounds or metric tons? The approximate or average weight is sufficient.

b. On average, what percentage of reactor fuel does Exelon replace during each outage?

c. Describe the use and storage capacity of all onsite fuel storage tanks, including diesel, gasoline, and natural gas.

d. How does LSCS power its heating, ventilating, and air conditioning systems?

e. Does LSCS have an onsite waste oil incinerator(s)? If so, please describe the incinerator(s).

LU-3. Section 3.1 (p. 3-2) of the ER states the following: "The Chicago, Rock Island & Pacific Railroad, in this area parallel to and slightly north of the Illinois River, is the closest railroad line. A 10 km (6 mi) rail spur connects LSCS to the Atchison, Topeka, and Santa Fe Railroad south of the site (ComEd 1977)."

a. Are these railways operational today?

b. Does the onsite rail spur remain active?

c. If these railways are not active, what are the closest operational railways to the LSCS site?

LU-4. Does Exelon maintain a barge slip for LSCS or otherwise receive or ship equipment for LSCS by barge?

LU-5. Regarding the transmission lines and onsite switchyard, please provide the following information.

a. Who owns and operates the onsite switchyards?

b. The Final Environmental Statement for Operation of LaSalle (FES-O; ML14353A388) states that of the four 345-kV lines that connect to the onsite switchyard, two lines connect to the Plano substation and two lines connect to the East Frankfort substation. However, the ER (Section 2.2.6, p. 2-13) states that two lines connect to Braidwood Station, and the East Frankfort substation is not mentioned. Clarify these seemingly contradictory descriptions.

c. The FES-O describes the 138-kilovolt line connections to Mazon, Illinois and Streator, Illinois as "temporary." Do these lines remain active?

d. While the NRC staff understands that Exelon considers the transmission lines connected to the LSCS switchyard to not be in-scope for license renewal (as stated in Section 2.2.6, p. 2-13 of the ER), the NRC staff assumes that ties exist that connect the turbine buildings to the switchyard and that these ties would be in-scope for license renewal. Describe any transmission lines that connect the nuclear power plant to the substation where electricity is fed into the regional power distribution system. Also describe any transmission lines that supply power to the nuclear plant from the grid in accordance with Footnote 4 of Table B–1 of 10 CFR Part 51, Subpart A.

LU-6. Clarify whether the ER's offsite land use information (Section 3.2, p.3-5) is based on the 2006 or the 2011 Multi-Resolution Land Characteristics Consortium (MRLC) National

Land Cover Database. If this section is based on 2006 data, provide any applicable updates to the section resulting from the 2011 data.

Terrestrial Resources

TE-1. List and describe all terrestrial wildlife or habitat surveys that have been completed on the LSCS site, including preoperational studies. Include ongoing monitoring associated with LSCS's "Wildlife at Work" program, if any.

TE-2. Regarding the LSCS Wildlife at Work program, provide the following information.

a. When did Exelon first receive Wildlife Habitat Council certification for its "Wildlife at Work" program?

b. Does Exelon intend to maintain Wildlife Habitat Council certification during the proposed license renewal term?

TE-3. The correspondence between Exelon and the Illinois Department of Natural Resources (IDNR) in Appendix D of the ER indicates that the Marseilles Hill Prairie Illinois Natural Areas Inventory (INAI) is in the vicinity of the LSCS site. Where is this INAI site in relation to the LSCS site?

TE-4. Provide a description of Exelon's landscape maintenance procedures for the LSCS site.

TE-5. Describe any site procedures that Exelon maintains for assessing and mitigating the environmental effects of new ground-disturbing activities or other new site activities.

Federally Protected Species and Habitats

Spec-1. Provide any information on potential or suitable habitat for Indiana bat or northern long-ear bat that may occur on the site, particularly summer roosting habitat. Also, because FWS recently expressed concern regarding "tree-clearing" activities that might affect the Federally-listed northern long-eared bat in relation to the Exelon's Braidwood license renewal application in Will County (letter from L. Nelson, FWS to D Wrona, NRC; May 8, 2015; ML15131A004) and because that species can also occur in LaSalle County, provide a statement identifying any "tree-clearing" activities that may occur at the LaSalle site as a consequence of the proposed license renewal.

Water Resources

SW-1 Provide Illinois Water Inventory Program reports and associated transmittal correspondence (surface water and groundwater portions) for years 2010 through 2014.

SW-2 Provide a narrative description and illustration, if necessary, to clarify the spacing between the bar grills at the River Screen House.

SW-3 Section 4.6.3.1 of the ER references the 1978 Final Environmental Statement, where it is stated that the intake velocity at the face of the travelling screens in the river screen house is 0.2 m/second (0.5 ft/second) during one pump operation and 0.3 m/second (0.9 ft/second) during "occasional" operation. Provide a narrative summary describing any field studies or modeling studies that have occurred during operations that describe the flow through velocity at the traveling screens at the river screen house and at the lake screen house.

SW-4 Docket the text of the LSCS Stormwater Pollution Prevention Plan, June 2013, or latest version.

SW-5 As referenced in ER Section 2.2.3, please clarify how often during the year, on average, more than one river makeup pump needs to be operated to supply the cooling pond. Please indicate in what months two-pump operation occurs and for how long. If possible, provide information for the last 5 years of pump operations.

SW-6 As referenced in ER Section 2.2.3 relative to the circulating water pumps, clarify and provide the rated capacity of the six circulating water pumps located in the lake screen house.

SW-7 As referenced in ER Section 2.2.3 relative to the screen backwash systems for the lake screen house and river screen house, respectively, clarify and briefly describe whether the backwash systems actuate automatically at some set frequency and/or via differential pressure preset, or if operator intervention is required to activate the backwash systems.

SW-8 As referenced in Sections 4.5.1 and 4.6.3.2 of the ER, provide a summary of the Extreme Heat Implementation Plan specific to LSCS, including summaries of appendices I and M. As part of the summary, include description(s) of the individual processes and procedural steps under the plan used to manage the cooling pond during extreme summer temperatures in order meet thermal discharge limits and to manage low-flow conditions on the Illinois River. Also, summarize the types of activities that occur once the temperature is predicted to reach 90 °F or above, or if a fish kill occurs.

SW-9 Identify when the most recent blowdown pipeline and intake pipeline breaks have occurred, respectively. For the most recent blowdown line break, summarize the environmental effects of the break (i.e., volume of effluent released, area affected, results of any analyses conducted of the release); the impact on plant operations if any, and corrective action taken. Also, provide copies of release reports/correspondence associated with breaks that were submitted to regulatory agencies.

SW-10 Provide a water balance/ flow diagram (showing flow rates) for LSCS.

SW-11 Provide: Copies of any Notices of Violation (NOVs), nonconformance notifications, or related infractions received from regulatory agencies associated with NPDES permitted discharges, sanitary sewage systems, groundwater or soil contamination, including spills, leaks, and other inadvertent releases of fuel solvents, chemicals, or radionuclides (covering past 5 years inclusive of 2014). Include correspondence of self-reported violations to responsible agencies.

SW-12 Identify when maintenance dredging was last performed at the river screen house and identify the volume of spoils removed and where disposed of. Indicate if any chemical analysis was performed on the spoils and provide a summary of the results. Provide a copy of any activity report(s) submitted to regulatory agencies associated with the dredging event, if applicable. In addition, does Exelon anticipate conducting any additional dredge and fill activities during the license renewal period? If so, indicate the nature of such anticipated activities and the expected frequency.

SW-13 Provide for review copies of all current Clean Water Act Section 404 permits, and state equivalent permits, issued to Exelon for LSCS activities including the following: Department of Army Permit CEMVR-OD-P-2006-185.

SW-14 Provide a description of any planned operational and maintenance activities (or projects) anticipated to be undertaken during the license renewal term (as possible, identify expected timeframe, location(s) affected, acres disturbed, and activity/project duration).

GW-1 Submit into ADAMS Conestoga-Rovers & Associates. May 2011. NEI 07-07 Update Investigation Report, LaSalle Generating Station, Marseilles, IL, with appendices (oversize maps do not need to be included).

GW-2 Provide currently available 2015 tritium concentration data from monitor wells, used to monitor the cleanup of the spill from the Unit 1 Cycled Condensate Tank.

Socioeconomics

SE-1: Provide updated permanent workforce data, preferably a residential distribution of permanent workforce by county in table format.

SE-2: Provide updated property tax information, similar to the data provided in Tables 3.9-2 and 3.9-3 of the ER. Include data for the years 2013 and 2014, if available.

SE-3: The latest settlement agreement was signed in July 2013 and covers the next 7 tax years starting with the 2013 tax year. What is the expectation for future tax years beyond the next 7 years during the license renewal term? Provide any relevant information.

SE-4: In addition to property tax payment information presented in Section 3.9 of the ER, describe any other major annual support payments (e.g., emergency preparedness fees), one-time payments, and other forms of non-tax compensation (if any) provided to local organizations, communities, and jurisdictions (e.g., county, municipality, townships, villages, incorporated places, and school districts) on behalf of LSCS.

SE-5: Provide information about any anticipated changes in state and local tax laws, rates, and assessed property value or any other recent or anticipated tax payment adjustments that could result in notable future increases or decreases in property taxes or other payments.

Historic and Cultural Resources

HC-1: Provide a discussion of the discrepancy between site boundaries shown on USGS topographic maps versus site boundaries discussed in the license renewal environmental report. Clarify the number and location of historic and cultural sites within the site boundaries. Specifically, state whether sites LS00252, LS00514, and LS00533 are located within Exelon controlled property.

HC-2: The NRC staff's independent review of historic and cultural resources has revealed three additional sites of note: LS00504, LS00527, and LS00540. Are these sites located within Exelon controlled property? If so, please discuss.

HC-3: Provide information regarding management of the land leased by Exelon to third parties. Is Exelon managing this land, or is its management left to the lessee with oversight by Exelon? Discuss the responsibility for managing inadvertent historic or cultural discoveries on leased land.

HC-4: Discuss the applicability of surveys related to historic or cultural resources performed by Exelon lessees to Exelon property (e.g., a survey done by the Illinois National Guard for the training facility that is immediately west of the Exelon property containing the transmission lines and the makeup/blowdown pipelines).

HC-5: Related to Exelon's environmental review procedures for land-disturbing activities, please provide:

a. A description of how inadvertent historical or cultural discoveries on the LSCS site are considered by Exelon staff.

b. A list of Exelon's environmental procedures and a short description of their purpose.

c. A description of the LSCS Cultural Resources Management Plan and its state of implementation.

HC-6: Provide information on management of land-disturbing activities around less-developed areas of the plant site (e.g., mowing), especially near known historic and cultural resources or near unsurveyed areas. Specifically, provide information about responsibility for managing inadvertent discoveries on leased land.

HC-7: Discuss cultural resource training required for LSCS staff.

Alternatives

ALT-1: Provide the available acreage and locations on the LSCS site that would be suitable for alternative energy generation.

ER References to be Docketed

1. (ComEd 1977) Commonwealth Edison Company. 1977. LaSalle County Station Environmental Report Operating License Stage. Volume 1. May 10, 1977. [Terrestrial resource sections including any applicable tables, figures, and appendices]
2. (Exelon Generation 2013b) Exelon Generation. 2013. LaSalle County Generating Station Wildlife Management Plan.
3. (IEPA 2000) Illinois Environmental Protection Agency. 2000. Federally Enforceable State Operating Permit for LaSalle County Generating Station No. 75040086. December 11, 2000.
4. Fritts, M. W. 2013. RE. Request: Illinois River Reports. Illinois River Biological Station and Illinois Natural History Survey. Havana, Illinois. June 24, 2013.
5. EA Engineering, Science, and Technology, Inc. 2014. LaSalle County Station 2013 Fish and Benthos Monitoring and Historical Fish and Benthos Comparisons. Deerfield, IL. March 2014.
6. EA Engineering. 2000. Final Report La Salle Station Aquatic Monitoring RM 249.7-249.8. Prepared for ComEd. Chicago, IL.
7. HDR Engineering. 2010. Zebra Mussel Monitoring Program at LaSalle Nuclear Station, 2009. February 2010.
8. HDR Engineering. 2011. Zebra Mussel Monitoring Program at LaSalle Nuclear Station, 2010. February 2011.
9. HDR Engineering. 2012. Zebra Mussel Monitoring Program at LaSalle Nuclear Station, 2011.

10. HDR Engineering. 2013. Zebra Mussel Monitoring Program at LaSalle Nuclear Station, 2012.

11. HDR Engineering. 2014. Zebra Mussel Monitoring Program at LaSalle Nuclear Station, 2013.

12. Exelon Nuclear. 2009. Evaluation 2009-8466, Rev. 0, Final Issue, Task Report 47 - Environmental Impact Non- Safety Related. LaSalle County Generation Station Units 1 & 2. September 2009.

13. Illinois Department of Public Health. 2014. Marshall Email: to Ranek. RE: LaSalle County Station Units 1 and 2 -- Consultation about thermophilic organisms. February 19, 2014.

14. Illinois Environmental Protection Agency. 2014. Good Email: to Ranek. RE: LaSalle County Station Units 1 and 2 -- Consultation about thermophilic organisms. February 28, 2014.

15. (Kinzer 2013) Kinzer, L. 2013. Kinzer Email: to Connor, Tetra Tech. FW: Levels of Service. LaSalle County Highway Department. May 20, 2013.

16. (Exelon Generation 2013a) Exelon Generation Company, LLC. 2013. Email: FW: Human Resources Issue for Next Week. Email Wood to Ranek, and associated email change. May 31, 2013.

17. (Tetra Tech 2014) Tetra Tech, Inc. Connor Telecon to Selected government agencies and private social welfare organizations. Compilation of Telephone Logs Investigating Potential Existence of Subsistence-Like Populations in LaSalle and Grundy counties, Illinois. March 13, 2014.

18. Ultimate Heat Sink Fish Mortality and Vegetation Evaluation. EC 390348, Rev. 000. October 11, 2012.