



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 2, 2015

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

SUBJECT: ISSUANCE OF SCOPING SUMMARY REPORT ASSOCIATED WITH THE
LASALLE COUNTY STATION, UNITS 1 AND 2, LICENSE RENEWAL
APPLICATION ENVIRONMENTAL REVIEW (TAC NOS. MF5567 AND MF5568)

Dear Mr. Gallagher:

The U.S. Nuclear Regulatory Commission (NRC) staff conducted an environmental impact statement scoping process and solicited public comments from February 3 to April 6, 2015. This process determined the scope of the staff's environmental review of the application for renewal of the facility operating licenses for LaSalle County Station (LSCS), Units 1 and 2. The scoping process is the first step in the development of a plant-specific supplement to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (LR GEIS), for LSCS.

As part of the scoping process, the staff held two public meetings to solicit public input regarding the scope of its environmental review in Ottawa, Illinois, on March 10, 2015. The staff also received written comments via e-mail. The staff prepared the enclosed environmental impact statement scoping process summary report identifying comments received during the scoping period. In accordance with Section 51.29(b) of Title 10 of the *Code of Federal Regulations* (10 CFR) the staff will send a copy of this report to each participant in the scoping process.

The transcripts of the public scoping meetings are available for public inspection in the NRC Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's Agencywide Documents Access and Management System (ADAMS). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html>. The transcripts for the afternoon and evening meetings are available under ADAMS accession numbers ML15083A538 and ML15089A580, respectively. For problems with ADAMS, please contact the NRC's PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737 or by e-mail at pdr.resource@nrc.gov.

M. Gallagher

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The draft supplement to the LR GEIS specific to LSCS is scheduled to be issued in February 2016. A notice of the availability of this draft document and the procedures for providing comments thereon will be published in the *Federal Register*.

Should you have any questions concerning the staff's environmental review of the LSCS license renewal application, please contact Mr. David Drucker, Project Manager, at 301-415-6223 or by e-mail at David.Drucker@nrc.gov.

Sincerely,

/RA/

Brian D. Wittick, Chief
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosure:
Environmental Impact Statement Scoping Process
Summary Report for LSCS

cc: Distribution via Listserv

M. Gallagher

- 2 -

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Should you have any questions concerning the staff's environmental review of the LSCS license renewal application, please contact Mr. David Drucker, Project Manager, at 301-415-6223 or by e-mail at David.Drucker@nrc.gov.

Sincerely,

/RA/

Brian D. Wittick, Chief
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosure:
Environmental Impact Statement Scoping Process
Summary Report for LSCS

cc: Distribution via Listserv

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ADAMS Accession No.: ML15147A380 (transmittal letter and LSCS Scoping Summary Report)

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|--------|-------------|-------------|-----------|-------------|
| OFFICE | LA:RPB2:DLR | PM:RPB2:DLR | OGC | BC:RPB2:DLR |
| NAME | SWoods | DDrucker | JWachutka | BWittick |
| DATE | 6/01/15 | 6/03/15 | 6/17/15 | 7/2/15 |

OFFICIAL AGENCY RECORD

Letter to Michael Gallagher from Brian Wittick dated July 2, 2015

SUBJECT: ISSUANCE OF SCOPING SUMMARY REPORT ASSOCIATED WITH THE
LASALLE COUNTY STATION, UNITS 1 AND 2, LICENSE RENEWAL
APPLICATION ENVIRONMENTAL REVIEW (TAC NOS. MF5567 AND
MF5568)

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**Environmental Impact Statement
Scoping Process**

Summary Report

**LaSalle County Station, Units 1 and 2
Brookfield Township, LaSalle County, IL**

June 2015



**U.S. Nuclear Regulatory Commission
Rockville, Maryland**

Introduction

The U.S. Nuclear Regulatory Commission (NRC) received an application from Exelon Generation Company, LLC (Exelon), dated December 9, 2014, for renewal of the facility operating licenses for LaSalle County Station (LSCS), Units 1 and 2. LSCS is located in Brookfield Township, LaSalle County, Illinois, about 55 miles from Chicago, Illinois. The purpose of this report is to provide a concise summary of the determinations and conclusions reached, including the significant issues identified, as a result of the environmental impact statement scoping process associated with the NRC staff's environmental review of Exelon's license renewal application.

As part of its application, Exelon submitted to the NRC an environmental report (ER) prepared in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 51, which contains the NRC requirements for implementing the National Environmental Policy Act of 1969, as amended (NEPA). The requirements for the preparation and submittal of ERs to the NRC for operating license renewal applications are outlined in 10 CFR 51.53(c)(3). The LSCS ER is publicly available in the NRC's Agencywide Documents Access and Management System (ADAMS) at accession numbers ML14343A883 and ML14343A897. The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html>.

The requirements in 10 CFR 51.53(c)(3) were based upon the findings documented in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (LR GEIS). In the LR GEIS, the NRC staff identified and evaluated the environmental impacts associated with license renewal. The NRC staff determined that a number of environmental impacts were generic to all nuclear power plants (or, in some cases, to plants having specific characteristics such as a particular type of cooling system). These generic issues were designated as "Category 1" impacts. An applicant for license renewal may adopt the conclusions contained in the LR GEIS for Category 1 impacts unless there is new and significant information that may cause the conclusions to differ from those of the LR GEIS. Other impacts that were not determined generically and that require a site-specific review were designated as "Category 2" impacts and are required to be evaluated in the applicant's ER. The Commission also determined that the NRC does not have a role in energy-planning decision making for existing power plants. Therefore, an applicant for license renewal need not provide an analysis of the need for power or the economic costs and benefits of the proposed license renewal.

On February 3, 2015, the NRC initiated the scoping process for the LSCS license renewal application environmental review by issuing a *Federal Register* Notice (80 FR 5793). This notified the public of the NRC staff's intent to prepare a plant-specific supplement to the LR GEIS regarding the application for renewal of the LSCS operating licenses. The plant-specific supplement to the LR GEIS is also referred to as the "Supplemental Environmental Impact Statement" or SEIS. The NRC will prepare the SEIS in accordance with 10 CFR Part 51.

The scoping process provides an opportunity for public participation to identify issues to be addressed in the SEIS and to highlight public concerns and issues. Consistent with 10 CFR 51.29(a), the notice of intent identified the following objectives of the scoping process:

- Define the proposed action;
- Determine the scope of the SEIS and identify the significant issues to be analyzed in depth;
- Identify and eliminate peripheral issues;

- Identify any environmental assessments (EAs) and other environmental impact statements which are being or will be prepared that are related to but are not part of the scope of the SEIS;
- Identify other environmental review and consultation requirements;
- Indicate the schedule for preparation of the SEIS;
- Identify any cooperating agencies; and
- Describe how the SEIS will be prepared.

The NRC's proposed action in this instance is to determine whether to renew the LSCS operating licenses for an additional 20 years.

The scope of the SEIS includes an evaluation of the environmental impacts of license renewal and reasonable alternatives to license renewal. The "Scoping Comments and Responses" section of this report includes specific issues identified by the scoping comments. The subsequent NRC responses explain whether the issues will be addressed in the SEIS, and if so, where in the SEIS they will be addressed.

Throughout the scoping process, the NRC staff identified and eliminated peripheral issues. This report provides responses to comments that were determined to be out of the scope of the license renewal application environmental review. Those comments that were considered to be in scope will be evaluated and documented in the SEIS.

The NRC staff is also developing an environmental assessment in support of a license amendment request (LAR) to modify the LSCS ultimate heat sink. By letter dated July 12, 2013, LSCS submitted an LAR which proposes to modify Technical Specification 3.7.3, "Ultimate Heat Sink (UHS)," by changing the maximum allowable temperature of the UHS from a fixed limit of 101.25 degrees Fahrenheit to a variable limit between 101.25 and 104 degrees Fahrenheit, depending on the time of day. The environmental assessment being developed in support of this LAR is scheduled to be issued in June 2015.

In parallel with its NEPA review, the NRC staff is consulting with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act of 1973 (ESA) to evaluate the potential impacts of the operation of LSCS for an additional 20 years on the continued existence of endangered and threatened species and on their critical habitat. The NRC staff is also consulting with the Advisory Council on Historic Preservation in order to fulfill its obligations under the National Historic Preservation Act of 1966 (NHPA).

The NRC staff expects to publish the draft SEIS in February 2016.

The NRC staff did not identify any cooperating agencies for this review. However, the NRC, as an independent regulatory agency, routinely and extensively consults with Federal, State, Tribal, and local entities during the development of environmental impact statements and environmental assessments.

The SEIS will be prepared by the NRC staff with contract support from Pacific Northwest National Laboratory and the Center for Nuclear Waste Regulatory Analyses.

The scoping process included two public meetings which were held on March 10, 2015, at the LaSalle County Emergency Management Agency, 9835 Dayton Pike, Ottawa, Illinois. The NRC issued press releases, purchased newspaper advertisements, and distributed flyers locally to

advertise these meetings. Approximately 30 people attended the meetings. Each session began with NRC staff members providing a brief overview of the license renewal process and the NEPA environmental review process. Following the NRC's prepared statements, the meeting was opened for public comments. The official transcripts for the afternoon and evening meetings are publicly available at the NRC Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's ADAMS under accession numbers ML15083A538 and ML15089A580, respectively. A summary of the scoping meetings (ML15091A329) was issued on May 22, 2015. Persons who encounter problems in accessing documents in ADAMS should contact the NRC's PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737 or by e-mail at pdr.resource@nrc.gov.

The NRC invited the applicant; Federal, State, and local government agencies; Tribal governments; local organizations; and individuals to participate in the scoping process by providing oral comments at the scoping meetings or by submitting written comments before the end of the scoping period on April 6, 2015.

At the conclusion of the scoping period, the NRC staff reviewed comments, transcripts, meeting notes, and all other material submitted in order to identify individual comments. Table 1 identifies these individual comments. Table 1 also provides the accession numbers for the source of each comment.

Table 1. Individuals Providing Comments During the Scoping Period.

Each commenter is identified along with his/her affiliation and how the comment was submitted.

| Commenter | Affiliation (if stated) | Comment source | ADAMS # |
|-------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------|
| Reed Wilson* | Deputy District Director for U.S Congressman Kinzinger, 16 th District, Illinois | Afternoon meeting Evening meeting | ML15083A538 ML15089A580 |
| Roger Blomquist* | Argonne National Laboratory | Afternoon meeting | ML15083A538 |
| Doug O'Brien* | Illinois Clean Energy Coalition | Afternoon meeting | ML15083A538 |
| Bryon Mooney* | LaSalle County Station | Afternoon meeting | ML15083A538 |
| John Keenan* | LaSalle County Station | Afternoon meeting Evening meeting | ML15083A538 ML15089A580 |
| Mike Gallagher* | Exelon Generation Company, LLC | Afternoon meeting Evening meeting | ML15083A538 ML15089A580 |
| Larry Louis* | Illinois Valley Building and Construction Trades Council | Afternoon meeting Evening meeting | ML15083A538 ML15089A580 |
| Shelley Ocepek* | United Way | Afternoon meeting | ML15083A538 |
| Linda Lewison | Nuclear Energy Information Service | Evening meeting | ML15089A580 |
| Marvin Lewis | | Evening meeting | ML15089A580 |
| Jim Carlson* | Seneca High School Superintendent | Evening meeting | ML15089A580 |
| Jay Houston* | LaSalle County Station | Evening meeting | ML15089A580 |
| Jerry Hicks* | LaSalle County Board Chairman | Evening meeting | ML15089A580 |
| Adam Kinzinger* | U.S. Congressman, 16 th District, Illinois | Letter | ML15104A317 |
| Nelson Dewey | | Email | ML15089A353 |

* - Comments in support of LSCS license renewal or for LSCS and nuclear power in general.

Comments identified with an asterisk after the commenter's name in Table 1 above were in support of the license renewal of LSCS or for nuclear power in general. These comments are not within the scope of this license renewal review and, thus, will not be discussed further.

Comments received from Linda Lewison, Marvin Lewis, and Nelson Dewey are provided below and each is followed by an NRC staff response. The meeting transcripts and written comments are included in their original form at the end of this report.

The NRC plans to issue a draft SEIS (DSEIS) for public comment in February 2016. The comment period will offer the next opportunity for the applicant, interested Federal, State, and local government agencies, Tribal governments, local organizations, and other members of the public to provide input to the NRC's environmental review process. The comments received on the DSEIS will be considered in the preparation of the final SEIS (FSEIS). The FSEIS, along with the NRC staff's safety evaluation report (SER), will provide much of the basis for the NRC's ultimate decision on Exelon's application for renewal of the LSCS operating licenses.

LaSalle County Station, Units 1 and 2 - Scoping Comments and Responses

Comment from Linda Lewison (starts on line 23 of page 22 of the evening transcript):

"...what is in the fuel pools now, how much radioactive waste is in the fuel pools, and what are the plans when you go forward to put in and take out radioactive waste to and from the fuel pools. And what do you plan to do with the radioactive waste during the future plans for LaSalle.

NRC Staff Response: *Exelon stores the LSCS's spent nuclear fuel in its spent fuel pools and in dry casks. The LSCS has one spent fuel pool per unit. A spent fuel pool is a structure constructed of steel-reinforced concrete walls with a stainless steel liner, and filled with water. The spent fuel pools are located inside the plant's protected area. The NRC regularly inspects LSCS's spent fuel storage program to ensure the safety of the spent fuel stored in the spent fuel pools.*

As stated on page 2-7 of Exelon's Environmental Report (ML14343A883): "The Unit 1 spent fuel storage pool is designed for approximately 520 percent of the full core load or 3,986 fuel assemblies. For Unit 2, the spent fuel storage pool is designed for approximately 530 percent of the full core load or 4,073 fuel assemblies." Generally, inventories of spent fuel pools are not made publicly available for security reasons. For more information on the management of spent fuel at LSCS, please contact Viktoria Mitlyng at 630-829-9663 or by email at Viktoria.Mitlyng@nrc.gov.

Exelon also stores the LSCS's spent nuclear fuel in NRC approved dry cask canisters made of leak-tight welded and bolted steel at an on-site independent spent fuel storage installation (ISFSI). A typical dry cask storage system is detailed at the following website: <http://www.nrc.gov/waste/spent-fuel-storage/diagram-typical-dry-cask-system.html>. The NRC regularly inspects LSCS's dry cask storage system to ensure that it complies with NRC requirements. The latest NRC inspection of the LSCS ISFSI is documented in NRC Integrated Inspection Report 05000373/2013003; 05000374/2013003; 07200070/2013001 dated August 2, 2013. As stated on page 29 of this report, "[n]o findings were identified" during the inspection of the LSCS ISFSI. This report is available at ADAMS Accession No. ML13214A356.

Spent fuel transfers to the LSCS ISFSI began in May 2010. Currently, 17 LSCS ISFSI storage locations are occupied. Exelon plans to continue transferring spent fuel from the spent fuel pools to the ISFSI on a periodic basis.

The current license expiration dates for LSCS, Unit 1 and Unit 2, are April 17, 2022 and December 16, 2023, respectively. The requested renewals would extend the license expiration

dates to April 17, 2042 and December 16, 2043. The NRC's safety requirements for the storage of spent nuclear fuel during licensed operations ensure that the expected increase in the volume of spent fuel during the license renewal term can be safely stored on site with small environmental effects.

Spent nuclear fuel will be discussed in Chapter 3 of the LSCS DSEIS. The NRC's evaluation of impacts from the onsite storage of spent nuclear fuel, offsite radiological impacts of spent nuclear fuel and high-level waste disposal, and, the uranium fuel cycle will be addressed in Chapter 4 of the LSCS DSEIS.

Comment from Marvin Lewis (starts on line 7 of page 27 of the evening transcript): “Look, back in the '60s and '50s, '70s the enrichment of U235 was around two or three percent. The coefficient's of criticality which are predictions sort of, when the darn things going to get too hot to handle, was designed around those enrichments. Now I read, in your paperwork, that the enrichment is above five percent. I have not, I've been following it for years. Yes, I've been following it through the '60s and '70s and '80s. And my question is this, I haven't seen definitively how a criticality, at the wrong time, is being avoided. Usually using something called a coefficient of criticality or COEFF, or KEFF rather, subscript eff in the calculations. I have not seen it. Now you're saying that this is safe. And I can't understand that. If the darn plant is designed for two or three percent enrichment of uranium 235, and now you're saying it's safe at a five percent enrichment? I would say this raises flags, kind of like a maintenance tag hiding a little red warning light at Three Mile Island. If you understand that accident. And that's my point. I don't see it in your paperwork. Where do you look at the criticality and make sure it's safe when it should be.

NRC Staff Response: *This comment incorrectly states that “enrichment is above five percent.” Instead, as stated on page 2-7 of Exelon's Environmental Report (ML14343A883): “Both LSCS units are operating using low-enriched, uranium dioxide fuel with enrichment not exceeding a nominal 5.0 percent by weight of uranium-235....”*

This comment also incorrectly states that the “plant is designed for two or three percent enrichment of uranium 235.” Instead, as provided by the NRC's regulations at 10 CFR 50.68(b)(7): “The maximum nominal U-235 enrichment of the fresh fuel assemblies is limited to five (5.0) percent by weight.”

Although it is true that, generally, fuel enrichment was lower in the early years of nuclear power plant operation, more recently, fuel cycle times have increased and enrichment has increased to support those longer cycle times. However, the relevant core physics models have been validated up to the current U235 enrichment limit of 5.0%. This limit has existed for decades. Startup core physics testing, surveillance requirements, and core monitoring continue to demonstrate the accuracy of these core physics models.

Fuel enrichment is not within the scope of license renewal, and, therefore, will not be discussed further in the license renewal application review process.

Comment from Nelson Dewey (received via email, which is attached): Before hydraulic fracturing, there was 1 or 2 earthquakes/year in Oklahoma. Now there are 1 to 2 earthquakes/day. LaSalle Station is sited north of the northern reach of New Albany Shale. Clinton sits just at the north end of this formation. Illinois is allowing hydraulic fracturing to begin in the shale field south of Clinton to the Kentucky border. Follow the KY - TN line to

Missouri and you reach New Madrid and a potential source of pent-up seismic activity. LaSalle and Clinton was sited after a geologic study determined how to build the sites to withstand the most credible earthquakes. Those studies did not account for fracking.

How will that analysis change when fracking begins in Southern Illinois?

How is that analysis accounted for in the License Renewal application?

How will the potential increased seismic activity affect the safety of LaSalle as it operates beyond their original 40 year life?

Please note the below reference to the North Anna fuel and nuclear detector motion during the Mineral VA earthquake. REF: <http://pbadupws.nrc.gov/docs/ML1127/ML11272A129.pdf>

VIRGINIA ELECTRIC AND POWER COMPANY NORTH ANNA POWER STATION UNITS 1 AND 2 POST-EARTHQUAKE RESTART READINESS DETERMINATION PLAN STATUS UPDATE

Page 12: The RCE concluded the direct cause for both the Unit 1 and Unit 2 reactor trips was the initiation of the Power Range Nuclear Instrument high negative flux rate reactor trip. Both Unit 1 and Unit 2 met the required coincidence of 2 out of 4 Power Range Nuclear Instruments (PRNI) with greater than a 5% change in 2.25 seconds.

The Root Cause of the negative flux rate event was a combination of seismically induced conditions, which include core barrel movement, detector movement, and fuel motion.

The additive effects of the combined conditions resulted in momentary changes in indicated flux and under-moderated core conditions as evidenced by the oscillatory, but overall decreasing flux profiles from both Unit 1 and Unit 2.

NRC Staff Response: *Nuclear power plants, including LSCS, are designed and built to withstand site-specific ground motion based on their location and nearby earthquake activity. This seismic design basis is established during the initial siting process, using site-specific seismic hazard assessments. For each nuclear power plant site, applicants estimate a design-basis ground motion based on earthquake sources, wave propagations, and site responses, which is then accounted for in the design of the plant. In this way, nuclear power plants are designed to withstand the maximum credible earthquake for a given site.*

However, since methods of assessing seismic hazards evolve over time and the scientific understanding of earthquake hazards improve, the NRC's understanding of the seismic hazard for a given nuclear power plant may change over time. As new seismic information becomes available, the NRC evaluates the new information to determine if any changes are needed at existing plants or to NRC regulations. This NRC evaluation of the impact of seismic activity on a nuclear power plant is an ongoing oversight process that is separate from the license renewal process.

On December 23, 2011, the Consolidated Appropriations Act, Public Law 112-074, was signed into law. Section 402 of the law directs the NRC to require reactor licensees to re-evaluate the seismic hazards at their sites against current applicable Commission requirements and thereafter when appropriate, as determined by the Commission. In 2012, the NRC required all licensees to reevaluate the seismic hazards at their sites, using updated seismic information and present-day regulatory guidance and methodologies. The purpose of that request was to gather information to update the seismic hazards analysis to enable the NRC staff to determine whether individual site licenses should be modified, suspended, or revoked. For further

information on seismic reevaluations of U.S. nuclear power plants visit:
<http://www.nrc.gov/reactors/operating/ops-experience/japan-dashboard/seismic-reevaluations.html>

LSCS Scoping Comments Source Documents

The following pages contain one letter, one email, and the public scoping meetings transcripts, which constitute the LSCS scoping comments source documents.