

10 CFR 50.90

RS-10-007
January 6, 2010

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Subject: Request for License Amendment to Allow Receipt and Storage of Low-Level
Radioactive Waste at LaSalle County Station, Units 1 and 2

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to Facility Operating License (FOL) Nos. NPF-11 and NPF-18 for LaSalle County Station (LSCS), Units 1 and 2, to revise license paragraph 2.B.(5). The proposed change will enable LSCS to possess byproduct material from Braidwood Station, Units 1 and 2 (Braidwood), Byron Station, Units 1 and 2 (Byron), and Clinton Power Station, Unit 1 (CPS). Specifically, the revised license paragraph would enable EGC to store low-level radioactive waste (LLRW) from Braidwood, Byron, and CPS in the LSCS Interim Radwaste Storage Facility (IRSF). The LSCS IRSF already provides storage for LLRW generated at LSCS.

On July 1, 2008, the EnergySolutions, LLC LLRW Disposal Facility in Barnwell, South Carolina (EnergySolutions - Barnwell), as a LLRW disposal facility in the Atlantic Interstate Low-Level Radioactive Waste Management Compact Commission, ceased accepting LLRW shipments from out-of-compact generators. This action, which was promulgated by the state of South Carolina, precluded the shipment of Class B and Class C (Class B/C) LLRW from EGC nuclear stations in Illinois and Pennsylvania to an outside disposal facility, since there are no other facilities that currently accept Class B/C LLRW from facilities in Illinois and Pennsylvania. EGC will continue to dispose of Class A LLRW that is generated by these EGC nuclear stations at the EnergySolutions LLRW Disposal Complex in Clive, Utah.

Due to the closure of EnergySolutions - Barnwell to non-compact members, as well as the cost to construct alternate storage facilities, EGC has evaluated and verified the technical, regulatory, and legal acceptability of storage of Class B/C LLRW from Braidwood, Byron, and CPS in the existing LSCS IRSF. However, this evaluation also determined that a license amendment was required to implement the proposed storage strategy.

This license amendment request is subdivided as follows:

- Attachment 1 provides a description and evaluation of the proposed change
- Attachment 2 provides a mark-up of the LSCS Units 1 and 2 FOL pages
- Attachment 3 provides a technical report supporting the proposed amendment
- Attachment 4 provides a design basis accident dose assessment calculation that is referenced in Attachment 3
- Attachment 5 provides a container spacing calculation that is referenced in Attachment 3

The proposed change has been reviewed by the LSCS Plant Operations Review Committee and approved by the Nuclear Safety Review Board in accordance with the requirements of the EGC Quality Assurance Program.

EGC requests approval of the proposed amendment by January 7, 2011. Once approved, the amendment will be implemented within 30 days.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," EGC is notifying the State of Illinois of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State Official.

There are no regulatory commitments contained in this letter. If you have any questions concerning this letter, please contact Mr. John L. Schrage at (630) 657-2821.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 6th day of January 2010.

Respectfully,



Darin M. Benyak
Director - Licensing

Attachments:

1. Evaluation of Proposed Change
2. Proposed Mark-up of FOLs NPF-11 and NPF-18
3. LaSalle Station IRSF LAR Support Technical Report Supporting Engineering Change (EC) No. 375636, October 15, 2009
4. Calculation L-003430, "LaSalle IRSF Design Basis Event Dose Assessment"
5. Calculation No. L-003429, "LaSalle IRSF Storage Bay HIC Spacing to Prevent Spread of a Postulated HIC Fire"

ATTACHMENT 1

Evaluation of Proposed Change

- 1.0 DESCRIPTION AND BACKGROUND
- 2.0 PROPOSED CHANGE
- 3.0 REGULATORY FRAMEWORK AND LEGAL AUTHORITY
- 4.0 TECHNICAL ANALYSIS
- 5.0 REGULATORY ANALYSIS
 - 5.1 No Significant Hazards Consideration
 - 5.2 Applicable Regulatory Requirements/Criteria
- 6.0 ENVIRONMENTAL CONSIDERATION

ATTACHMENT 1

Evaluation of Proposed Change

1.0 BACKGROUND AND DESCRIPTION

1.1 Background

During the mid-1980s, Commonwealth Edison Company (i.e., the original licensee for LaSalle County Station (LSCS)) designed and constructed an interim radwaste storage facility (IRSF) at LSCS. The IRSF was designed to store low-level radioactive waste (LLRW) on an interim basis in order to offset the postulated lack of disposal capability in the event that existing disposal facilities, such as the EnergySolutions, LLC LLRW disposal facility in Barnwell, South Carolina, (EnergySolutions - Barnwell), ceased accepting LLRW from licensees that are not members of the Atlantic Interstate Low-Level Radioactive Waste Management Compact Commission (Atlantic Compact). The LLRW Policy Amendments Act of 1985 allowed compacts with operating LLRW disposal sites to deny access to generators in states and compacts that had not developed their own disposal capacity.

Prior to July 1, 2008, Exelon Generation Company, LLC (EGC) (i.e., the current LSCS licensee) transported, for permanent disposal, Class B and Class C (Class B/C) LLRW from LSCS to EnergySolutions - Barnwell and Class A LLRW to the EnergySolutions, LLC LLRW Disposal Complex in Clive, Utah (EnergySolutions - Clive).

On July 1, 2008, EnergySolutions - Barnwell, as a LLRW disposal facility in the Atlantic Compact, ceased accepting LLRW shipments from out-of-compact generators. This action, which was promulgated by the state of South Carolina, precluded the shipment of Class B/C LLRW from EGC nuclear stations in Illinois and Pennsylvania to an outside disposal facility because there are no other facilities that currently accept Class B/C LLRW from facilities in either of those states. EGC nuclear stations in these two states will continue to transport Class A LLRW generated at those facilities to EnergySolutions - Clive for disposal.

Due to the inability to ship Class B/C LLRW to an external disposal facility, the LSCS IRSF will be used to store primarily Class B/C LLRW, as well as Class A LLRW, if needed. Additionally, other EGC nuclear stations located in Illinois that did not build an IRSF (i.e., Braidwood Station (Braidwood), Byron Station (Byron), and Clinton Power Station, Unit 1 (CPS)) will need access to the Class B/C LLRW storage capacity within the LSCS IRSF.

Based on the cost to construct additional Class B/C LLRW storage facilities at other EGC facilities in Illinois, and the excess storage capacity at the LSCS IRSF, EGC has evaluated and verified the legal, technical, and regulatory acceptability of the storage of Class B/C LLRW that is generated at Braidwood, Byron, and CPS in the existing LSCS IRSF. This evaluation concluded that the proposed storage option complies with all technical and regulatory requirements. However, the EGC evaluation determined that a license amendment is necessary to implement this proposed LLRW storage option.

1.2 Description

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," EGC requests an amendment to Facility Operating License (FOL) Nos. NPF-11 and NPF-18 for LSCS, Units 1 and 2, to revise license paragraph 2.B.(5). The proposed change will enable LSCS to possess byproduct material from Braidwood, Byron, and CPS.

ATTACHMENT 1

Evaluation of Proposed Change

Specifically, the revised license paragraph would enable EGC to store LLRW generated at Braidwood, Byron, and CPS in the LSCS IRSF. The LSCS IRSF already provides storage for LLRW generated at LSCS.

2.0 PROPOSED CHANGE

The proposed license amendment revises license paragraph 2.B.(5) of FOLs NPF-11 and NPF-18 as described below. Changes to the existing license paragraph are highlighted with italics and underlining.

- (5) Exelon Generation Company, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of LaSalle County Station, Units 1 and 2, and such byproduct materials as may be produced by the operation of Braidwood Station, Units 1 and 2, Byron Station, Units 1 and 2, and Clinton Power Station, Unit 1.

3.0 REGULATORY FRAMEWORK AND LEGAL AUTHORITY

Since 1981, the NRC has issued a number of generic communications providing information to licensees regarding the storage of LLRW on licensees' sites. These generic communications are summarized in Regulatory Issue Summary (RIS) 2008-32, "Interim Low Level Radioactive Waste Storage at Reactor Sites." The purpose of RIS 2008-32 was to clarify the current NRC position regarding the long-term, interim storage of LLRW at facilities licensed under 10 CFR Part 50 (Part 50), "Domestic Licensing of Production and Utilization Facilities."

A Part 50 licensee's legal authority to possess byproduct material that is generated at the licensee's facility (e.g., LLRW) is established by a specific paragraph in the FOL. This paragraph invokes and references 10 CFR Part 30 (Part 30), "Rules of General Applicability to Domestic Licensing of Byproduct Material," as well as 10 CFR Part 40, "Domestic Licensing of Source Material," and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material."

In the case of LSCS, license paragraph 1.I in NPF-11 and NPF-18 authorizes the receipt, possession, and use of byproduct material in accordance with NRC regulations in Part 30. This authorization is then implemented by license paragraph 2.B.(5). However, these applicable FOL paragraphs, as well as RIS 2008-32, address the legal and technical aspects of on-site LLRW storage generated by a Part 50 licensee, and are silent on the storage of LLRW generated by a different Part 50 licensee.

The following discussion establishes the regulatory framework and legal authority for NRC review and approval of a Part 50 license application to possess byproduct material, source material, and special nuclear material. The discussion then extends this regulatory framework to the establishment of the NRC's legal authority to review and approve an application for a 10 CFR 50.90 license amendment request (LAR) to possess byproduct material, source material, and special nuclear material that is generated at a different facility licensed under Part 50. Multiple examples are provided where the NRC has applied this regulatory framework to exercise its legal authority to approve such an LAR.

ATTACHMENT 1

Evaluation of Proposed Change

In addition, the discussion below summarizes the technical and regulatory criteria, including the regulatory source documents that would be referenced by the NRC to review and approve this type of LAR.

3.1 License to Possess Byproduct Material

The Atomic Energy Act of 1954 (the Act), as Amended (P.L. 83-703), establishes the authority of the NRC to establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material as the NRC may deem necessary or desirable to promote the common defense and security or to protect health or to minimize danger to life or property.¹

Furthermore, the Act authorizes the NRC to issue general or specific licenses to applicants seeking to use byproduct material for research or development purposes, for medical therapy, industrial uses, agricultural uses, or such other useful applications as may be developed. Such licenses shall be issued in accordance with the provisions of the Act and subject to such conditions as the NRC may by rule or regulation establish to effectuate the purposes and provisions of the Act.²

10 CFR 1.43, "Office of Nuclear Reactor Regulation" (NRR) establishes the responsibility and authority of NRR to develop, promulgate, and implement regulations, policies, programs, and procedures for all aspects of licensing the receipt, possession, and ownership of source, byproduct, and special nuclear material used or produced at facilities licensed under 10 CFR 50, "Licensing of Production and Utilization Facilities."

In accordance with Part 50, NRR issued, by letters dated April 17, 1982 and December 16, 1983, FOLs NPF-11 and NPF-18, for LSCS, Units 1 and 2, respectively. In these FOLs, the NRC found that the receipt, possession, and use of byproduct material, subject to the conditions and requirements of the FOLs, would be in accordance with the NRC's regulations in Part 30.

Therefore, in accordance with the Act and Part 30, the NRC granted to LSCS, by paragraph 2.B.(5) of FOLs NPF-11 and NPF-18, the authorization to possess, but not separate, byproduct material generated by the operation of LSCS, Units 1 and 2.

In addition, paragraph C of FOLs NPF-11 and NPF-18 establishes that the FOLs are subject to the conditions specified in the NRC's regulations, as set forth in 10 CFR Part 1, as well as all applicable provisions of the Act; the rules, regulations and orders of the NRC (i.e., including Part 30); and specific license conditions specified in the FOL.

When taken as a whole, the regulatory progression from the Act, to the regulations, and then to the FOL establishes the regulatory framework and legal authority that the NRC employed to issue "embedded" Part 30 licenses, within the LSCS Units 1 and 2 Part 50 FOLs.

¹ 42 USC 2201, "Chapter 14 – General Authority, Sec. 161, General Provisions"

² 42 USC 2111, "Chapter 8 – Byproduct Material, Sec. 81, Domestic Distribution"

ATTACHMENT 1

Evaluation of Proposed Change

In addition, this regulatory progression establishes the regulatory framework and legal authority for the NRC to amend the embedded Part 30 licenses in the LSCS FOLs by amending license paragraph 2.B.(5) of the LSCS Part 50 FOLs.

The concept of embedded Part 30 licenses, within the Part 50 license, as well as the NRC's legal authority to amend the embedded license is also highlighted in SECY-94-198, "Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste," as well as RIS 2008-32. As stated in SECY-94-198, NRC regulations do not require a separate Part 30 license for storage of LLRW by a Part 50 licensee, since a Part 50 licensee is already authorized under Part 30 to possess byproduct materials.

3.2 Application of Legal Authority

NUREG-0386, "United States Nuclear Regulatory Commission Staff Practice and Procedure Digest," January 2009 update, provides a digest of significant decisions of the NRC, the Atomic Safety and Licensing Appeal Board Panel, and the Atomic Safety and Licensing Board Panel. These decisions collectively interpret 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders." Although the Appeal Board Panel was abolished in 1991, NUREG-0386 stipulates that Appeal Board precedent may still be cited, to the extent it is consistent with more recent case law and the current rules of practice.

Given this guidance, the validity of the legal framework and authority for amending "embedded" 10 CFR Part 30, 40, and 70 licenses was endorsed by the Atomic Safety and Licensing Appeal Board in ALAB-651, 14 NRC 307, 314 (1981), "*Duke Power Co. (Amendment to Materials License SNM-1773 - Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station).*" In the context of spent nuclear fuel storage, the Appeal Board recognized that "the waste disposal problem confronting nuclear power plant operators stems from the limited storage capacity of on-site reactor spent fuel pools (taken in conjunction with the unavailability of off-site storage repositories)." The *Duke Power* Appeal Board further noted that "when the exhaustion of that capacity approaches[,] the plant operator likely will have no more than four choices: expansion of the spent fuel pool's storage capability by reracking or some other means; building of an independent spent fuel storage installation (ISFSI) either on-site or off-site; transportation of the spent fuel to another of its facilities; and shutdown of the plant." According to the Appeal Board, "where available, each of these alternatives ha[s] manifest independent utility." Ultimately, the Appeal Board authorized the Director of NRR to issue a license amendment allowing Duke Power Company to transport spent fuel from Oconee Nuclear Station to McGuire Nuclear Station for storage, explicitly endorsing the legal validity of transporting spent nuclear fuel for storage from one nuclear plant to another. Following the Appeal Board Order, the NRC, on October 27, 1981, granted McGuire Nuclear Station, Unit 1, a license amendment to receive, possess, and store irradiated fuel assemblies containing special nuclear material from Oconee Nuclear Station, Units 1, 2, and 3.

The NRC has also authorized other Part 50 licensees, either through a license amendment or license condition, to receive, possess, and store source and other special nuclear material from different Part 50 licensees that are owned by the same company.

1. On April 21, 1986, the NRC granted a license amendment to North Anna Power Station, Units 1 and 2, allowing it to receive, possess and store up to 500 spent fuel assemblies

ATTACHMENT 1

Evaluation of Proposed Change

from the Surry Power Station, Units 1 and 2. North Anna and Surry are both owned by the same company and located in Virginia approximately 86 miles apart. In its Safety Evaluation (SE) issued on July 2, 1984, the NRC concluded that "(1) there is reasonable assurance that the health and safety of the public will not be endangered by operation and transport in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and will not be inimical to the common defense and security or to the health and safety of the public." Furthermore, the NRC conducted an Environmental Assessment and concluded that the amendment involved "no significant changes in types or significant increase in the amounts of any effluents that may be released off-site and there is no significant increase in individual or cumulative occupational radiation exposure." As such, the NRC determined that an Environmental Impact Statement (EIS) was not required for the license amendment.

2. In a letter and SE dated January 17, 1985, the NRC issued an FOL to Catawba Nuclear Station, Unit 1, that included a license paragraph allowing it to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of McGuire Nuclear Station, Units 1 and 2, and Oconee Nuclear Station, Units 1, 2 and 3. On May 15, 1986, Catawba Nuclear Station, Unit 2 was granted an operating license with the same license condition.
3. In a letter and SE dated January 12, 1987, the NRC issued an FOL to Shearon Harris Nuclear Power Plant, Unit 1 that included a license paragraph allowing it to receive and possess, but not separate, byproduct and special nuclear materials produced at Brunswick Steam Electric Plant, Units 1 and 2, and Robinson Steam Electric Plant, Unit 2.

The NRC has also allowed at least one Part 50 licensee to receive, possess and use, but not separate, fuel assemblies and fuel channels from another Part 50 licensed facility not owned by the same company. Specifically, in a letter and SE dated June 23, 1993, the NRC granted a license amendment allowing Limerick Generating Station (LGS), Units 1 and 2, to receive, possess, and use, but not separate, such source, byproduct, and special nuclear materials as contained in the fuel assemblies and fuel channels from the Shoreham Nuclear Power Station. The intent of the LGS license amendment request was to enable LGS to purchase the fuel assemblies from the Shoreham Nuclear Power Station and use the fuel at LGS. The NRC SE concluded that there was reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, such activities will be conducted in compliance with the NRC's regulations, and the issuance of the amendments would not be inimical to the common defense and security or to the health and safety of the public. Furthermore, the NRC conducted an Environmental Assessment where it made a finding of no significant impact.

The same reasoning provided by the Appeal Board in the 1981 *Duke Power Co.* decision also applies to the review and approval of a license amendment that would enable a company to transport LLRW from one nuclear power plant to another for storage. As with spent nuclear fuel in the 1981 *Duke Power Co.* decision, there is a current LLRW disposal problem due to the July 2008 action by the state of South Carolina that prohibits the EnergySolutions - Barnwell facility from accepting LLRW from licensees that are located in non-Atlantic Compact states, such as Illinois and Pennsylvania. Therefore, based on limited on-site storage space for Class B/C LLRW and the unavailability of disposal facilities for Class B/C LLRW, nuclear power plant operators should have the same options regarding storage of LLRW that they have for spent nuclear fuel

ATTACHMENT 1

Evaluation of Proposed Change

(i.e., the four choices described in the *Duke Power Co.* Appeal Board decision, one of which would be the shipment of LLRW to another plant for storage). In fact, as discussed below, there is direct precedent for allowing one Part 50 licensee to store LLRW that is generated at another Part 50 licensee's facility, using the same regulatory framework and legal authority.

In a letter and SE dated July 18, 2000, the NRC issued a license amendment that allowed the Tennessee Valley Authority (TVA) to possess, at Sequoyah Nuclear Plant (SNP), Units 1 and 2, source, byproduct, and special nuclear material that was produced at Watts Bar Nuclear Plant, Unit 1 (WBN). The TVA LAR requested an amendment of SNP FOL Paragraph 2.B.(5) to allow possession of source, byproduct, and special nuclear material produced at WBN, as well as that produced at SNP.

The NRC Staff granted the request based on the determination that the increased radioactivity would have an insignificant effect on safe operation of the SNP units, and that increases in radiation dose to workers and the general public would be very minor. Furthermore, the NRC concluded that the amendment involved no significant increase in the amounts, and no significant change in the types, of any effluents that may be released off-site, and that there was no significant increase in individual or cumulative occupational exposure.

As demonstrated above, NRC has both the legal authority and a regulatory framework for the review and approval of a 10 CFR 50.90 license amendment request that would allow a Part 50 licensee to receive and possess byproduct material from another Part 50 licensee. Furthermore, the NRC has exercised this authority multiple times to approve requests from a Part 50 licensee to store either spent nuclear fuel or LLRW generated at another Part 50 licensed facility.

4.0 TECHNICAL EVALUATION

4.1 Description of the LSCS IRSF and LLRW

The LSCS IRSF was originally designed to comply with specific NRC regulatory guidance documents at the time, primarily Generic Letter (GL) 81-38, "Storage of Low-Level Radioactive Wastes at Power Reactor Sites." In addition, the requirements of 10 CFR Part 20, "Standards for Protection Against Radiation," and 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operations," formed the basis for the design of the IRSF with respect to exposure to radiation. In that regard, the IRSF features 30-inch concrete shield walls on the peripheral wall for direct transmission protection, 15-inch concrete walls above the crane rail for scatter and skyshine protection, and a concrete roof that is 12 to 15 inches thick for skyshine protection. This design ensured that the dose rate at the exterior wall of the IRSF, the nearest restricted area boundary, and the nearest residence, when the IRSF is filled to capacity would be less than the limits specified in 10 CFR Part 20 and 40 CFR Part 190.

As part of the original design, an analysis was also conducted to assess the potential radiological impact of a postulated container drop accident that spilled the entire contents of a worst case radionuclide mixture onto the floor of the IRSF, resulting in the airborne dispersion of a specified fraction of the contents. This original container drop analysis demonstrated that the maximum expected offsite dose rate was less than 10% of the 10 CFR Part 100, "Reactor Site Criteria," acceptance criteria.

ATTACHMENT 1

Evaluation of Proposed Change

During that period (i.e., the mid-1980s), approximately 90% of the LLRW projected to be stored in the LaSalle IRSF was Class A LLRW, with the balance being Class B/C LLRW. Classes A, B, and C LLRW are generally acceptable for near-surface disposal and are defined in 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." Section 10 CFR 61.55 lists the radioactivity concentration limits of specific radioactive materials allowed in each LLRW class for near-surface disposal. Class A LLRW contains the lowest radioactive concentration and constitutes the majority of radioactive waste. Class B LLRW contains the next higher radioactive concentration and Class C LLRW has the highest radioactive concentration allowed to be disposed of in a near-surface LLRW disposal facility.

Most Class A LLRW can be classified as Low Specific Activity (LSA) waste, and includes spent condensate demineralizer ion exchange resins and slightly contaminated dry active waste (DAW). Class B/C LLRW is typically high specific activity ion exchange resins, with the typical radioactive constituent being Co-60. This type of LLRW results in relatively high container contact radiation levels (i.e., greater than 15 R/hr).

Class B/C LLRW is typically generated at LSCS in the demineralizers of the Reactor Water Cleanup system or the Spent Fuel Pool Cleanup system. The high specific activity ion exchange resins from the demineralizers for these two systems are stored and transported in high density polyethylene (HDPE) High Integrity Containers (HICs) in a dewatered resin waste form. The dewatered resins comply with Generic Letter (GL) 81-38 requirements for "Stabilized Waste." The LLRW containers (i.e., HDPE HICs) comply with the requirements of 10 CFR Part 20, 10 CFR Part 61, Title 49 of the CFR, "Transportation," and current Energy *Solutions* - Barnwell waste acceptance criteria, for eventual shipment of the LLRW to a permanent disposal facility.

The LSCS IRSF is located within the LSCS Protected Area, with access to the IRSF is controlled in accordance with the LSCS security program.

4.2 Evaluation of Proposed Class B/C LLRW Storage Option

Based on the cost to construct additional Class B/C LLRW storage facilities, and the available space at the LSCS IRSF, EGC has evaluated the technical and regulatory aspects of storage of Class B/C LLRW from Braidwood, Byron, and CPS, in the existing LSCS IRSF. This technical and regulatory evaluation was documented as a technical report supporting an EGC Engineering Change, in accordance with EGC procedures.

The technical report, which is provided as Attachment 3, evaluated the existing LSCS IRSF design and operational requirements against the NRC guidance that is applicable to extended storage of LLRW, including the storage of a larger number of Class B/C LLRW containers than previously evaluated, and storage of Class B/C LLRW containers from Braidwood, Byron, and CPS.

After assessing both normal design requirements and potential design basis events, the technical report validated that storage of Class B/C LLRW in the existing LSCS IRSF complies with current NRC regulatory requirements, and that the LSCS IRSF performs acceptably in an extended storage operational mode (i.e., up to 80 years in duration) for Class B/C LLRW in HDPE HICs. This conclusion is equally valid for extended storage of Class B/C LLRW from Braidwood, Byron, and/or CPS in the LSCS IRSF.

ATTACHMENT 1

Evaluation of Proposed Change

The technical report includes a review of the original 10 CFR 50.59 evaluations that were conducted for the initial installation and operation of the LSCS IRSF. This review of the original 10 CFR 50.59 evaluations is provided in Appendix A of Attachment 3.

The technical report is based on the regulatory requirements and guidance described in GL 81-38, NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," Appendix 11.4-A, "Design Guidance for Temporary Storage of Low-Level Radioactive Waste," and RIS 2008-32. The EGC review of these documents resulted in a tabulation of the design and operational requirements for the LSCS IRSF that would ensure compliance with regulatory requirements and guidance, as well as the basis for compliance with each regulatory requirement. This information is provided in Table 4.5-1 of Attachment 3.

The EGC review of the original 10 CFR 50.59 evaluations and applicable regulatory documents identified that many of the design and operational requirements associated with the proposed LLRW storage option are bounded by the previous 10 CFR 50.59 evaluations, including original supporting calculations and analyses. However, EGC also determined that a subset of the design and operational requirements would require new calculations and/or analyses to ensure compliance with regulatory requirements and guidance.

To adequately document the bounding evaluations, and address the need for new calculations and analyses, the technical report that is provided in Attachment 3 addresses the topics listed below. These topics are based on the regulatory requirements, and the basis for verifying compliance with each regulatory requirement. This information is provided in Table 4.5-1 of Attachment 3.

- Characterization of the expected Class B/C LLRW from Braidwood, Byron, and CPS
- Assessment of the potential for flammable gas generation in the Class B/C LLRW containers
- Assessment of Class B/C LLRW container integrity for extended storage (i.e., up to 80 years)
- Definition of waste acceptance criteria for receipt of Class B/C LLRW containers at LSCS
- Evaluation of LSCS IRSF effluent release paths and monitoring requirements
- Evaluation of LSCS IRSF design basis events, including updated assessments of a design basis Class B/C LLRW container drop event and a design basis fire event
- Documentation of LSCS IRSF compliance with NRC security program requirements
- Completion of updated LSCS IRSF radiation shielding assessments (i.e., to account for a larger number of Class B/C LLRW containers)
- Evaluation of Class B/C LLRW container decontamination and repackaging capability
- Consideration of LSCS IRSF operation, as described in EGC procedure RW-AA-105, "Guidelines for Operating an Interim On Site Low Level Radioactive Waste Storage Facility," relative to EPRI Report, "Guidelines for Operating an Interim On Site Low Level Radioactive Waste Storage Facility"

ATTACHMENT 1

Evaluation of Proposed Change

4.3 LSCS IRSF Operational Performance Requirements and Design Conditions

The LSCS IRSF operational performance requirements, design conditions, and analyses are listed below, and summarized in subsequent sections, including a cross-reference to the applicable section and/or appendix of the EGC technical report that is provided as Attachment 3.

- Class B/C LLRW characteristics and waste acceptance criteria
- Class B/C LLRW packaging requirements and storage criteria, including analyses of long-term container integrity and potential flammable gas generation
- Radioactive effluent monitoring requirements
- Updated radiation shielding and dose acceptability assessments
- Design basis event analyses that evaluate postulated fire, tornado, flood, seismic, and container drop events

4.3.1 Class B/C LLRW Characteristics and Waste Acceptance Criteria

Class B/C LLRW that will be stored in the LSCS IRSF for long-term storage will be similar to the types of LLRW currently licensed and stored in the LSCS IRSF, as described in Section 5.0 of Attachment 3. Container contact radiation levels are expected to range from 25 R/hr to 150 R/hr, with a few containers potentially higher. The Class B/C LLRW containers will be stored in two vertical layers. Containers stored in the upper layer are expected to average approximately 50 R/hr when the LSCS IRSF is completely filled. The placement of containers within the LSCS IRSF will be controlled in accordance with administrative procedures, and will ensure compliance with the dose and dose rate limits specified in 10 CFR Part 20 and 40 CFR Part 190. All containers received from off-site will comply with 49 CFR transportation requirements, as applicable, as well as the LSCS Waste Acceptance Criteria (WAC).

In order to ensure that the Class B/C LLRW radioactive waste form and packages are acceptable for extended (i.e., greater than five years) storage and eventual shipment for disposal in a licensed facility, specific criteria identifying conditions of acceptance are required. The purpose of the LSCS IRSF WAC is to provide the authorized radioactive material, form, and packaging for emplacement in the facility for long-term storage and eventual shipment to a disposal facility. The LSCS IRSF WAC is based on the *EnergySolutions* - Barnwell, Facility License Amendment No. 49. The LSCS IRSF WAC is discussed in Section 7.3 and provided as Appendix D of Attachment 3.

4.3.2 Class B/C LLRW Packaging Requirements and Storage Criteria

Class B/C LLRW will be packaged in grapple-compatible containers. EGC has conducted an evaluation of this container type to ensure that container integrity is maintained for the duration of an "extended storage period" and will not rupture when subjected to handling for transportation to a future disposal site. EGC has defined "extended storage period" as the life of the plant (i.e., 40 years) plus 40 years for a total of 80 years. The container integrity evaluation is documented in Section 7.2 and Appendix C of Attachment 3.

ATTACHMENT 1

Evaluation of Proposed Change

EGC has conducted an assessment to evaluate the potential flammable gas (e.g., hydrogen) generation in Class B/C LLRW packages containing dewatered ion exchange resin (i.e., due to radiological decomposition of the resin). This assessment indicates that flammable gas generation in the LSCS IRSF for Class B/C LLRW, even at maximum theoretical container quantities and dose rates, is not of concern as long as the containers are adequately vented. This conclusion is valid, even during extended periods of IRSF operation without forced ventilation. The flammable gas generation assessment is documented in Section 7.1 and Appendix B of Attachment 3.

The LSCS IRSF has the capacity to hold 270 containers of Class B/C LLRW at 135 spots (i.e., two layers of containers). When the LSCS IRSF was initially designed and constructed, approximately 90% of the projected LLRW that would be stored was Class A LLRW, with the balance being Class B/C LLRW.

As discussed in Section 1.1 above, Class A LLRW from LSCS, Braidwood, Byron, and CPS will continue to be shipped to EnergySolutions - Clive. Since approximately 90% of the LLRW waste that was anticipated to be stored at the LSCS IRSF (i.e., Class A LLRW) will be shipped to EnergySolutions - Clive, there will be sufficient excess storage capacity in the LSCS IRSF for extended storage of the Class B/C LLRW generated at Braidwood, Byron, and CPS, in addition to Class B/C LLRW that is generated at LSCS.

Although the Class B/C LLRW from Braidwood, Byron and CPS, combined with the Class B/C LLRW from LSCS, is expected to have higher average radiation levels than originally assumed in the LSCS IRSF design, EGC will implement loading and placement restrictions to ensure continued compliance with the as low as reasonably achievable (ALARA) requirements of 10 CFR Part 20 and the dose requirements of 40 CFR Part 190.

4.3.3 Radioactive Effluent Monitoring

EGC conducted an assessment to review radioactive effluent monitoring needs and capabilities for the LSCS IRSF, relative to regulatory requirements and guidance, including 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 61, "Fuel Storage and Handling and Radioactivity Control," GDC 63, "Monitoring Fuel and Waste Storage," and GDC 64, "Monitoring Radioactivity Releases." This assessment concluded that for long-term storage of solidified or dewatered ion-exchange resin in the LSCS IRSF, with no processing or repackaging, there was no potential pathway for liquid, gaseous, or solid releases, and as such, continuous radioactive effluent monitoring is not required in the LSCS IRSF. This assessment is documented in Section 7.4 of Attachment 3.

4.3.4 Updated Radiation Shielding and Dose Acceptability Assessments

The design function of the LSCS IRSF is to store LLRW, either for staging of LLRW prior to shipment to a LLRW disposal site, or for storage on a more extended basis if a disposal site is not available. For radiation protection purposes, these functions must be implemented with shielding, container placement, and LLRW handling processes that are sufficient to ensure compliance with regulatory radiation dose and dose rate limits.

ATTACHMENT 1

Evaluation of Proposed Change

Shielding design for the LSCS IRSF, and the use of specific Class B/C LLRW handling procedures (i.e., operational and administrative controls) ensure compliance with 10 CFR Part 20 and 40 CFR Part 190 requirements, including the maintenance of personnel doses ALARA. Section 8.2 of Attachment 3 describes the operational and administrative controls, and Section 8.5 of Attachment 3 describes the updated radiation shielding assessments for storage of Class B/C LLRW in the LSCS IRSF.

With respect to the extended storage of Class B/C LLRW in the LSCS IRSF, 40 CFR Part 190 limits the annual dose to individual members of the public from direct radiation and effluent releases to 25 mrem, as implemented under 10 CFR 20.1301(e). Onsite doses that are associated with temporary storage are limited and controlled in accordance with 10 CFR Part 20, including the ALARA principle of 10 CFR 20.1101.

The updated radiation shielding assessments for the LSCS IRSF indicate that the calculated dose rates to offsite receptors due to extended storage of Class B/C LLRW in the LSCS IRSF, including Class B/C LLRW from Braidwood, Byron, and CPS are limited to 1 mrem per year. This is a small fraction of the 40 CFR Part 190 limit of 25 mrem per year. Similarly, dose rates in areas outside of, but in the immediate vicinity of the LSCS IRSF, will be limited to less than 1 mrem per hour, thus ensuring compliance with 10 CFR 20 limits, including the ALARA principle of 10 CFR 20.1101. This evaluation is conservative in that it does not take credit for isotopic decay effects, which would result in lower dose rate projections as the LSCS IRSF is filled.

The updated radiation shielding evaluations have not been included in this LAR, due to the size of the document. However, this calculation is available for NRC review, and will be provided on the LSCS dockets, if requested.

4.3.5 Design Basis Event Analyses

EGC validated that the original LSCS IRSF 10 CFR 50.59 evaluations for a subset of design basis events (i.e., tornado, flood, and seismic) bound the proposed LLRW storage option. This validation is described in Sections 8.4.2, 8.4.3, and 8.4.4 of Attachment 3.

EGC has developed updated evaluations for the design basis fire event and design basis dropped container event to reflect new anticipated LLRW characteristics. These updated evaluations conservatively demonstrate that less than 10% of 10 CFR Part 100 dose limits would result (i.e., as required by GL 81-38 and NUREG-0800, Appendix 11.4-A). The design basis fire and container drop evaluations are provided in Attachment 4.

With respect to a design basis fire, EGC also determined that additional active fire detection or suppression is not required in the LSCS IRSF if the storage requirements described in a new fire hazards analysis are implemented and followed. This determination is described in Section 8.4.1 of Attachment 3. The fire hazards analysis is provided in Appendix E of Attachment 3.

EGC has also conducted a non-mechanistic fire evaluation which indicates that when HDPE HICs are spaced according to a specified arrangement, a fire in an HDPE HIC or group of six HDPE HICs would not spread to other non-steel shelled HDPE HICs, and the potential dose consequences of radiological releases from this event would be less than

ATTACHMENT 1

Evaluation of Proposed Change

10% of 10 CFR Part 100 dose limits. Administrative and operational procedures will ensure compliance with the HIC arrangement limitations that were identified in the non-mechanistic fire evaluation. This non-mechanistic evaluation is provided in Attachment 5.

4.4 Class B/C LLRW Shipping and Handling Criteria

The transportation of Class B/C LLRW from Braidwood, Byron, and CPS to LSCS will be conducted in accordance with NRC and Department of Transportation regulations (i.e., 10 CFR Part 71, "Packaging and Transportation of Radioactive Material," and 49 CFR Parts 171 - 180, "Subpart C - Hazardous Materials Regulations").

Transportation of Class B/C LLRW from Braidwood, Byron, and CPS to LSCS requires significantly less on-road travel than previous shipments of Class B/C LLRW to Barnwell, (i.e., prior to July 2008). Braidwood is approximately 27 miles from LSCS, while Byron and CPS are each slightly less than 100 miles from LSCS. In comparison, Barnwell, South Carolina is approximately 850 miles from Illinois. Transportation of Class B/C LLRW to LSCS is significantly shorter and thus poses less of a risk to the public than transportation of Class B/C LLRW to Barnwell or other out-of-state disposal facilities.

The source of the Class B/C LLRW does not impact the handling of LLRW. From both an operational and radiological perspective, handling of Class B/C LLRW from Braidwood, Byron, and CPS is equivalent to handling of Class B/C LLRW generated at LSCS. Furthermore, the isotopic mixture used in the updated LSCS IRSF radiation shielding assessments (i.e., 100% Co-60) bounds the actual isotopic mixture at Braidwood, Byron, CPS, and LSCS.

A description of the LSCS IRSF and associated equipment is provided in Section 8.1 of Attachment 3. Operational procedures are provided as part of Table 4.5-1 of Attachment 3. No changes to the LSCS IRSF loading/unloading processes or equipment will be necessary for acceptance and handling of Class B/C LLRW from LGS.

4.5 Class B/C LLRW Decontamination and Repackaging Capability

GL 81-38, Section V, "Solidified Radioactive Waste Storage," discusses the development of contamination isolation and decontamination repackaging capabilities for LLRW containers when significant handling and personnel exposure are anticipated. Class B/C LLRW containers stored at the LSCS IRSF that are identified as requiring decontamination will be isolated in accordance with LSCS procedures, and forwarded to the LSCS Radwaste Building for decontamination or transferred to a licensed off-site facility for decontamination. The LSCS Radwaste Building and equipment are designed to ensure that the ALARA principle is incorporated, in accordance with the applicable regulatory requirements and guidance. This is discussed in Section 8.6 of Attachment 3.

GL 81-38, Section V and NUREG-0800, Appendix 11.4-A discuss the need for, and development of, additional processing and repackaging capabilities in the event of Class B/C LLRW container failure and/or as required for final transport and burial in accordance with regulatory requirements and disposal site criteria. Class B/C LLRW containers stored in the LSCS IRSF that are identified as requiring processing or repackaging to meet transportation and disposal requirements will be isolated according to LSCS procedures, and forwarded to the LSCS Radwaste Building for the necessary processing/repackaging, or transferred to a licensed off-site facility for that purpose.

ATTACHMENT 1

Evaluation of Proposed Change

The LSCS Radwaste Building and equipment are designed to ensure that the ALARA principle is incorporated, in accordance with the applicable regulatory requirements and guidance. This is discussed in Section 8.8 of Attachment 3.

4.6 Summary

The EGC technical report provided in Attachment 3, and summarized above, validates that the LSCS IRSF complies with NRC regulatory requirements and performs acceptably in an extended storage operational mode (i.e., up to 80 years in duration) for LSCS-generated Class B/C LLRW in HDPE HICs. This conclusion is equally valid for extended storage of Class B/C LLRW from Byron, Braidwood, and/or CPS in the LSCS IRSF. This validation assessed both normal design requirements and potential design basis events.

Key findings of the EGC technical report include:

- Proper container venting will eliminate flammable gas generation concerns for Class B/C LLRW (i.e., dewatered ion exchange resins), even in the event the LSCS IRSF ventilation system is secured for extended periods.
- HDPE HICs will retain the physical properties associated with long-term container integrity for extended storage periods (i.e., 100 years or more). Additional processing (i.e., dewatering) that may be required prior to eventual shipment to a disposal facility would be conducted in a separate facility.
- The use of stacking structural systems that are provided with HDPE HICs minimize stresses experienced by the HICs, thus minimizing container embrittlement, even with high radiation doses.
- The addition of anti-oxidant compounds to Class B/C LLRW container material (i.e., HDPE) substantially reduces HDPE HIC physical property degradation associated with extended storage and radiation. In addition, the LSCS IRSF provides a controlled temperature environment, with negligible UV exposure, thus enhancing longevity of HDPE HICs that contain Class B/C LLRW.
- Continuous radioactive effluent monitoring is not required based on the absence of a postulated release mechanism for volatile or liquid container contents.
- Seismic, flood, and tornado design basis events are bounded by the original LSCS IRSF 10 CFR 50.59 evaluations. Updated evaluations of the design basis fire event and design basis container drop event conservatively demonstrate that less than 10% of 10 CFR Part 100 dose limits would result (i.e., as required in GL 81-38). The design basis fire and container drop evaluations are provided in Attachment 4.
- Fire hazard assessments demonstrate that no postulated fire initiation scenario exists with the storage of Class B/C LLRW in HDPE HICs. EGC has also conducted a non-mechanistic fire evaluation which indicates that when HDPE HICs are spaced according to the specified arrangement, a fire in a HDPE HIC or group of six HDPE HICs would not spread to other non-steel shelled HDPE HICs, and the potential dose consequences of radiological releases from this event would be less than 10% of 10 CFR Part 100 dose limits. Administrative and operational procedures will ensure compliance with the HIC arrangement limitations that were identified in the non-mechanistic fire evaluation. This non-mechanistic evaluation is provided in Attachment 5.

ATTACHMENT 1

Evaluation of Proposed Change

- Updated radiation shielding assessments for the LSCS IRSF demonstrate compliance of the LSCS IRSF with 10 CFR Part 20 and 40 CFR Part 190 requirements when completely filled. This compliance assumes container placement is controlled as specified in the updated radiation shielding assessments (e.g., placing lower dose rate containers near the outside walls). The updated radiation shielding assessments have not been included in this LAR, due to the size of the document. However, this calculation is available for NRC review, and will be submitted to the NRC on the LSCS docket, if requested.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit" Exelon Generation Company, LLC (EGC) requests an amendment to Facility Operating License (FOL) Nos. NPF-11 and NPF-18 for LSCS, Units 1 and 2, to revise license paragraph 2.B.(5). The proposed change allows LSCS to possess, but not separate, byproduct material from Braidwood Station, Units 1 and 2 (Braidwood), Byron Station Units 1 and 2 (Byron), and Clinton Power Station, Unit 1 (CPS). Specifically, the revised license paragraph would enable EGC to store Class B and Class C (Class B/C) low-level radioactive waste (LLRW) from Braidwood, Byron, and CPS in the LSCS Interim Radwaste Storage Facility (IRSF). The LSCS IRSF already provides storage for LLRW generated at LSCS.

According to 10 CFR 50.92, "Issuance of amendment," paragraph (c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

EGC has evaluated the proposed change, using the criteria in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The following information is provided to support a finding of no significant hazards consideration.

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed change is an amendment to the LSCS FOLs that will enable LSCS to receive and store Class B/C LLRW from Braidwood, Byron, and CPS in the LSCS IRSF. This proposed change does not impact any initiators or precursors of previously analyzed accidents. The storage of Class B/C LLRW from Braidwood, Byron, and CPS does not impact the failure of any plant structures, systems, or components. The proposed change does not have a detrimental impact on the integrity of any plant structure, system, or

ATTACHMENT 1

Evaluation of Proposed Change

component that initiates an analyzed event. The proposed change does not affect any active or passive failure mechanisms that could lead to an accident. The LSCS IRSF is not safety related, and is not used for plant shutdown resulting from accident or nonstandard operational conditions.

The proposed change does not significantly increase the consequences of postulated design basis events (i.e., seismic, flood, tornado, fire, and container drop events), in that the postulated impact of these events remains well below regulatory requirements (i.e., less than 10% of 10 CFR Part 100, "Reactor Site Criteria" limits).

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change is an amendment to the LSCS FOLs that will enable LSCS to receive and store Class B/C LLRW from Braidwood, Byron, and CPS in the LSCS IRSF. The proposed amendment does not involve any change to plant equipment or system design functions. EGC has verified that the storage of Class B/C LLRW from Braidwood, Byron, and CPS in the LSCS IRSF does not affect the ability of the LSCS IRSF to perform its design function, including compliance with NRC regulatory requirements and guidance. No new accident initiators are introduced by this amendment.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed change is an amendment to the LSCS FOLs that will enable LSCS to receive and store Class B/C LLRW from Braidwood, Byron, and CPS in the LSCS IRSF. The proposed amendment does not involve any change to plant equipment or system design functions. The margin of safety is established through the design of the plant structures, systems, and components, the parameters within which the plant is operated, and the setpoints for the actuation of equipment relied upon to respond to an event. The proposed amendment does not affect the LSCS safety limits or setpoints at which protective actions are initiated.

The proposed amendment does not significantly increase the dose rate at the exterior wall of the IRSF, the nearest restricted area boundary, and the nearest residence, when the IRSF is filled to capacity with Class B/C LLRW. Therefore, these dose rates will remain within limits specified in 10 CFR Part 20 and 40 CFR Part 190.

ATTACHMENT 1

Evaluation of Proposed Change

Additionally, the potential radiological impact of a postulated design basis container drop and fire event is less than 10% of the 10 CFR Part 100, "Reactor Site Criteria," acceptance criteria.

Therefore the margin of safety is not reduced by the proposed change.

Based on the above evaluation, EGC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92, paragraph (c), and accordingly, a finding of no significant hazards consideration is justified.

5.2 Applicable Regulatory Requirements/Criteria

5.2.1 10 CFR Part 20, "Standards for Protection Against Radiation" and 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operations"

With respect to the extended storage of Class B/C LLRW in the LSCS IRSF, 40 CFR Part 190 limits the annual dose to individual members of the public from direct radiation and effluent releases to 25 mrem, as implemented by 10 CFR 20.1301(e). Onsite doses that are associated with temporary LLRW storage are limited and controlled in accordance with 10 CFR Part 20, including the ALARA principle of 10 CFR 20.1101.

EGC has verified that the calculated dose rates to offsite receptors due to extended storage of Class B/C LLRW in the LSCS IRSF, including Class B/C LLRW from Braidwood, Byron, and CPS are limited to 1 mrem per year. This is a small fraction of the 40 CFR Part 190 limit of 25 mrem per year. Similarly, dose rates in areas outside of, but in the immediate vicinity of the LSCS IRSF, will be limited to less than 1 mrem per hour, thus ensuring compliance with 10 CFR 20 limits, including the ALARA principle of 10 CFR 20.1101.

Therefore, the proposed change will not impact compliance with 40 CFR Part 190 or 10 CFR Part 20.

5.2.2 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 61, "Fuel Storage and Handling and Radioactivity Control," GDC 63, "Monitoring Fuel and Waste Storage," and GDC 64, "Monitoring Radioactivity Releases"

When evaluating long-term on-site LLRW storage, Part 50 licensees must also consider the applicability of the general design criteria listed in 10 CFR Part 50, Appendix A, specifically GDC 61, 63 and 64:

- GDC 61 specifies that fuel storage and handling, radioactive waste, and other systems that may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions.
- GDC 63 states that appropriate systems shall be provided in fuel storage, radioactive waste systems, and associated handling areas to (1) detect conditions that may result in loss of residual heat removal capability and excessive radiation levels and (2) to initiate appropriate safety actions.

ATTACHMENT 1

Evaluation of Proposed Change

- GDC 64 requires a method for monitoring the level of radioactivity in effluent release pathways and to the plant environs.

EGC has verified that the extended storage of Class B/C LLRW in the LSCS IRSF, including Class B/C LLRW from Braidwood, Byron, and CPS comply with the requirements of GDC 61, GDC 63, and GDC 64.

5.2.3 NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," Chapter 11.4, "Solid Waste Management System," and Appendix 11.4-A, "Design Guidance for Temporary Storage of Low-Level Radioactive Waste"

NUREG-0800, Chapter 11.4 specifies the information that should be included in a Construction and Operating License Application concerning the solid waste management system. Appendix 11.4-A provides generally applicable and waste-specific guidance to licensees for increasing and utilizing on-site LLRW storage capacity.

EGC has verified that the extended storage of Class B/C LLRW in the LSCS IRSF, including Class B/C LLRW from Braidwood, Byron, and CPS comply with the requirements and guidance in NUREG-0800, Chapter 11.4 and Appendix 11.4-A.

6.0 ENVIRONMENTAL CONSIDERATION

EGC has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, "Standards for Protection Against Radiation." However, the proposed amendment does not involve: (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released off-site, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," paragraph (c)(9). Therefore, pursuant to 10 CFR 51.22(b) and (c)(9), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

ATTACHMENT 2

Proposed Mark-up of LSCS Facility Operating Licenses NPF-11 and NPF-18

Am. 146
01/12/01 (4) Exelon Generation Company, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

Am. 146
01/12/01 (5) Exelon Generation Company, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of LaSalle County Station, Units 1 and 2.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of full power (3489 megawatts thermal).

Am. 195
09/16/09 (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 195, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

Am. 194
08/28/09 (3) DELETED

, and such byproduct materials as may be produced by the operation of Braidwood Station, Units 1 and 2, Byron Station, Units 1 and 2, and Clinton Power Station, Unit 1.

Am. 194
08/28/09 (4) DELETED

Am. 194
08/28/09 (5) DELETED

Am. 194
08/28/09 (6) DELETED

Am. 194
08/28/09 (7) DELETED

Am. 34
12/08/87

- (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of LaSalle County Station, Units 1 and 2.

C. The license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

Am. 125
05/09/00

- (1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of full power (3489 megawatts thermal). Items in Attachment 1 shall be completed as specified. Attachment 1 is hereby incorporated into this license.

Am. 182
09/16/09

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 182, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

Am. 181
08/28/09

- (3) DELETED

Am. 181
08/28/09

- (4) DELETED

, and such byproduct materials as may be produced by the operation of Braidwood Station, Units 1 and 2, Byron Station, Units 1 and 2, and Clinton Power Station, Unit 1.

Am. 181
08/28/09

- (5) DELETED

Am. 181
08/28/09

- (6) DELETED

Am. 181
08/28/09

- (7) DELETED

Am. 181
08/28/09

- (8) DELETED

Am. 181
08/28/09

- (9) DELETED