



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

November 28, 2016

**LICENSEE:** Exelon Generation Company, LLC

**FACILITY:** Clinton Power Station, Unit No. 1; Quad Cities Nuclear Power Station, Units 1 and 2; and Oyster Creek Nuclear Generating Station

**SUBJECT:** SUMMARY OF NOVEMBER 14, 2016, PUBLIC MEETING WITH EXELON GENERAION COMPANY, LLC TO DISCUSS PRE-SUBMITTAL LICENSE AMENDMENT REQUESTS AND/OR EXEMPTIONS TO 10 CFR PART 37 FOR DECOMMISSIONING PLANS FOR CLINTON POWER STATION, UNIT NO. 1; QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2; AND OYSTER CREEK NUCLEAR GENERATING STATION (CAC NOS. MF8511, MF8512, MF8513, AND MF8514)

On November 14, 2016, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Exelon Generation Company, LLC (Exelon or the licensee), at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to afford Exelon, the licensee for Clinton Power Station, Unit No. 1 (Clinton); Quad Cities Nuclear Power Station, Units 1 and 2 (Quad Cities); and Oyster Creek Nuclear Generating Station (Oyster Creek), an opportunity to discuss pending license amendment requests and/or exemptions to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," associated with the future decommissioning plans. The meeting notice and agenda, dated October 26, 2016, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML16302A047. A list of attendees is enclosed.

On June 20, 2016, the licensee submitted letters to the NRC certifying the permanent cessation of operations for Clinton by June 1, 2017, and for Quad Cities, by June 1, 2018 (ADAMS Accession Nos. ML16172A137 and ML16172A151, respectively). By letter dated January 7, 2011, the licensee certified its contingent determination to permanently cease operations at Oyster Creek no later than December 31, 2019 (ADAMS Accession No. ML110070507).

No regulatory decisions were made at this meeting. No legal interpretations were made at this meeting by the NRC staff regarding the regulations in accordance with 10 CFR 37.9, "Interpretations," and 10 CFR 73.3, "Interpretations." Section 37.9 and Section 73.3 of 10 CFR state: "Except as specifically authorized by the Commission in writing, no interpretations of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized as binding upon the Commission."

After opening remarks, the NRC staff gave a high level overview of 10 CFR Part 37 and 10 CFR Part 73, "Physical Protection of Plants and Materials." Detailed information regarding the regulations can be found on the NRC public webpage.

Part 37 of 10 CFR has been established to provide the requirements for the physical protection program for any licensee that possesses an aggregated Category 1 or Category 2 quantity of radioactive material listed in Appendix A to 10 CFR Part 37. These requirements provide reasonable assurance of the security of Category 1 or Category 2 quantities of radioactive material by protecting these materials from theft or diversion. Specific requirements for access to material, use of material, transfer of material, and transport of material are included in 10 CFR Part 37. No provision of 10 CFR Part 37 authorizes possession of licensed material.

Part 73 of 10 CFR prescribes requirements for the establishment and maintenance of a physical protection system, which will have capabilities for the protection of special nuclear material at fixed sites and in transit and of plants in which special nuclear material is used.

The licensee presented slides titled, "Part 37 Applicability to Reactor Vessels and Associated Structures, Systems, and Components while in SAFSTOR Awaiting Active Decommissioning Activities," which is available in ADAMS at Accession No. ML16314E481.

SAFSTOR is a method of decommissioning in which a nuclear facility is placed and maintained in a condition that allows the facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use.

Exelon discussed that its objective was to shut down Clinton in June 2017, Quad Cities in June 2018, and Oyster Creek in December 2019. Subsequently, the reactors would be defueled and the fuel would be stored in the spent fuel pool (SFP). After 5 years of wet storage in the SFP, Exelon plans to move all the fuel to the independent spent fuel storage installation (ISFSI), and to then minimize the 10 CFR Part 73 security footprint to only the ISFSI.

Exelon plans on maintaining control rod blades, fuel support pieces, and possibly other non-special nuclear material (SNM) reactor components within the closed reactor vessel (RV) at sites in SAFSTOR awaiting decommissioning activities. Exelon said closed means the RV head is in place and no open pathways exist to enter the RV.

Exelon said delaying the removal of these components provides greater safety during its eventual removal and transport as waste material, due to the decreased activity level due to natural decay of the radioactive materials.

Exelon stated that the RV walls are nominally 8 inches thick, and the RV vessel heads typically weigh in excess of 100 tons. Exelon said access to the activated materials would require either head removal or through wall breaching.

Exelon plans to store 12 control rod blades, fuel support pieces and other non-SNMs in the RV, to re-install the RV head and close the drywell by re-installing the drywell steel containment vessel. Exelon expressed its intention was then to provide normal industrial security measures around the facilities and to put the facility into SAFSTOR.

By memorandum dated March 13, 2014 (ADAMS Accession No. ML14056A151), the NRC staff issued Enforcement Guidance Memorandum (EGM) 2014-001, "Interim Guidance for Dispositioning 10 CFR Part 37 Violations with Respect to Large Components or Robust Structures Containing Category 1 or Category 2 Quantities of Material at Power Reactor Facilities Licensed under 10 CFR Parts 50 and 52 (RIN 3150-A112)."

According to 10 CFR 37.5, "Definitions," the following are the definitions of Category 1 and Category 2 quantity of radioactive material:

*Category 1 quantity of radioactive material* means a quantity of radioactive material meeting or exceeding the category 1 threshold in Table 1 of Appendix A to this part. This is determined by calculating the ratio of the total activity of each radionuclide to the category 1 threshold for that radionuclide and adding the ratios together. If the sum is equal to or exceeds 1, the quantity would be considered a category 1 quantity. Category 1 quantities of radioactive material do not include the radioactive material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet.

*Category 2 quantity of radioactive material* means a quantity of radioactive material meeting or exceeding the category 2 threshold but less than the category 1 threshold in Table 1 of Appendix A to this part. This is determined by calculating the ratio of the total activity of each radionuclide to the category 2 threshold for that radionuclide and adding the ratios together. If the sum is equal to or exceeds 1, the quantity would be considered a category 2 quantity. Category 2 quantities of radioactive material do not include the radioactive material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet.

Exelon discussed its understanding that in the third round of 10 CFR Part 37 Questions and Answers, from a memorandum dated August 26, 2015 (ADAMS Accession No. ML15237A129), Answer No. 6 exempted RVs and associated components from Part 37 requirements. The NRC staff clarified that this was in the context of the Question No. 6 (i.e., that this applied while the facility was under a Part 73 security program).

The NRC staff asked the following questions:

- Would Exelon be maintaining a 10 CFR Part 73 security plan to include the reactor building?
- Would Exelon be moving waste materials from the SFP or elsewhere and placing them into the reactor?
- Would Exelon be applying for a complete exemption from 10 CFR Part 37 or an exemption under 10 CFR 37.11(c)?
- Would Exelon be requesting enforcement discretion under the EGM 14-01?
- Would Exelon be evaluating and storing other Category 1 and 2 materials in the reactor building and turbine buildings (e.g., pumps, pipes, valves)?

After 5 years of wet storage in the SFP, Exelon plans to move all the fuel to the ISFSI, and to then minimize the 10 CFR Part 73 security footprint to only the ISFSI. Exelon plans to store 12 control rod blades, fuel support pieces and other non-SNM in the RV, and re-install the RV head. Exelon has not decided yet if it will submit an exemption for all of 10 CFR Part 37 or just portions of Part 37. Exelon said that they most likely will submit an exemption that would mirror EGM 14-01. Exelon has not decided yet where they will store Category 1 and 2 materials, but Exelon will evaluate if those materials should be stored in the reactor building or the ISFSI; regardless of location, Exelon will ensure that the material meet the appropriate security plan or request an exemption.

Exelon stressed that the inherent security, provided by the RV and drywell, would not require additional security measures to protect the Category 1 and 2 materials.

Exelon requested clarification of the "immediate detection" requirement.

Exelon questioned whether an exemption had ever been completed for protection of Category 1 and 2 materials. The NRC staff discussed the exemption granted for the Zion Nuclear Power Station, Units 1 and 2 decommissioning activities (ADAMS Accession No. ML15119A099).

Exelon requested an update on the Nuclear Energy Institute petition for rulemaking and the expected timeframes. The NRC staff stated that the petition for rulemaking had been received and approved for rulemaking by the Commission, and the rulemaking plan with general concepts and timelines will be sent to the Commission for approval.

To facilitate a timely review of a possible exemption, the NRC staff emphasized the need for frequent communication of schedule plans, submitting high quality applications, and timely responses to requests for additional information.

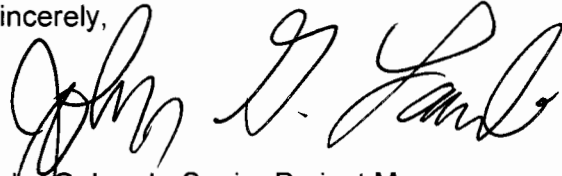
Five members of the public and external stakeholders were in attendance by phone and one member of the public in person.

The State of New Jersey was offered an opportunity to comment, but had no comment. The meeting was opened to members of the public for comment. Ms. Ruth Thomas expressed her concern about shutting down reactors, about low level radioactive waste, and concerns about the nuclear industry having accidents.

No Public Meeting Feedback forms were received.

Please direct any inquiries to me at 301-415-3100, or by email at [John.Lamb@nrc.gov](mailto:John.Lamb@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "John G. Lamb". The signature is fluid and cursive, with the first name "John" being the most prominent part.

John G. Lamb, Senior Project Manager  
Plant Licensing Branch IV-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-461, 50-254, 50-265  
and 50-219

Enclosure:  
List of Attendees

cc w/encl: Distribution via Listserv

LIST OF ATTENDEES  
NOVEMBER 14, 2016, MEETING WITH EXELON GENERATION COMPANY, LLC  
POTENTIAL DECOMMISSIONING LICENSE AMENDMENT REQUESTS AND/OR  
EXEMPTIONS RELATED TO 10 CFR PART 37 FOR  
CLINTON POWER STATION, UNIT NO. 1  
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 AND  
OYSTER CREEK NUCLEAR GENERATING STATION

<b>Name</b>	<b>Affiliation</b>
Douglas Broadus	U.S. Nuclear Regulatory Commission (NRC)/Office of Nuclear Reactor Regulation (NRR)
John Lamb	NRC/NRR
Steve Garry	NRC/NRR
Undine Shoop	NRC/NRR
Vince Williams	NRC/Office of Nuclear Security and Incident Response (NSIR)
Garry Purdy	NRC/NSIR
Duane White	NRC/NSIR
Zahira Cruz	NRC/Office of Nuclear Material Safety and Safeguards (NMSS)
Adelaide Giantelli	NRC/NMSS
John Hickman	NRC/NMSS
Sabrina Attack	NRC/NMSS
Ted Smith*	NRC/NMSS
Neil Sheehan*	NRC/Region I
Mike Gallagher	Exelon Generation Company, LLC (Exelon)
Chris Wilson	Exelon
Paul Bonnett	Exelon
Dennis Bakalar	Exelon
Ray Landis	Exelon
Tim Keenan*	Exelon
Joe Dwyer*	Exelon
Matt Morrison*	Exelon
Mike Peterson*	Exelon
Richard Gropp*	Exelon
Leslie Holden*	Exelon
Ellen Anderson	Nuclear Energy Institute
Veena Gubbi*	State of New Jersey
Mark Van Sicklen*	Duke Energy Florida
Coley Chappel*	Entergy Nuclear Operations, Inc. (Entergy)
Phil Couture*	Entergy
Ruth Thomas*	Public
Marv Lewis*	Public

\*via telephone

Enclosure

Please direct any inquiries to me at 301-415-3100, or by email at [John.Lamb@nrc.gov](mailto:John.Lamb@nrc.gov).

Sincerely,

/RA/

John G. Lamb, Senior Project Manager  
Plant Licensing Branch IV-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-461, 50-254, 50-265  
and 50-219

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DScenci, OPA  
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HPeterson, RIII  
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ACoggins, OGC  
MSmith, NSIR  
KStoedter, RIII  
PGoldberg, NMSS  
BWatson, NMSS  
TWengert, NRR  
JPeralta, NRR

**ADAMS Accession Nos.:**

**Meeting Notice: ML16302A047**

**Meeting Summary: ML16307A316**

**Handouts: ML16314E481**

\*Concurrence by email

OFFICE	NRR/DORL/LPL4-2PM	NRR/DORL/LPL3-2/PM	NRR/DORL/LPL4-2/LA	NRR/DORL/LPL3-2/BC
NAME	JLamb	EBrown	PBlechman	GEMiller
DATE	11/14/16	11/15/16	11/21/16	11/15/16
OFFICE	NRR/DORL/LPL4-2/BC	NRR/DORL/LPL4-2PM		
NAME	DBroaddus (JKim for)	JLamb		
DATE	11/21/16	11/28/16		

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