

~~Exelon Confidential/Proprietary Information Withhold Under 10 CFR 2.390~~  
Attachment 3 contains ~~Exelon Confidential/Proprietary Information~~;  
upon separation this cover letter and Attachments 1 and 2 are decontrolled.



Exelon Generation.

10 CFR 50.54(q)(5)  
10 CFR 50.4  
10 CFR 72.44(f)

February 26, 2016

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

Calvert Cliffs Nuclear Power Plant, Units 1 and 2  
Renewed Facility Operating License Nos. DPR-53 and DPR-69  
NRC Docket Nos. 50-317 and 50-318

Calvert Cliffs Independent Spent Fuel Storage Installation  
Materials License No. SNM-2505  
NRC Docket No. 72-8

Subject: Exelon Radiological Emergency Plan Addendum Revision

In accordance with 10 CFR 50.4(b)(5), "Emergency plan and related submissions," Exelon Generation Company, LLC (EGC) is submitting the Emergency Plan Addendum revision identified in the table below for Calvert Cliffs Nuclear Power Plants (Calvert Cliffs).

Procedure No.	Revision	Title
EP-AA-1011, Addendum 3	1	Calvert Cliffs Nuclear Power Plant Emergency Action Levels

The changes to the Emergency Plan Addendum cited above were evaluated under the requirements of 10 CFR 50.54(q) and were determined not to result in a reduction in the effectiveness of the Emergency Plan for Calvert Cliffs. This notification is being submitted within 30 days of implementation of the changes as required by 10 CFR 50.4(b)(5). The changes continue to meet the applicable planning standards established in 10 CFR 50.47(b) and 10 CFR 50, Appendix E.

Furthermore, Attachment 3 of this letter is proprietary and confidential and contains trade secrets and commercial or financial information. EGC maintains this information on a confidential basis and protects it from disclosure to the general public or unauthorized individuals. EGC requests that Attachment 3 be withheld from public disclosure pursuant to 10 CFR 2.390(a)(4), and has attached an affidavit for this purpose (Attachment 2). However, if the NRC intends to place any of this information in the Public Document Room

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AX45  
NMSS24  
NRR  
NMSS

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Emergency Plan Addendum Revision  
NRC Docket Nos. 50-317, 50-318, and 72-8  
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or on the Agencywide Documents Access and Management System or produce it in response to a Freedom of Information Act (FOIA) request, EGC requests the opportunity to redact the materials consistent with established FOIA exemptions and precedent. In addition, as required by 10 CFR 50.54(q)(5), this submittal includes a summary analysis of the changes to the Emergency Plan implementing procedures (Attachment 1).

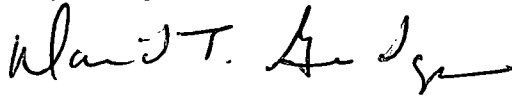
This submittal also satisfies the reporting requirements associated with 10 CFR 72.44(f), which stipulates that within six months after any change is made to the Emergency Plan, the licensee shall submit a report containing a description of the changes to the Director, Division of Spent Fuel Storage and Transportation.

A copy of the revised Emergency Plan Addendum and supporting change summary analysis are included in the cited attachments to this letter.

There are no regulatory commitments in this submittal.

If you have any questions or require additional information, please contact Richard Gropp at (610) 765-5557.

Respectfully,



David T. Gudger  
Manager, Licensing and Regulatory Affairs  
Exelon Generation Company, LLC

Attachments:

1. 10 CFR 50.54(q)(5) Procedure Change Summary Analysis
2. Affidavit
3. EP-AA-1011, Addendum 3, Revision 1, "*Calvert Cliffs Nuclear Power Plant Emergency Action Levels*"

cc: w/ Attachments 1 and 2 only  
Regional Administrator - NRC Region I  
Director, NRC Division of Spent Fuel Storage and Transportation, ONMSS  
NRC Senior Resident Inspector - Calvert Cliffs Nuclear Power Station  
NRC Project Manager, NRR - Calvert Cliffs Nuclear Power Station  
S. T. Gray, State of Maryland

**ATTACHMENT 1**

**10 CFR 50.54(q)(5) Procedure Change Summary Analysis**

## 10 CFR 50.54(q)(5) Procedure Change Summary Analysis

### Procedures/Titles

Exelon Generation Company, LLC (EGC) is submitting the following Emergency Plan Addendum revision for Calvert Cliffs Nuclear Power Plant (Calvert Cliffs):

- EP-AA-1011, Addendum 3, Revision 1, "*Calvert Cliffs Nuclear Power Plant Emergency Action Levels*"

This procedure contains *Exelon Confidential/Proprietary Information* and EGC is requesting that the procedure be withheld from public disclosure pursuant to 10 CFR 2.390.

### Description of Procedures

EP-AA-1011, Addendum 3 describes the Emergency Action Levels (EALs) implemented at Calvert Cliffs for entering Emergency Classification Levels (ECLs).

### Description of Changes

This evaluation addresses the potential impact of installing the Calvert Cliffs Spent Fuel Pool (SFP) Area Radiation Monitor System (ARMS) modification on the Calvert Cliffs EALs. An evaluation of the SFP ARMS modification was previously performed in accordance with 10 CFR 50.54(q)(2) to ensure that the modification did not affect the ability of the Calvert Cliffs Emergency Plan to meet the requirements in 10 CFR 50, Appendix E and the Planning Standards of 10 CFR 50.47(b). The evaluation concluded that the modification did not reduce the effectiveness of the Emergency Plan.

The SFP ARMS modification included installation of a new General Atomics RM-2300 Control and Display Module, which provides control and display for all five (5) General Atomics detectors installed by this modification. The RM-2300 module is installed in a Main Control Room (MCR) panel.

Operators can cycle through the following four (4) different channels: Channel 1, Channel 2, Channel 3, and Channel 4.

Channel 4 will automatically display either a low or high range based on the radiation level being detected.

Channel 4 and Channel 3 are specifically used in the assessment of EAL RU2.1, "*Unplanned rise in plant radiation levels,*" and EAL RA2.1, "*Damage to irradiated fuel or loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the Reactor Vessel.*" As a result of the modification, the nomenclature for the monitors has changed resulting in the need to revise the wording of EALs RU2.1 and RA2.1.

As part of the installation of the new radiation monitors the alarm level was required to be set for Channel 4 and Channel 3. The alarm is used in the determination of EAL RA2.1 as follows:

- *Alarm on ANY of the following radiation monitors due to damage to irradiated fuel or loss of water level:*

**Attachment 1**  
**10 CFR 50.54(g)(5) Procedure Change Summary Analysis**

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- *Fuel Handling Area Vent (RI-5420)*
- *SFP Area RM-320 EL-69 (RI-7024, replaced by the new ORIC-7023 Channel 4)*
- *Spent Fuel Handling Machine (RI-7025, replaced by the new ORIC-7023 Channel 3)*
- *Unit 1/2 CNTMT EL-69 (RI-5316A/B/C/D)*

A review of a Calvert Cliffs work order in support of the modification related to Channel 4 provides information pertaining to the old setpoint of the instrument and the new setpoint as follows:

Monitor	Old Alarm Setpoint	New Alarm Setpoint
RI-7024 (the new ORIC-7023 Channel 4)	$3.3 \times 10^{-3}$ R/hr (3.3 R/hr)	4.0 mR/hr

A review of another Calvert Cliffs work order in support of the modification related to Channel 3 provides information pertaining to the old setpoint of the instrument, and the new setpoint as follows:

Monitor	Old Alarm Setpoint	New Alarm Setpoint
RI-7025 (the new ORIC-7023 Channel 3)	$8 \times 10^{-3}$ R/hr (8.0 R/hr)	4.0 mR/hr

The Initiating Condition of EAL RA2.1 is:

- *"Damage to irradiated fuel or loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the reactor vessel."*

The rise in radiation level that causes the Alarm is predicated on damage to irradiated fuel or loss of water level. The alarm setpoint changes for Channel 4 from 3.3 mR/hr to 4.0 mR/hr, and Channel 3 from 8.0 mR/hr to 4.0 mR/hr, respectively have been set and established based on installation test procedure. The alarm levels were selected in accordance with approved modification documentation. They are established at four (4) times the local area background radiation levels, thus minimizing spurious alarms and being well below any expected radiation levels that might result from a fuel handling accident in the SFP. In accordance with an approved analysis for a fuel handling accident within the SFP area, the expected radiation levels are 0.3879 R/sec (1396.44 R/hr) in the SFP area. Based on this analysis, the alarm levels of 4mR/hr are considered to be acceptable to detect the initiating condition and will not affect the ability to determine the threshold for RA2.1 in a timely manner.

All of the monitors replaced by this modification, Channel 1, Channel 2, Channel 3, and Channel 4 are used in EAL RU2.2 as follows:

- *UNPLANNED area radiation readings increases by a factor of 1000 over NORMAL LEVELS*

Where NORMAL LEVELS is defined as:

- *As applied to radiological IC/EALs, the highest reading in the past twenty-four hours excluding the current peak value.*

**Attachment 1**  
**10 CFR 50.54(g)(5) Procedure Change Summary Analysis**

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No change in this EAL is required based on the modification since all of the monitors will continue to provide the required monitoring and provide an indication of NORMAL LEVELS as they have in the past.

**Description of How the Changes Still Complies with Regulations**

10 CFR 50 Appendix E, Section IV.B.1, requires in part: "*a means to determine the magnitude of and for continually assessing the impact of, the release of radioactive materials be described.*" 10 CFR Part 50.47(b)(9) requires that: "*Adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.*" Additionally, the guidance in NUREG-0654, Section II.1.2 stipulates that: "*Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident shall include post-accident sampling capability, radiation and effluent monitors, in-plant iodine instrumentation, and containment radiation monitoring.*"

The review of the modification documentation ensures that the new equipment will continue to satisfy applicable requirements to the same or greater extent and have similar or better capability as that of the equipment being replaced. Specifically, the new radiation detectors will maintain the same range and maintain the accuracy of the existing instruments. EAL threshold levels will not be revised with the implementation of this modification. With regard to the detector technology, the new detector system satisfies the requirements of the Emergency Plan and has been successfully utilized in the industry in similar applications. The interface and alarms of the SFP ARMS have been evaluated and continue to provide the same functionality as the existing ARMS with regard to the Emergency Plan and regulatory requirements. The impact on EALs RU2.1 and RA2.1 is considered administrative in nature and involves changes in monitor nomenclature only.

Updating the EAL thresholds to reflect a change in the nomenclature of the equipment being replaced does not alter the meaning or intent of the basis of the approved EALs.

**Description of Why the Changes are Not a Reduction in Effectiveness (RIE)**

Changing the nomenclature of the equipment is considered administrative in nature and does not alter the meaning or intent of the basis of the approved EALs RU2.1 and RA2.1. No existing emergency planning requirements and commitments have been deleted or minimized as a result of the changes. The changes continue to satisfy the applicable Emergency Planning requirements specified in 10 CFR 50.47 and 10 CFR 50, Appendix B as well as the relevant Program Element guidance of NUREG-0654. The changes do not alter the capability of the Emergency Response Organization (ERO) to implement required Emergency Plan functions and do not affect the timeliness of the performance of these functions. Therefore, the changes do not result in a reduction in the effectiveness of the Emergency Plan for Calvert Cliffs.

**ATTACHMENT 2**

**Affidavit**

**Radiological Emergency Plan Implementing Procedure Revision**

AFFIDAVIT OF DAVID T. GUDGER

DOCKET NOS. 50-317, 50-318, and 72-8

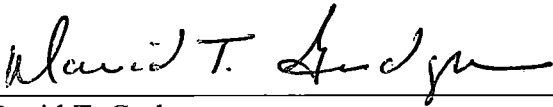
I, David T. Gudger, Manager, Licensing and Regulatory Affairs, Exelon Generation Company, LLC, do hereby affirm and state:

1. I am Manager, Licensing and Regulatory Affairs for Exelon Generation Company, LLC (EGC), and I am authorized to execute this affidavit on behalf of EGC.
2. I am further authorized to review the documents sought to be withheld from public disclosure in connection with submittals to the Nuclear Regulatory Commission ("NRC"):
  - EP-AA-1011, Addendum 3, Revision 1, "Calvert Cliffs Nuclear Power Plant Emergency Action Levels"
3. I am also authorized to apply to the NRC for the withholding of the aforementioned documents from public disclosure under 10 C.F.R. §§ 2.390(a)(4) and 9.17(a)(4) on the grounds that the documents contain privileged or confidential or proprietary commercial information. The documents EGC seeks to withhold from public disclosure have been marked "Proprietary" and are summarized in the attachment to my Affidavit.
4. On behalf of EGC, I request that the document marked by EGC as "Proprietary" and described in the attached list (Appendix 1) be withheld, in their entirety, by the NRC from public disclosure.
5. In making this application for withholding of proprietary and confidential information of which EGC is the owner, EGC relies on 10 C.F.R. § 2.390(a)(4) and 10 C.F.R. 9.17(a)(4). The proprietary documents contain privileged or confidential or proprietary commercial information.
6. The proprietary information described in Appendix 1 should be withheld from disclosure by the NRC pursuant to the policy reflected in 10 C.F.R. § 2.390(a)(4), and for the following reasons to be considered pursuant to 10 CFR § 2.390(b)(4):
  - i.. The documents are each either a policy, procedure, process, technical requirements document, or other document that forms part of the Exelon Nuclear Management Model ("ENMM").
  - ii. The ENMM is a set of confidential policies and procedures that enable EGC to consistently achieve excellence in all key dimensions of its business. It documents proven ways of achieving excellence and defines how EGC executes and manages performance and assesses results. EGC expended significant resources, in terms of time and money, to develop, implement, and update the ENMM. EGC derives economic benefit from the ENMM in terms of increased efficiency and improved results as well as revenue generated from EGC's sale or licensing of the ENMM.



- iii. The documents are now, and have been, held in confidence by EGC. EGC does not customarily make these documents available to the public. EGC has not authorized making the documents available through public sources.
  - iv. EGC is providing the NRC with the documents and information in confidence.
  - v. Economic harm would come to EGC with the publication of the individual documents that form the ENMM, as it would reduce or eliminate the need for any third party to purchase or license the ENMM from EGC, and would reduce the competitive position of EGC based on the benefits that the ENMM provides to EGC in the management of its own nuclear plants. The ENMM is considered by EGC to be a very valuable part of our intellectual property and it would be very difficult, costly and time-consuming for another to duplicate it without access to these documents.
7. EGC requests that the document listed in Appendix 1 be withheld from public disclosure based on the reasons stated above in paragraph 6.i. through 6.v.

I declare under penalty of perjury that the foregoing affidavit and statements therein are true and correct to the best of my knowledge, information, and belief.



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David T. Gudger  
Manager, Licensing and Regulatory Affairs  
Exelon Generation Company, LLC

Date: February 26, 2016

## Appendix 1: Information that Should Be Withheld from Public Disclosure

Date or Revision	Description of Document	Reason(s) to Withhold
Revision 1	EP-AA-1011, Addendum 3	Entire document exempt from disclosure under 10 C.F.R. § 2.390(a)(4) and 9.17(a)(4) based on paragraph 6 of the affidavit to which this Appendix 1 is attached.