



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

April 19, 2019

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 – ISSUANCE OF AMENDMENT NOS. 329 AND 307 RE: REMOVAL OF AN EXCEPTION TO THE MINIMUM EDUCATION REQUIREMENTS FOR SHIFT TECHNICAL ADVISORS (EPID L-2018-LLA-0129)

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 329 to Renewed Facility Operating License No. DPR-53 and Amendment No. 307 to Renewed Facility Operating License No. DPR-69 for the Calvert Cliffs Nuclear Power Plant, Units 1 and 2. These amendments consist of changes to the Technical Specifications in response to your application dated April 20, 2018 (Agencywide Documents Access and Management System Accession No. ML18113A090).

The amendments remove the ability to use previously-approved exceptions to the minimum education requirements for shift technical advisors from the Calvert Cliffs Nuclear Power Plant, Units 1 and 2, Technical Specifications. Specifically, Technical Specification Section 5.2.2.g.3 related to specific requirements for shift technical advisor personnel education and training is deleted.

A copy of the related safety evaluation is enclosed. Notice of issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink that reads "Michael L. Marshall, Jr.".

Michael L. Marshall, Jr., Senior Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosures:

1. Amendment No. 329 to DPR-53
2. Amendment No. 307 to DPR-69
3. Safety Evaluation

cc: Listserv



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 329
Renewed License No. DPR-53

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (Exelon, the licensee) dated April 20, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

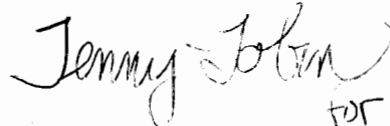
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2. of Renewed Facility Operating License No. DPR-53 is hereby amended to read as follows:

2. Technical Specifications

- The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 329, are hereby incorporated into this license. Exelon Generation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



James G. Danna, Chief
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and Technical
Specifications

Date of Issuance: April 19, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 329

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 1

RENEWED FACILITY OPERATING LICENSE NO. DPR-53

DOCKET NO. 50-317

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page
3

Insert Page
3

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page
5.2-3

Insert Page
5.2-3

- (4) Exelon Generation pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, in amounts as required, any byproduct, source, and special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Exelon Generation pursuant to the Act and 10 CFR Parts 30 and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

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

(1) Maximum Power Level

Exelon Generation is authorized to operate the facility at steady-state reactor core power levels not in excess of 2737 megawatts-thermal in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 329, are hereby incorporated into this license. Exelon Generation shall operate the facility in accordance with the Technical Specifications.

- (a) For Surveillance Requirements (SRs) that are new, in Amendment 227 to Facility Operating License No. DPR-53, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 227. For SRs that existed prior to Amendment 227, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 227.

(3) Additional Conditions

The Additional Conditions contained in Appendix C as revised through Amendment No. 318 are hereby incorporated into this license. Exelon Generation shall operate the facility in accordance with the Additional Conditions.

(4) Secondary Water Chemistry Monitoring Program

Exelon Generation shall implement a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:

5.2 Organization

2. By an individual with a Bachelors Degree or equivalent in a scientific or engineering discipline with specific training in plant design, and response and analysis of the plant transient and accidents.
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UNITED STATES
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EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 307
Renewed License No. DPR-69

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (Exelon, the licensee) dated April 20, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

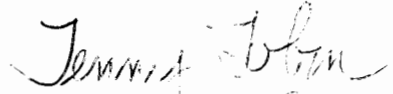
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2. of Renewed Facility Operating License No. DPR-69 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 307, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



James G. Danna, Chief
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and
Technical Specifications

Date of Issuance: April 19, 2019

ATTACHMENT TO LICENSE AMENDMENT NO. 307
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2
RENEWED FACILITY OPERATING LICENSE NO. DPR-69
DOCKET NO. 50-318

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page
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Insert Page
3

Calvert Cliffs Nuclear Power Plant, Unit 2, uses the same Appendix A as Calvert Cliffs Nuclear Power Plant, Unit 1. Accordingly, the Unit 1 Renewed Facility Operating License has been updated with the following page, which is applicable to both Units 1 and 2.

Remove Page
5.2-3

Insert Page
5.2-3

- (4) Exelon Generation pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, in amounts as required, any byproduct, source, and special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Exelon Generation pursuant to the Act and 10 CFR Parts 30 and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

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

(1) Maximum Power Level

Exelon Generation is authorized to operate the facility at steady-state reactor core power levels not in excess of 2737 megawatts-thermal in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 307, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

- (a) For Surveillance Requirements (SRs) that are new, in Amendment 201 to Facility Operating License No. DPR-69, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 201. For SRs that existed prior to Amendment 201, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 201.

(3) Less Than Four Pump Operation

The licensee shall not operate the reactor at power levels in excess of five (5) percent of rated thermal power with less than four (4) reactor coolant pumps in operation. This condition shall remain in effect until the licensee has submitted safety analyses for less than four pump operation, and approval for such operation has been granted by the Commission by amendment of this license.

(4) Environmental Monitoring Program

If harmful effects or evidence of irreversible damage are detected by the biological monitoring program, hydrological monitoring program, and the



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 329 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-53

AMENDMENT NO. 307 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-69

EXELON GENERATION COMPANY, LLC

CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-317 AND 50-318

1.0 INTRODUCTION

By application dated April 20, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18113A090), Exelon Generation Company, LLC (Exelon or the licensee) submitted a license amendment request for a change to the Calvert Cliffs Nuclear Power Plant, Units 1 and 2 (Calvert Cliffs), Technical Specifications (TSs).

The proposed change would revise the Calvert Cliffs TSs to remove an exception to the minimum education requirements for shift technical advisors (STAs). Specifically, TS Section 5.2.2.g.3 related to specific requirements for STA education and training will be deleted.

2.0 REGULATORY EVALUATION

2.1 Background

Calvert Cliffs, Units 1 and 2, TS 5.2.2, "Unit Staff," sets the requirements for the unit staff organization. TS 5.2.2.g. states, in part:

One Shift Technical Advisor (STA) shall be assigned to the shift crew when either unit is in MODE 1, 2, 3, or 4, and shall be filled as follows:

[...]

3. By an SRO [senior reactor operator] license holder previously approved by the Nuclear Regulatory Commission as an exception to the minimum STA education requirements of Specification 5.2.2.g.2, provided the following conditions are met:

- i. With both units in MODE 1, 2, 3, or 4, the STA shall be an SRO license holder in addition to the two SRO license holders required,
- ii. With one unit in MODE 1, 2, 3, or 4, and the other unit in MODE 5 or 6, the STA shall be an SRO license holder other than the SS [Shift Supervisor], and
- iii. With one unit in MODE 1, 2, 3, or 4, and the other unit defueled, the STA shall be an SRO license holder in addition to the one SRO license holder required.

This licensing action concerns unit staffing (i.e., the people on shift running the reactors), and in particular, concerns the STA. The STA is a position at a nuclear power plant that was established to evaluate normal and abnormal plant conditions and provide advice to the shift supervisor during plant transients and accidents. The training criteria for an STA were initially established as part of Three Mile Island Nuclear Station (TMI) Action Item I.A.1.1, "Shift Technical Advisor." The training criteria for STAs, including educational recommendations, were described in NUREG-0737, "Clarification of TMI Action Plan Requirements," dated November 1980.

The STA position at Calvert Cliffs is generally a combined SRO and STA position. SROs performing the STA role at Calvert Cliffs are qualified through an accredited training program developed using a systems approach to training. The training program is accredited by the National Nuclear Accrediting Board of the National Academy for Nuclear Training. The current training program for SROs performing the STA role includes a requirement that shift technical advisors have a bachelor's degree or equivalent in a scientific or engineering discipline, and the exception described in Calvert Cliffs TS Section 5.2.2.g.3.

Exelon received the TS amendment that allowed exception to certain training criteria (i.e., educational requirements) for the STA position in August 1996. The licensee used the exception for four SRO license holders that have since retired from their positions. Exelon states that it no longer needs the exceptions to the STA training criteria that were approved in August 1996.

2.2 Description of Proposed Changes

The licensee proposed to delete Calvert Cliffs TS Section 5.2.2.g.3. This section of the Calvert Cliffs TSs describes the conditions that SRO license holders who do not meet the STA education requirements (i.e., bachelor's degree or equivalent in a scientific or engineering discipline) must meet to perform the dual role as STA and SRO.

2.3 Regulatory Requirements and Guidance

The regulatory requirements that the U.S. Nuclear Regulatory Commission (NRC or the Commission) staff considered in its review of this license amendment request included:

- Section 50.120, "Training and qualification of nuclear power plant personnel," of Title 10 of the *Code of Federal Regulations* (10 CFR) requires, in part, licensees to establish training programs for STAs that are derived from a systems approach to training. In addition, 10 CFR 50.120 requires, in part, that the training program must

incorporate the instructional requirements necessary to provide qualified personnel to operate and maintain the facility in a safe manner in all modes of operation.

- In 1981, the NRC issued an Order Confirming Licensee Commitment on Post-TMI Related Issues to the licensee for Calvert Cliffs. The order made the licensee's commitments to implement the guidance in NUREG-0737 and the schedule for implementation, requirements. The order elevated the guidance in NUREG-0737 to requirements. The order was published in the *Federal Register* on July 21, 1981 (46 FR 37573).
- Appendix C, "Nuclear Power Plant Shift Technical Advisor," to NUREG-0737 describes the training criteria for a STA. The general qualifications for the STA position are:
 - The combination of educating, training, and nuclear plant experience identified in Sections 5 and 6 of Appendix C of NUREG-0737.
 - An in-depth understanding of nuclear plant equipment, systems, and operating practices and procedures.
 - Well-developed analytical skills and the ability to make sound judgments under stressful conditions.

The guidance that the NRC staff considered in its review of this license amendment request included:

- Commission Policy Statement on Engineering Expertise on Shift was published in the *Federal Register* on October 28, 1985 (50 FR 43621), which describes two options for meeting the requirement for providing engineering and accident expertise on shift. As stated in the policy statement, the Commission prefers Option 1. Option 1 is for a combined SRO and STA position (i.e., dual role). Option 2 is a dedicated STA position. Regardless of the option chosen, the training criteria for an STA are the same.

3.0 TECHNICAL EVALUATION

Per 10 CFR 50.120(b)(1)(i) and (2)(iii), each holder of an operating license shall establish, implement, and maintain a training program that is derived from a systems approach to training and that provides for the training and qualification of, among other categories of nuclear power plant personnel, STAs. Per 10 CFR 50.120(b)(3), the training program must be developed to be in compliance with the facility license, including all TSs and applicable regulations.

The current training program for SROs performing the STA role include a requirement that STAs have a bachelor's degree or equivalent in a scientific or engineering discipline and includes the exception described in Calvert Cliffs TS Section 5.2.2.g.3. The condition described in Calvert Cliffs TS Section 5.2.2.g.3 is an NRC-approved exception to the required educational requirements for an STA. The removal of the exception will not have a negative effect on the general qualifications for the STA position at Calvert Cliffs. Removal of TS Section 5.2.2.g.3 will have no meaningful effect on the unit staffing because the last of the SRO license holders that TS Section 5.2.2.g.3 applied to no longer work at the plant, and the license has been removed from the active files for Calvert Cliffs. In other words, there are not any potential STAs for whom the NRC had approved "an exception to the minimum STA education requirements," as stated in TS 5.2.2.g.3.

Calvert Cliffs TS Sections 5.2.2.g.1 and 5.2.2.g.2, which are not being deleted, state:

One Shift Technical Advisor (STA) shall be assigned to the shift crew when either unit is in MODE 1, 2, 3, or 4, and shall be filled as follows:

1. By the Shift Supervisor (SS) or an on-shift SRO license holder, provided the individual meets the Commission Policy Statement on Engineering Expertise on Shift; or
2. By an individual with a Bachelors Degree or equivalent in a scientific or engineering discipline with specific training in plant design, and response and analysis of the plant transient and accidents; or

Therefore, even with the removal of Section 5.2.2.g.3, the TSs will continue to state STA qualifications that will be applicable to potential unit staffing. The Commission's previous findings that the revised TSs provide reasonable assurance of compliance with its regulations and of not endangering the public health and safety remain unaffected by the change.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Maryland State official was notified of the proposed issuance of the amendment on February 21, 2019. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments relate to changes in recordkeeping, reporting, or administrative procedures or requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on July 3, 2018 (83 FR 31181). The amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Michael Marshall

Date: April 19, 2019

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 – ISSUANCE OF AMENDMENT NOS. 329 AND 307 RE: REMOVAL OF AN EXCEPTION TO THE MINIMUM EDUCATION REQUIREMENTS FOR SHIFT TECHNICAL ADVISORS (EPID L-2018-LLA-0129) APRIL 19, 2019

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