



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

May 26, 2015

Mr. George H. Gellrich
Site Vice President
Exelon Generation Company, LLC
Calvert Cliffs Nuclear Power Plant, LLC
1650 Calvert Cliffs Parkway
Lusby, MD 20657

**SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 –
REGULATORY AUDIT REGARDING THE PRESSURIZER SAFETY VALVES
LICENSE AMENDMENT REQUEST (TAC NO. MF3541)**

Dear Mr. Gellrich:

By letter dated February 13, 2014, Calvert Cliffs Nuclear Power Plant, LLC, submitted a license amendment request to revise Technical Specification 3.4.10, "Pressurizer Safety Valves," for Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (Calvert Cliffs). The proposed amendment increases the as-found lift tolerances in the Surveillance Requirement for the pressurizer safety valves and decreases the nominal set pressure for valve RC-201.

The U.S. Nuclear Regulatory Commission (NRC) staff is currently reviewing the submission and has determined that additional information is needed to support its review. Therefore, the NRC staff has conducted a regulatory audit with the intent to gain understanding, to verify information, and/or to identify information that will require docketing to support the basis of the licensing or regulatory decision.

The regulatory audit was conducted in accordance with the Office of Nuclear Reactor Regulation Instruction LIC-111 at Calvert Cliffs from March 25 – 26, 2015. The regulatory audit plan is enclosed.

G. Gellrich

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If you have any questions regarding this matter, please contact me at (301) 415-2549.

Sincerely,

A handwritten signature in black ink, appearing to read "Alex Chereskin". The signature is fluid and cursive, with the first name "Alex" and last name "Chereskin" clearly distinguishable.

Alexander N. Chereskin, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosure:
As stated

cc w/encl: Distribution via Listserv

REGULATORY AUDIT PLAN
REGARDING PRESSURIZER SAFETY VALVES
LICENSE AMENDMENT REQUEST
CALVERT CLIFFS NUCLEAR POWER PLANT, LLC.
EXELON GENERATION COMPANY, LLC
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-317 AND 50-318

1.0 BACKGROUND

By letter dated February 13, 2014 (Agencywide Documents Access and Management System (ADAMS) ML14050A374), Calvert Cliffs Nuclear Power Plant, LLC (the licensee), submitted a license amendment request to revise Technical Specification 3.4.10, "Pressurizer Safety Valves," for Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (Calvert Cliffs). The proposed amendment increases the as-found lift tolerances in the Surveillance Requirement for the pressurizer safety valves (PSVs) and decreases the nominal set pressure for valve RC-201.

2.0 REGULATORY AUDIT SCOPE

The U.S. Nuclear Regulatory Commission (NRC) staff focused on the following areas during this audit:

- Operating experience. Discuss the events related to PSV setpoints outside the allowable range. In particular, review the root cause evaluation for Licensee Event Report (LER) 317/2014-003, which involved a specific lot of "inadequate lift spring assemblies." Also review the root cause evaluation for related LERs referenced in 317/2014-003, which involved normal drift, excessive drift, and inadequate margin.
- Determination of an adequate margin for PSV operability. Discuss the determination that the surveillance requirement is "unnecessarily restrictive." Discuss the implications of "inoperable" PSVs on performance measures. Review the decision process that led to a determination that different off-set as-found PSV relief pressure for the two PSVs.
- Feedback from the PSV manufacturer, Dresser. Since the PSVs are set by Dresser, discuss the procedures for transporting and handling the PSVs, as well as the quality control procedures when the valves are returned. In particular, discuss Dresser's recommendations related to an appropriate tolerance for PSV operability.

- Feedback from other plants and industry groups. Discuss whether operating experience from other plants and/or industry groups contributed to the changes in tolerance and nominal pressure setpoints.
- Design basis accidents and transients. Discuss the events listed on Table 4-1 in the attachments to the proposed amendment. Discuss whether there are any differences in the input conditions or user-specified fuel thermal properties for the events determined to be bounded by the analysis of record (AOR) or bounded by one of the four reanalyzed events.
- Review details of the four reanalyzed events: loss of electrical load, loss of feedwater flow, feedline break, and control element assembly ejection accident. Discuss how the initial conditions and user-specified fuel thermal properties for the reanalyzed events compare to the AOR.
- Discuss the status of the Core Operating Limits Report, the “ongoing discussions” between AREVA and the NRC staff, and the potential for any changes to the analysis methods that could impact the PSV setpoints and tolerances.
- The proposed amendment notes that Appendix C to the license includes the following restriction regarding the use of the S-RELAP5 analysis methods, and requests NRC approval of the methodology used in support of the requested amendment:

Approval of the use of S-RELAP5 (Technical Specification 5.6.5.b.8) is restricted only to those safety analyses that confirm acceptable transient performance relative to the specified acceptable fuel design limits. Prior transient specific NRC approval is required to analyze transient performance relative to reactor coolant pressure boundary integrity until NRC approval is obtained for a generic or Calvert Cliffs-specific basis for the use of the methodology in Technical Specification 5.6.5.b.8 to demonstrate reactor coolant pressure boundary integrity.

Discuss the extent of the NRC approval being requested by the proposed amendment.

- Review the decision to reduce the nominal setpoint for RC-200 (referred to as 1RV200 or 2RV200 in the LERs) from 2565 pounds per square inch atmospheric (psia) to 2525 psia. Discuss the pros and cons of the nominal setpoint reduction, and how the operating experience and/or event reanalysis results contributed to the decision to reduce the nominal setpoint.
- Discuss how the following limitation placed on applications of S-RELAP5 in the safety evaluation for EMF-2310(P)(A), Rev. 1, is addressed for the Calvert Cliffs analyses of the four events:

As is the case in reviewing all generic topical report applications, submittals for specific plants and events must include justification of the nodalization used, input parameters, options selected, and all of the parameters that influence the progression of the event and its mitigation.

- Discuss how the licensee has exercised its responsibility to ensure that AREVA adheres to the conditions in the safety evaluations and the limitations stated in the Topical Reports for the codes and methodologies used in analyses of the four events, and that the methodologies are applicable to the Calvert Cliffs design basis.

3.0 TEAM ASSIGNMENTS

Nadiyah Morgan, NRC – Project Manager

Fred M. Forsaty, NRC – Lead Reviewer

Dan Prelewicz – Information Systems Laboratories, Inc. (ISL, NRC contractor)

Diane Mlynarczyk – ISL

4.0 LOGISTICS

Regulatory Audit Dates: March 25 – 26, 2015

Location: Calvert Cliffs

5.0 DELIVERABLES

A summary of the regulatory audit will be provided within 30 days of completing the audit.

G. Gellrich

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If you have any questions regarding this matter, please contact me at (301) 415-2549.

Sincerely,

/RA/

Alexander N. Chereskin, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosure:
As stated

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