



June 15, 2023

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

Calvert Cliffs Nuclear Power Plant, Unit 1
Renewed Facility Operating License No. DPR-53
NRC Docket No. 50-317

SUBJECT: Response to Request for Additional Information Related to the License
Amendment Request to Modify the Long-Term Coupon Surveillance Program

- REFERENCES
1. Letter from D. P. Helker (Constellation) to U.S. Nuclear Regulatory Commission, "License Amendment Request to Modify the Long-Term Coupon Surveillance Program," dated February 21, 2023 (ADAMS Accession No. ML23052A063)
 2. Electronic mail from D. King (U.S. Nuclear Regulatory Commission) to W. Para (Constellation), "Calvert Cliffs - Long Term Coupon Surveillance Program RAI (EPID L-2023-LLA-0023)," dated June 6, 2023

By letter dated February 21, 2023 (Reference 1) Constellation Energy Generation, LLC (CEG), requested a change to Renewed Facility Operating License DPR-53 for Calvert Cliffs Nuclear Power Plant, Unit 1 (CCNPP, Unit 1). The proposed amendment revises the CCNPP, Unit 1 licensing basis by modifying the Long-Term Coupon Surveillance Program previously approved by the NRC for the carborundum samples located in the CCNPP, Unit 1, Spent Fuel Pool.

By electronic mail dated June 6, 2023 (Reference 2), the U.S. Nuclear Regulatory Commission (NRC) identified an area where additional information is necessary to complete the review.

The attachment to this letter contains the NRC's request for additional information immediately followed by CEG's response.

CEG has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration provided to the NRC in Reference 1. The information attached to this letter does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Furthermore, the information attached to this letter does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in

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connection with the proposed amendment.

There are no regulatory commitments contained in this submittal.

Should you have any questions concerning this submittal, please contact Ms. Wendi E. Para
at (267) 533-5208.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 15th
day of June 2023.

Respectfully,



David P. Helker
Sr. Manager - Licensing
Constellation Energy Generation, LLC

Attachment: Request for Additional Information and CEG Response

cc: USNRC Region I, Regional Administrator
USNRC Senior Resident Inspector, Calvert Cliffs Nuclear Power Plant
USNRC Project Manager, NRR – Calvert Cliffs Nuclear Power Plant
S. Seaman, State of Maryland

ATTACHMENT

Request for Additional Information and CEG Response

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RAI

Section 2.3 of the LAR states that guidance in NEI 16-03 recommends neutron attenuation testing every 10 years. The NRC staff's interpretation of the guidance is that for a plant with Carborundum as the neutron absorbing material neutron attenuation testing is recommended on a frequency not to exceed 5 years. Please provide justification for the statement that a 10-year frequency would be aligned with the guidance for Calvert Cliffs.

CEG RESPONSE:

By letter dated February 21, 2023 (Reference 1) Constellation Energy Generation, LLC (CEG), requested a change to Renewed Facility Operating License DPR-53 for Calvert Cliffs Nuclear Power Plant, Unit 1 (CCNPP, Unit 1). Section 2.3, Current Requirements, of the Reference 1 request stated (*emphasis added*):

CCNPP's LTCS program also includes acceptance criteria for areal density testing, considered by NEI 16-03 to be a full coupon test. The LTCS program's acceptance criteria is as follows:

- Areal density – ^{10}B content of ≥ 0.0177 g/cm² (combined areal density of upper and lower coupon by location).

This parameter focuses on quantifying changes occurring in the materials. **NEI 16-03 recommends that full testing occur at least every ten years; CCNPP performs this testing every four years.**"

In the excerpt above, CCNPP referenced the full testing and the associated ten-year testing frequency as stated in NEI 16-03, Guidance for Monitoring of Fixed Neutron Absorbers in Spent Fuel Pools, Revision 0, Section 2.1.b, (Reference 2) which states (*emphasis added*):

Full testing may consist of a combination of mass-density measurements, ^{10}B areal density measurements, microscopic analysis, and characterization of changes, in addition to the basic testing parameters. These parameters focus on quantifying changes if they are occurring in the materials. Basic testing may be used in combination with full testing for materials that have degradation resulting in loss of ^{10}B areal density to extend the interval of full testing, if appropriately justified. **The ^{10}B areal density measurement will occur at least every ten years.**

However, NEI 16-03, Section 2.1.b continues and provides a five-year testing frequency for “Boraflex, Carborundum, Tetrabor or other phenolic resin based materials.” The section specifically states (*emphasis added*):

For materials with known degradation or degradation mechanisms that impact the efficacy of the neutron absorber (e.g., Boraflex, Carborundum, Tetrabor or other phenolic resin based materials), **the measurement of the areal density at least once every 5 years is acceptable.**”

As stated in the Reference 1 request, CCNPP uses sheets in the CCNPP, Unit 1 Spent Fuel Pool made of a composite material (carborundum sheet) consisting of a boron carbide (B₄C) powder in a fiberglass matrix. As such, CCNPP should have referenced the five-year testing frequency from NEI 16-03, Section 2.1.b (Reference 2).

Regardless, as provided in the Reference 1 request, CCNPP will continue to perform the ¹⁰B areal density measurement every four years which will meet the five-year testing frequency from NEI 16-03, Section 2.1.b (Reference 2).

REFERENCES

1. Letter from D. P. Helker (Constellation) to U.S. Nuclear Regulatory Commission, “License Amendment Request to Modify the Long-Term Coupon Surveillance Program,” dated February 21, 2023 (ADAMS Accession No. ML23052A063)
2. Letter from K. W. Cummings (NEI) to B. J. Benney (NRC), dated August 30, 2016, “Submittal of NEI 16-03, Guidance for Monitoring of Fixed Neutron Absorbers in Spent Fuel Pools, Revision 0, dated August 2016,” (ADAMS Accession No. ML16265A248)