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10 CFR 50.12
10 CFR 50.47
10 CFR 50, Appendix E

RA-18-033

March 19, 2018

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

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16
NRC Docket Nos. 50-219 and 72-15

- Subject: Response to Request for Additional Information (RAI) Related to Exemption Request from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E
- Reference:
- 1) Letter from Michael P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – *"Request for Exemption from Portions of 10 CFR 50.47 and 10 CFR 50, Appendix E,"* dated August 22, 2017 (ML17234A082)
 - 2) Letter from Michael P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – *"Supplement to Request for Exemption from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E,"* dated January 23, 2018 (ML18023A138)
 - 3) Letter from James Barstow, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – *"Supplement to Request for Exemption from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E,"* dated March 8, 2018 (ML18067A087)
 - 4) U.S. Nuclear Regulatory Commission Electronic Mail Request to David Helker, et al., (Exelon Generation Company, LLC) - Draft Request for Additional Information – Oyster Creek EP Exemption, dated March 9, 2018
 - 5) U.S. Nuclear Regulatory Commission Electronic Mail Request to David Helker (Exelon Generation Company, LLC) – *"RAI - Oyster Creek Exemption Request - 10 CFR 50.47 and 10 CFR Part 50, Appendix E (EPID NO.: L-2017-LLE-0020),"* dated March 9, 2018 (ML18068A659)

By letter dated August 22, 2017 (Reference 1), as supplemented by letters dated January 23, 2018 (Reference 2), and March 8, 2018 (Reference 3), Exelon Generation Company, LLC (Exelon) requested an exemption pursuant to the requirements of 10 CFR 50.12 from

specific emergency planning requirements in 10 CFR 50.47, "Emergency plans," and 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," for the Oyster Creek Nuclear Generating Station (OCNGS).

Subsequently, in an electronic mail request dated March 9, 2018 (Reference 4), the U.S. Nuclear Regulatory Commission (NRC) issued a draft Request for Additional Information (RAI) indicating that it had reviewed the information submitted in the Reference 3 letter and that additional clarifying information was needed to support its continued review. The draft RAI (Reference 4) was further discussed during a teleconference between Exelon and NRC representatives held on March 9, 2018. As a result of the discussion, it was determined that no modifications to the draft RAI were needed and the NRC subsequently issued the formal RAI via electronic mail on March 9, 2018 (Reference 5), and requested a response within 30 days of the date of the electronic mail request.

Accordingly, the Attachment to this letter provides Exelon's responses to the NRC's RAI.

Exelon has reviewed the information supporting a finding of No Significant Hazards Consideration and the Environmental Consideration provided to the NRC in Reference 1. The additional information provided in this submittal does not affect the previously stated bases in Reference 1 for concluding that the proposed exemption does not involve a significant hazards consideration. In addition, the information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed exemption.

There are no regulatory commitments contained in this submittal.

If you have any questions concerning this submittal, please contact Paul Bonnett at (610) 765-5264.

Respectfully,



Michael P. Gallagher
Vice President, License Renewal & Decommissioning
Exelon Generation Company, LLC

Attachment: Response to NRC's Request for Additional Information

cc: w/Attachment
Regional Administrator - NRC Region I
NRC Senior Resident Inspector - Oyster Creek Nuclear Generating Station
NRC Project Manager, NRR - Oyster Creek Nuclear Generating Station
Director, Bureau of Nuclear Engineering - New Jersey Department of Environmental Protection
Mayor of Lacey Township, Forked River, NJ

Attachment

Response to NRC's Request for Additional Information

SUMMARY

By letter dated August 22, 2017 (Reference 1), as supplemented by letters dated January 23, 2018 (Reference 2), and March 8, 2018 (Reference 3), Exelon Generation Company, LLC (Exelon) requested an exemption pursuant to the requirements of 10 CFR 50.12 from specific emergency planning requirements in 10 CFR 50.47, "Emergency plans," and 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," for the Oyster Creek Nuclear Generating Station (OCNGS).

Subsequently, in an electronic mail request dated March 9, 2018 (Reference 4), the U.S. Nuclear Regulatory Commission (NRC) issued a draft Request for Additional Information (RAI) indicating that it had reviewed the information submitted in the Reference 3 letter and that additional clarifying information was needed to support its continued review. The draft RAI (Reference 4) was further discussed during teleconference between Exelon and NRC representatives held on March 9, 2018. As a result of the discussion, it was determined that no modifications to the draft RAI were needed and the NRC subsequently issued the formal RAI via electronic mail on March 9, 2018 (Reference 5), and requested a response within 30 days of the date of the electronic mail request.

Accordingly, this attachment restates the NRC's RAI questions contained in the Reference 5 electronic mail requests followed by Exelon's response.

RESPONSE TO RAI QUESTIONS

RAI-OCNGS-1

In the second paragraph above the table on page 2 of the letter dated March 8, 2018, the first sentence states:

"...Cycle 27 fuel element with the maximum burnup (49,978 megawatt-days per metric tons of uranium (MWd/MTU)), with starting uranium weight of 0.182 MTU and a minimum initial bundle enrichment (3.27%)."

In the paragraph above the table on page 2 of the letter dated March 8, 2018, the first sentence states:

"The maximum bundle burnup at the end of Cycle 26 is 48,762 MWd/MTU, with an initial uranium weight of 0.181 MTU and a minimum initial bundle enrichment of 3.70%."

In the paragraph above the table on page 2 of the letter dated March 8, 2018, the third sentence states:

"The enrichment of any fuel bundle in Cycle 27 remains bounding (3.27% (Cycle 27) is less than 3.43% (Cycle 26))."

Is the Cycle 26 minimum initial bundle enrichment 3.70% or 3.43%?

Exelon's Response to RAI-OCNGS-1

The Cycle 26 minimum initial bundle enrichment is 3.43%. Exelon revises the statement as follows: (*Strike through represent deleted text.*)

The decay heat input in the Zirc-Fire analysis (Calculation C-1302-226-E310-457 provided with Reference 1) is the bounding decay heat based on the Cycle 27 fuel element with the maximum burnup (49,978 megawatt-days per metric tons of

uranium (MWd/MTU)), with a starting uranium weight of 0.182 MTU and a minimum initial bundle enrichment (3.27%). This decay heat value will remain bounding for Cycle 26 as long as the fuel elements have a lower burnup and initial uranium weight, and a higher enrichment value. Lower burnups equate to less total fissions within the element; therefore, less fission products and decay heat. A lower MTU results in less total fuel that produces the decay heat. The lower enrichment remains bounding since lower enrichment results in greater production of actinides in the core. Therefore, higher enrichments would contain less actinide isotopes and less decay heat.

The maximum bundle burnup at the end of Cycle 26 is 48,762 MWd/MTU, with an initial maximum uranium weight of 0.181 MTU ~~and a minimum initial bundle enrichment of 3.70%. Therefore, the maximum bundle burnup in Cycle 27 is bounding (48,762 MWd/MTU (Cycle 26) is less than 49,978 MWd/MTU (Cycle 27))~~. The enrichment of any fuel bundle in Cycle 27 remains bounding (3.27% (Cycle 27) is less than 3.43% (Cycle 26)). The burnup methodology is the same between Cycle 26 and 27. These conditions through the end of Cycle 26 result in less decay heat in its limiting bundle than the limiting bundle used from Cycle 27. Therefore, the submitted Zirc-Fire analysis (Reference 1) remains bounding for the conditions for Cycle 26. This is represented in the table below:

| Parameter | Cycle 27 | Bounding Criteria | Cycle 26 |
|---|----------|-------------------|----------|
| Maximum Burnup Fuel Element | | | |
| Burnup (MWd/MTU) | 49,978 | > | 48,762 |
| Starting (MTU) | 0.182 | > | 0.181 |
| Minimum Initial Bundle Enrichment of ANY Fuel Element (%) | 3.27 | < | 3.43 |

RAI-OCNGS-2

In the last sentence of the first paragraph on page 1 of the letter dated March 8, 2018, you stated that you informed the NRC of the early shutdown of Oyster Creek in Reference 2.

Did you mean Reference 3?

Exelon's Response to RAI-OCNGS-2

The reference stated in the last sentence of the first paragraph on page 1 of the letter dated March 8, 2018, was incorrect. The letter in which Exelon stated that the NRC was informed of the early shutdown of OCNGS was in Reference 3.

RAI-OCNGS-3

In the first sentence of the second paragraph on page 1 of the letter dated March 8, 2018, you stated that the telephone conference took place in Reference 5.

Did you mean Reference 4?

Exelon's Response to RAI-OCNGS-3

The reference stated in the first sentence of the second paragraph on page 1 of the letter dated March 8, 2018, was incorrect. The telephone conference that took place on February 20, 2018, should have been stated as Reference 4.

REFERENCE

- 1) Letter from Michael P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – *"Request for Exemption from Portions of 10 CFR 50.47 and 10 CFR 50, Appendix E,"* dated August 22, 2017 (ML17234A082)
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