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Notice of Intent To Conduct Scoping Process and Prepare Supplement To Draft Environmental Impact Statement Virginia Electric and Power Company North Anna Power, Units 1 and 2

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General Comment

See attached comments by Beyond Nuclear and the Sierra Club.

Attachments

2022.12.15 Beyond Nuclear Sierra Club Scoping Comments NA1and2

December 15, 2022
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Submitted electronically via Federal rulemaking website
Docket ID NRC-2020-0214

Re: Comments by Beyond Nuclear and the Sierra Club on Scoping of Environmental Impact Statement for North Anna Power Station, Unit Nos. 1 and 2, Docket ID NRC-2020-0214

Dear Office of Administration Officials:
Pursuant to the notice published at 87 Fed. Reg. 68,522 (Nov. 15, 2022) ("Scoping Notice"), Beyond Nuclear, Inc. ("Beyond Nuclear") and the Sierra Club, Inc. ("Sierra Club") submit the following comments regarding the scope of the U.S. Nuclear Regulatory Commission's ("NRC") supplemental environmental impact statement ("SEIS") for the subsequent license renewal for Virginia Electric and Power Company's ("VEPCO") North Anna Power Station, Units 1 and 2.

Description of Commenters
Beyond Nuclear is a nonprofit, nonpartisan membership organization that aims to educate and activate the public about the connections between nuclear power and nuclear weapons and the need to abolish both to protect public health and safety, prevent environmental harm, and safeguard our future. Beyond Nuclear advocates for an end to the production of nuclear waste and for securing the existing reactor waste in hardened on-site storage until it can be permanently disposed of in a safe, sound, and sustainable underground repository. For more than fifty years, Beyond Nuclear has worked toward its mission by regularly intervening in NRC licensing, rulemaking, and other proceedings related to nuclear safety matters.

Founded in 1972, the Sierra Club is a national environmental organization with 3.8 million members across the United States. The purposes of the Sierra Club are to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.

In 2021, the NRC's Atomic Safety and Licensing Board found that both Beyond Nuclear and the Sierra Club have standing to challenge VEPCO's subsequent license renewal application.¹

¹ Virginia Electric and Power Co. (North Anna Power Station, Units 1 and 2), LBP-21-04, 93 N.R.C. 179 (2021).

Background

As discussed in the Scoping Notice, this proceeding for the preparation of a site-specific environmental impact statement ("EIS") for subsequent renewal of the North Anna operating licenses arises from two NRC decisions: Florida Power & Light Co. (Turkey Point Nuclear Generating Units 1 and 4), CL12-02, ..., N.R.C. ... (Feb. 24, 2022) ("CL12-02") and Duke Energy Carolinas, L.L.C. (Oconee Nuclear Station, Units 1, 2, and 3), CL12-03, ..., N.R.C. ... (Feb. 24, 2022) ("CL12-03"). In those decisions, the Commission reversed the agency's previous reliance on the NRC's generic environmental impact statement ("GEIS") for initial license renewal² for the purpose of approving subsequent license renewal applications.³ As explained by the Commission in CL12-02, "[t]hrough the original 1996 GEIS, we the revised 2013 GEIS analyzed the environmental impact of subsequent license renewal periods."⁴

Taken together, CL12-02 and CL12-03 establish procedural requirements for the environmental review of VEPCO's 2020 subsequent license renewal application, including the environmental report attached to the application as Appendix E.⁵ Pursuant to these decisions, all environmental reviews for subsequent license renewal applications - including the North Anna review - must address the Category 1 environmental impacts listed in Appendix A to 10 C.F.R. Part 50, which formerly were exempted from consideration. As also provided in those decisions, the Staff is now preparing a GEIS for subsequent license renewal. The NRC gave applicants the option to either wait for the GEIS to be completed or perform a site-specific environmental review.

VEPCO has requested a site-specific environmental review. Accordingly, VEPCO has submitted a revised Environmental Report.⁶ Under standard NRC practice, the NRC Staff will rely heavily on the 2022 Environmental Report Supplement in preparing the site-specific EIS. Nevertheless,

² 87 Fed. Reg. at 68,523.

³ Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants (Final Report), NUREG-1437, vols. 1-2 (May 1996) (ML04060705, ML04060703) ("1996 GEIS"); Generic Environmental Impact Statement for License Renewal of Nuclear Plants (Final Report), NUREG-1437, Rev. 1 (June 2013) (ML13062411) ("2013 GEIS").

⁴ CL12-02, slip op. at 1-2, 12-13; CL12-03, slip op. at 2.

⁵ Id., slip op. at 12.

⁶ Appendix E, Applicant's Environmental Report, Subsequent Operating License Renewal Stage, North Anna Power Station Units 1 and 2 (August 2020) ("2020 Environmental Report").

⁷ Subsequent License Renewal Application, Appendix E, Environmental Report Supplement 1 (Sept. 28, 2022) ("2022 Environmental Report Supplement").

The NRC Staff must conduct an independent review, which is not limited by VEPCO's Environmental Report and must correct any deficiencies in VEPCO's report.⁷

Issues That Must be Covered by Site-Specific EIS for North Anna Units 1 and 2

General

As a general matter, the NRC must conduct a site-specific environmental analysis for all environmental impacts previously classified as "Category 1" (i.e., subject to generic findings) using up-to-date and complete information. In addition, the NRC must re-evaluate environmental impacts previously characterized in Category 2 (i.e., subject to site-specific findings), using up-to-date and complete information.

Specific Scoping Issues

Our most pressing concerns about the required scope of the EIS for North Anna Units 1 and 2 are described below. We note that this is not a comprehensive list and that we reserve the right to comment on the draft version of the EIS, as provided by the National Environmental Policy Act ("NEPA") and NRC regulations.

Climate Change. The EIS for North Anna must include the most up to date research on the rapidly changing climate. Local, state, federal, and international authorities have published significant information on projected climate changes such as sea level rise, subsidence, rising temperatures, storm intensity and duration, and drought since the previous NRC analysis. The NRC must use this updated climate research, information, and projections to define the baseline environment for the subsequent license renewal period. Further, the NRC must use this updated climate information for conducting both a new review for previously labeled Category 1 (generic) issues and for updating the state analysis of previously labeled Category 2 (site-specific) issues. The NRC must include climate impacts not simply in a sidebar section but rather must consider how climate change will play a role in every aspect of how North Anna's operation, including its aging safety equipment, will interact with and be affected by the changing environment during the subsequent license renewal period of 2022 to 2055, as well as a reasonable time period for decommissioning.

Environmental significance of 2011 Mireux Earthquake. The EIS for North Anna must consider the environmental significance of the occurrence of the 2011 Mireux Earthquake, which exceeded the reactor's design basis. By exceeding the reactor's design basis, the earthquake disproved the assumption underlying the NRC's issuance of operating licenses in 1978 (for Unit 1) and 1980 (for Unit 2) and renewal of those licenses in 2003, that the reactors could be operated safely and without significant adverse environmental impacts because their SSCs were built to a design basis of

⁸ See Louisiana Energy Services, L.P. (Calumet Earthquake Center), LBP-96-25, 44 N.R.C. 311, 139 (1996) (NRC Staff "ultimately is responsible for preparing the EIS required by NEPA").

sufficient rigor to protect against likely earthquakes. Because that assumption has been proven wrong, the new EIS must analyze this additional, proven risk. We note that in the 2022 Environmental Report Supplement, VEPCO has utterly failed to address the environmental significance of the Mireux Earthquake or even acknowledge the earthquake's occurrence.⁸

Cumulative effects of reliance on aging safety equipment, including seismic risks to aging equipment. The EIS should include a discussion of the cumulative effects of extended operation using aging safety equipment. The problems experienced by sixty-to-eighty-year-old equipment are distinct from, more severe, and less understood than the problems experienced by forty-to-sixty-year-old equipment. Aging problems include reactor pressure vessel embrittlement, irradiation-assisted stress corrosion cracking of reactor internals, concrete structures and containment degradation, and electrical cable qualification and condition assessment, as identified in SECY-14-0016, Memorandum from Mark A. Satriano, NRC Executive Director of Operations, to NRC Commissioners, re: Ongoing Staff Activities to Assess Regulatory Considerations for Power Reactor Subsequent License Renewal at 1 (Jan. 31, 2014) (ML140504306) and the NRC's Five-volume Expanded Materials Degradation Assessment (EMDA), NUREG-1475 (Jan. 2014) ("EMDA Report").

The cumulative impacts analysis should also include at the cumulative or compounding effects of operating an aging reactor for an extended period with safety equipment that is not only deteriorating in unknown ways but that has also experienced a beyond-design-basis earthquake and may experience more of them.

Impact mitigation by seismic upgrades. The EIS should address the cost-effectiveness of mitigation measures for reduction of accident risk. For instance, the EIS should address the costs and benefits of seismic safety upgrades to ensure that the design of North Anna Units 1 and 2 is adequate to protect public health and the environment in the event of another earthquake that exceeds the design basis. The EIS should explain why seismic design upgrades were ordered for the (now-cancelled) North Anna Unit 3 reactor but not for Units 1 and 2. If costs were not considered for Unit 3, should they nevertheless be considered for Units 1 and 2, which are older and therefore more vulnerable?⁹

Impact mitigation by harvesting components from decommissioned reactors. The EIS should also address the need to close the technical knowledge gap and resolve the significant

⁹ See Hearing Request at 36, Reply at 14.

¹⁰ The five volumes of the EMDA Report are as follows: Volume 1, Core Internals and Piping (ML14279A321); Volume 2, Core Internals and Piping (ML14279A331); Volume 3, Reactor Vessel Aging (ML14279A349); Volume 4, Concrete Aging (ML14279A359); and Volume 5, Cable Aging (ML14279A461).

¹¹ For a more comprehensive discussion of these issues, see Reply by Beyond Nuclear, Sierra Club, and Alliance for Progressive Virginia to Opposition to Hearing Request and Waiver Petition (Jan. 15, 2021).

uncertainties that exist regarding the performance and reliability of equipment that has aged just sixty years, including the harvesting of components from decommissioned nuclear reactors. As NRC has recognized, harvested reactor components "[m]ay be the only practical source of representative aged materials" and could be used to "validate larger aging data sets."¹⁰ Furthermore, "[e]x-plant materials offer unique environmental exposure that cannot be entirely replicated by laboratory testing with fresh materials."¹¹ If NRC chooses not to close the technical knowledge gap, it should justify this decision not to do so.

Conclusion

We appreciate this opportunity to identify some of our most pressing concerns about the scope of the EIS you will prepare for your decision on VEPCO's subsequent license renewal application.

Sincerely,

Diane Curran
Council to Beyond Nuclear and the Sierra Club

¹⁰ M. Hiser, P. Putschker, A. B. Hall and R. Tregoning, Harvesting of Aged Materials from Operating and Decommissioning Nuclear Power Plants at 5 (Oct. 12, 2017) (ML1725A484).
¹¹ M. Hiser and A. Hall, Strategic Approach for Obtaining Material and Component Aging Information at 3 (June 2-4, 2015) (ML2032A097).