POLICY ISSUE
(Information)

December 31, 2019

SECY-20-0001

FOR: The Commissioners

FROM: John W. Lubinski, Director
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF STAFF REVIEW AND FINDINGS OF THE 2019 DECOMMISSIONING FUNDING STATUS REPORTS FROM OPERATING AND DECOMMISSIONING POWER REACTOR LICENSEES

PURPOSE:

The purpose of this paper is to inform the Commission of the U.S. Nuclear Regulatory Commission (NRC) staff's findings from its review of the 2019 decommissioning funding status (DFS) reports submitted by operating power reactor licensees and power reactor licensees in decommissioning. This paper does not address any new commitments or resource implications.

BACKGROUND:

In 1988, the NRC established technical and financial requirements to assure that decommissioning of all licensed facilities would be accomplished in a safe and timely manner and that adequate licensee funds would be available for this purpose (Volume 53 of the *Federal Register* (FR), page 24018 (53 FR 24018); June 27, 1988). "Decommission," in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.2, "Definitions," means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits: (1) release of the property for unrestricted use and termination of the license; or (2) release of

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the property under restricted conditions and termination of the license. Therefore, decommissioning, as used in NRC regulations, refers exclusively to radiological decommissioning.

In 1998, in response to the anticipated deregulation of the power generating industry, the NRC amended the decommissioning financial assurance rules under 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning," resulting in additional methods and flexibility for reactor licensees to provide financial assurance for decommissioning (63 FR 50465; September 22, 1998). Additionally, the amended regulations established the requirements that power reactor licensees report, on a biennial basis, the status of their decommissioning funds and on material changes to their external trust agreements and other financial assurance mechanisms.

In 2011, the NRC further amended its regulations to improve decommissioning planning and to reduce the likelihood that any current operating facility would become a legacy site[1] (76 FR 35512; June 17, 2011). As a result, under 10 CFR 50.82, "Termination of license," power reactor licensees in decommissioning are required to provide annual DFS reports to the NRC that include, among other things, information on decommissioning expenditures made during the previous calendar year, the remaining balance of decommissioning funds, and an estimate of the cost to complete decommissioning.

<u>DISCUSSION</u>:

Pursuant to NRC regulations at 10 CFR 50.75(f)(1) (for operating power reactors) and 10 CFR 50.82(a)(8)(v)–(vi) (for power reactors in decommissioning), licensees are required to submit DFS reports to the NRC. DFS reports are required every 2 years from operating power reactor licensees, annually from operating power reactor licensees that are within 5 years of the projected end of their operation or involved in a merger or acquisition, and annually from power reactor licensees in decommissioning. Licensees must submit these reports to the NRC by March 31 of the reporting year. The reports must provide specified information that will allow the agency to monitor the status of decommissioning funds for all power reactor licensees from the time they begin operating until their license is terminated.

For operating reactors, in accordance with 10 CFR 50.75(f)(1), the DFS reports must include: (1) the amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and 10 CFR 50.75(c); (2) the amount of decommissioning funds accumulated to the end of the calendar year preceding the date of the report; (3) a schedule of the annual amounts remaining to be collected; (4) the assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections; (5) any contracts on which the licensee is relying; (6) any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and (7) any material changes to trust agreements.

10 CFR 50.75(c) requires licensees to demonstrate reasonable assurance of funding for decommissioning. Shortfalls should, therefore, be corrected in a timely manner. The staff notes that while the decommissioning funding amounts certified by licensees under this part do not represent the actual cost of plant decommissioning, they do provide assurance that licensees

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1 As defined in the Statement of Considerations accompanying the 2011 rule, a "legacy site" is a facility that is in decommissioning status with complex issues and an owner who cannot complete the decommissioning work for technical or financial reasons.

have available the bulk of the funds to safely decommission the facility. Adjustments to the certification amount are required annually over the operating life of the facility and account for inflation in the labor, energy, and waste burial components of decommissioning costs. Within 5 years before the projected end of operations, 10 CFR 50.75(f) requires that each licensee submit a preliminary decommissioning cost estimate that includes an updated assessment of the major factors that could affect the cost to decommission. The preliminary cost estimate is a more accurate representation of the licensee's cost to decommission as compared to the NRC required minimum. Therefore, shortfalls identified during the operating cycle and between biennial DFS reporting periods are considered to be temporary lapses in funding for decommissioning that may be remedied by use of a parent company guarantee, trust fund growth, or trust fund contributions. In any event, guidance in Regulatory Guide (RG) 1.159, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors," Revision 2, issued October 2011, states that shortfalls identified in a biennial DFS report must be corrected by the time the next report is due.

For power reactors in decommissioning, in accordance with 10 CFR 50.82(a)(8)(v), the annual DFS reports must include: (1) the amount spent on decommissioning, both cumulative and over the previous calendar year, the remaining balance of any decommissioning funds, and the amount provided by other financial assurance methods being relied upon; (2) an estimate of the costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year, and the decommissioning criteria upon which the estimate is based; (3) any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and (4) any material changes to trust agreements or financial assurance contracts. Pursuant to 10 CFR 50.82(a)(8)(vi), if the sum of the balance of any remaining decommissioning funds, plus earnings on such funds calculated at not greater than a 2 percent real rate of return, together with the amount provided by other financial assurance methods being relied upon, does not cover the estimated cost to complete the decommissioning, the DFS report must include additional financial assurance to cover the estimated cost of completion.

Pursuant to 10 CFR 50.75(e)(2), the NRC reserves the right to review, as needed, the rate of accumulation of decommissioning funds and take additional actions as appropriate, on a case-by-case basis, to ensure a licensee's adequate accumulation of decommissioning funds. This includes modification of a licensee's schedule for the accumulation of decommissioning funds. Additionally, in accordance with 10 CFR 50.82(c), for licensees that shut down their reactors prematurely, the collection period for any shortfall of funds will be determined on a case-by-case basis upon application by the licensee, taking into account the specific financial situation of each licensee.

Using staff guidance in Office of Nuclear Reactor Regulation Office Instruction LIC-205, "Procedures for NRC's Independent Analysis of Decommissioning Funding Assurance for Operating Nuclear Power Reactors and Power Reactors in Decommissioning," Revision 6, dated April 10, 2017,[2] the NRC staff reviewed the 2019[3] DFS reports for completeness and compliance with 10 CFR 50.75(f)(1) - (2) and 10 CFR 50.82(a)(8)(v) - (vi). The staff's review included reports for 98 operating power reactors and 21 power reactors in decommissioning. Two tables summarizing the staff's review are enclosed. Table 1, "2019 Decommissioning Funding Status Report for Operating Power Reactor Licensees (December 31, 2018)," summarizes the information from the 98 DFS reports submitted by operating power reactor

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2 Agencywide Documents Access and Management System (ADAMS) Accession No. ML17075A095

3 The 2019 DFS reports reflect the financial status as of December 31, 2018.

licensees,[4] and Table 2, "2019 Decommissioning Funding Status Report for Power Reactor Licensees in Decommissioning (December 31, 2018)," summarizes the information from the 21 DFS reports submitted by power reactor licensees in decommissioning.[5]

Results of the NRC Staff's Review—Operating Power Reactor Licensees

The NRC staff's review of the 2019 DFS reports for operating power reactor licensees resulted in the following findings:

- All 98 operating power reactor licensees met the reporting requirements of 10 CFR 50.75(f) and are currently demonstrating decommissioning funding assurance (DFA).

- As of the December 31, 2018 reporting period cutoff date, three operating power reactors with shortfalls were identified in the 2019 DFS review cycle (Beaver Valley Power Station, Unit 1 (BVPS, Unit 1); Clinton Power Station, Unit 1 (Clinton, Unit 1); and Perry Nuclear Power Plant, Unit 1 (PNPP)).

- According to its 2019 DFS report,[6] Exelon Generation Company, LLC (EGC), the licensee for Clinton, Unit 1, did not demonstrate DFA for this unit, as of December 31, 2018, due to market performance. However, according to EGC and verified by the NRC staff, as of February 28, 2019, DFA is demonstrated for Clinton, Unit 1, due to recovery in market performance.

- According to its 2019 DFS report,[7] FirstEnergy Nuclear Operating Company (FENOC), the licensee for BVPS, Unit 1 and PNPP, did not demonstrate DFA for either of these units, as of December 31, 2018. However, according to FENOC and verified by the NRC staff, as of January 31, 2019, DFA is demonstrated for PNPP, due to recovery in market performance. For BVPS, Unit 1, in both its 2019 DFS report and in a supplemental letter dated August 29, 2019,[8] related to a license transfer application for the FENOC reactor fleet, FENOC reported a shortfall in DFA. As a condition of its approval of the license transfer application on December 2, 2019,[9] the NRC required the applicants to implement and maintain a provisional trust agreement in the amount required to cover the BVPS, Unit 1 shortfall. Accordingly, DFA is demonstrated for BVPS, Unit 1.

- The 2017 DFS report review cycle included 100 operating power reactors. Since the last summary of staff review and findings for DFS reports,[10] two units have transitioned to a decommissioning status and are now included in the review of power reactor licensees in decommissioning.

- Amounts accumulated in the decommissioning trust funds for operating power reactors totaled approximately $56.5 billion as of December 31, 2018.

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4 ADAMS Accession No. ML19346E376
5 ADAMS Accession No. ML19346E377
6 ADAMS Accession No. ML19091A140
7 ADAMS Accession No. ML19074A242
8 ADAMS Accession No. ML19241A461
9 ADAMS Accession No. ML19303C953
10 ADAMS Accession No. ML18096B523

Results of the NRC Staff's Review—Power Reactor Licensees in Decommissioning

The NRC staff's review of the 2019 DFS reports for power reactor licensees in decommissioning resulted in the following findings:

- All 21 power reactor licensees in decommissioning met the reporting requirements of 10 CFR 50.82(a)(8)(v)–(vi).

- All 21 power reactor licensees in decommissioning demonstrated decommissioning funding assurance by either demonstrating a sufficient funding balance or by providing additional financial assurance to cover identified shortfalls.

- One of the 21 power reactor licensees in decommissioning reported a shortfall. In its submittal,[11] EGC, the licensee for Peach Bottom Atomic Power Station, Unit 1 (PBAPS, Unit 1), identified, and the NRC staff confirmed, a shortfall in funding for PBAPS, Unit 1, of about $15 million (in 2018 dollars). EGC provided additional financial assurance to cover the estimated cost to complete decommissioning at PBAPS, Unit 1, pursuant to 10 CFR 50.82(a)(8)(vi) and guidance in RG 1.159. Specifically, EGC indicated that collections from "non-bypassable charges"[12] from which EGC funds its decommissioning trust will be adjusted to cover any funding shortfall that exists. The NRC staff verified that the amounts to be collected will be adjusted, as necessary, in accordance with the applicable tariff in EGC's next filing to the Pennsylvania Public Utility Commission (PaPUC) of the Nuclear Decommissioning Cost Adjustment to cover any funding shortfall for PBAPS, Unit 1, at that time. The cost adjustment is made every five years pursuant to PaPUC Electric Tariff No. 4. The next effective date of a rate adjustment would be January 1, 2023. That scheduled adjustment provides additional assurance that funding will be available to complete radiological decommissioning at PBAPS, Unit 1.

- Current balances in the decommissioning trust funds for power reactor licensees in decommissioning totaled approximately $8.2 billion as of December 31, 2018.

<u>CONCLUSION</u>:

Based on its review of the 2019 DFS reports, the NRC staff finds that all licensees are in compliance with the decommissioning funding assurance reporting requirements of 10 CFR 50.75(f)(1)–(2) for operating power reactor licensees and 10 CFR 50.82(a)(8)(v)–(vi) for power reactor licensees in decommissioning. The staff also finds that all licensees are in compliance with the decommissioning funding assurance requirements of 10 CFR 50.75 and 10 CFR 50.82, as applicable, for the 2019 DFS reporting cycle.

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11 ADAMS Accession No. ML19091A140

12 The regulation at 10 CFR 50.2 states, "Non-bypassable charges mean those charges imposed over an established time period by a Government authority that affected persons or entities are required to pay to cover costs associated with the decommissioning of a nuclear power plant. Such charges include, but are not limited to, wire charges, stranded cost charges, transition charges, exit fees, other similar charges, or the securitized proceeds of a revenue stream."

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

MA JLG for J. Lubinski

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Enclosures:
1. 2019 DFS Report for Operating Power Reactor Licensees
2. 2019 DFS Report for Power Reactor Licensees in Decommissioning

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PKG - ML19346E375
SECY Paper - ML19346E378
Enclosure 1 - ML19346E376
Enclosure 2 - ML19346E377

***Concurred via email** **200800001**

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