

POLICY ISSUE
(Information)

August 6, 2018

SECY-18-0078

FOR: The Commissioners

FROM: Brian E. Holian, Acting Director
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF STAFF REVIEW AND FINDINGS OF THE
2017 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 2017 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 changes in 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 site¹ (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.

DISCUSSION:

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 report 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 by 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 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 have available the bulk of the funds to safely decommission the facility. Adjustments to the

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.

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 decommissioning 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 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 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 on; (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 on which the estimate is based; (3) any modifications 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 on, 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 2017 DFS reports for completeness and compliance with 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)–(vi). The staff's review included reports for 100 operating power reactors and 20 power reactors in decommissioning. Two tables summarizing the staff's review are enclosed. Table 1, "2017 Decommissioning Funding Status Report for Operating Power Reactor Licensees (December 31, 2016)," summarizes the information from the 100 DFS reports submitted by operating power reactor licensees,³ and

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

³ ADAMS Accession No. ML18096B543. On March 31, 2018, FirstEnergy Nuclear Operating Company

Table 2, “2017 Decommissioning Funding Status Report for Power Reactor Licensees in Decommissioning (December 31, 2016),” summarizes the information from the 20 reports submitted by power reactor licensees in decommissioning.⁴

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

The staff’s review of the 2017 DFS reports for operating power reactor licensees resulted in the following findings:

- All 100 operating power reactor licensees demonstrated decommissioning funding assurance. Other than the discrepancy noted below for Donald C. Cook Nuclear Plant, Units 1 and 2, all operating power reactor licensees⁵ met the reporting requirements of 10 CFR 50.75(f)(1).
- Three operating power reactors with shortfalls identified in the prior (2015) DFS review cycle (Braidwood Station, Units 1 and 2, and Byron Station, Unit 2) have since made up for those shortfalls. Exelon Generation Company, LLC (EGC), the licensee for each of these plants, received license renewal for the facilities, which provided for 20 years of additional trust fund growth. The Braidwood units received NRC license renewal in January 2016, and the Byron unit received NRC license renewal in November 2015.
- Indiana Michigan Power Company, the licensee for the Donald C. Cook Nuclear Plant, Units 1 and 2, demonstrated decommissioning funding assurance, meeting the NRC minimum funding requirement for both units. However, the licensee reported significant reductions in the balances of the decommissioning trust for both units (as compared to its 2015 submittal), totaling approximately \$150 million, or \$78 million and \$72 million, respectively, despite overall market growth during this period.⁶ On April 10, 2018, the NRC staff and licensee representatives held a Category I public meeting via teleconference.⁷ In sum, the licensee stated that trust fund balances had increased as expected with market growth; however, some funds within the trust had been reallocated to pay for future spent fuel management expenses. The NRC has issued a request for additional information to the licensee for additional clarification and to address this discrepancy.⁸

(FENOC), FirstEnergy Nuclear Generation, LLC (FENGen), and its parent company FirstEnergy Solutions Corp. (FES), filed for bankruptcy under Chapter 11 of the United States Bankruptcy Code. ADAMS Accession No. ML18094A661. On April 25, 2018, FENOC certified to the NRC that it intends to permanently cease operations of its four nuclear power plants: Beaver Valley Power Station, Unit 1, Beaver Valley Power Station, Unit 2, Davis-Besse Nuclear Power Station, Unit 1, and Perry Nuclear Power Plant, Unit 1. FENOC’s certification provided a revised schedule for the anticipated shutdown of its plants. ADAMS Accession No. ML18115A007. However, as noted above, the staff’s analysis in Table 1 is based on the information provided by licensees in their 2017 DFS reports, including FENOC’s March 2017 DFS report. ADAMS Accession No. ML17083B221. The staff continues to monitor FENOC’s decommissioning funding to ensure adequate funding and compliance with decommissioning funding requirements.

⁴ ADAMS Accession No. ML18099A237.

⁵ Fort Calhoun Station stopped operations in October 2016 and transitioned to decommissioning at that time. Fort Calhoun will not appear among operating power reactor licensees in future DFS reports generated by the staff.

⁶ The March 21, 2017, DFS report for Donald C. Cook, Units 1 and 2, can be found at ADAMS Accession No. ML17081A443. The March 2015 submittal can be found at ADAMS Accession No. ML15084A007.

⁷ ADAMS Accession No. ML18109A069.

⁸ ADAMS Accession No. ML18142B531.

- Amounts accumulated in the decommissioning trust funds for operating power reactors totaled approximately \$53.4 billion as of December 31, 2016.

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

The staff's review of the 2017 DFS reports for power reactor licensees in decommissioning resulted in the following findings:

- All 20 power reactor licensees in decommissioning met the reporting requirements of 10 CFR 50.82(a)(8)(v)–(vi).
- All 20 power reactor licensees in decommissioning demonstrated decommissioning funding assurance.
- One of the 20 power reactor licensees in decommissioning reported a shortfall. In its March 30, 2017, submittal,⁹ 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 \$35 million (in 2016 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, the licensee indicated that collections from “non-bypassable charges”¹⁰ from which EGC funds its decommissioning trust will be adjusted to cover any funding shortfall that exists. The NRC staff verified that the appropriate ratemaking authority, the Pennsylvania Public Utilities Commission, had approved an adjustment increasing the amount collected from non-bypassable charges to pay nuclear power plant decommissioning costs at the site. That adjustment, which went into effect on January 1, 2018, 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 \$6.5 billion as of December 31, 2016.

CONCLUSION:

Based on its review of the 2017 DFS reports, with the exception of the discrepancy noted above for Donald C. Cook Nuclear Plant, Units 1 and 2, the staff finds that all licensees are in compliance with the decommissioning funding assurance reporting requirements of 10 CFR 50.75(f)(1) 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 2017 DFS reporting cycle.

⁹ ADAMS Accession No. ML17089A681.

¹⁰ 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.

/RA by Michele G. Evans for/

Brian E. Holian, Acting Director
Office of Nuclear Reactor Regulation

Enclosures:

2017 DFS Summary Table 1

2017 DFS Summary Table 2

SUBJECT: SUMMARY OF STAFF REVIEW AND FINDINGS OF THE 2017
 DECOMMISSIONING FUNDING STATUS REPORTS FROM OPERATING
 POWER REACTOR LICENSEES AND POWER REACTOR LICENSEES IN
 DECOMMISSIONING DATED

ADAMS Accession Nos.:

PKG - ML18096B539

SECY Paper - ML18096B523

Enclosure 1 - ML18096B543

Enclosure 2 - ML18099A237

***Concurred via email**

OFFICE	NRR/DLP/PFPB	NRR/DLP/PFPB	NRR/DLP/D*
NAME	RTurtil	ABowers	LLund (MJRoss-Lee for)
DATE	04/27/2018	05/23/2018	05/18/2018
OFFICE	TechEd*	OGC - NLO*	NRR
NAME	JDougherty	AGhosh	BHolian (MEvans for)
DATE	5/23/2018	06/21/2018	08/06/2018

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