

Congress of the United States
House of Representatives
Washington, DC 20515-2107

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The Honorable Greg Jaczko
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
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Dear Chairman Jaczko:

I write to request that the Nuclear Regulatory Commission (NRC) respond to a recent Government Accounting Office (GAO) report I requested entitled “Nuclear Regulation: NRC’s Oversight of Nuclear Power Reactors’ Decommissioning Funds Could Be Further Strengthened”¹ that found weaknesses in the program “that could leave the public and environment vulnerable.” GAO reached this conclusion because the NRC does not seem to be accurately estimating the costs of decommissioning nuclear power plants, nor adequately ensuring that owners are financially planning for their plants’ eventual permanent shutdown. If nuclear power plant owners come up short on the bill to safely close their plants, it ultimately will be the public who pays the price.

When a reactor comes to the end of its energy production lifetime and is shut down permanently, a decommissioning process takes place in which radioactive contamination must be reduced to levels specified by the NRC. Safely decommissioning a reactor costs hundreds of millions of dollars,² and the NRC has a decommissioning funding formula, last updated in 1988, with which it determines the minimum amount of money that will be required for each reactor. The NRC is responsible for ensuring that licensees provide reasonable assurance that they will have adequate funds at the relevant time to decommission their reactors. The licensee can pay a deposit at the start of a reactor’s operation in a separate account such as a trust fund, provide assurance that the cost of decommissioning will be paid by another party if the licensee defaults (for example, an insurance or parent company guarantee), or the licensee can establish a separate account outside of its control (in the form of a trust, escrow account, government fund, certificate of deposit, or deposit of government securities) to accumulate decommissioning funds over time.

The periodic NRC reviews of licensees’ decommissioning funds are important to avoid funding shortfalls that could delay decommissioning and pose risks to public health and safety and to the environment. I have been concerned with a number of reports over the last twelve years – including GAO reports I requested in 2001 and 2003 – that have called into question the strength of NRC’s oversight of decommissioning funding. For example, reports from the NRC Office of the Inspector General (NRC OIG) and the GAO have found:

¹ GAO-12-258, April 5, 2012

² <http://www.nrc.gov/about-nrc/regulatory/decommissioning/finan-assur.html>

- The NRC decommissioning funding formula may be outdated³ since it was last updated in 1988 and is based on two studies published in 1978 and 1980 that used technology cost and other information available at that time. As a result, there is increased vulnerability to decommissioning funding shortfalls,⁴
- NRC's evaluation of licensees' funding arrangements was not rigorous enough to ensure that decommissioning funds would be adequate,⁵
- The NRC had not established criteria for taking action if it determines that a licensee is not accumulating adequate decommissioning funds⁶ and
- The NRC relies on licensees' reports of decommissioning fund balances without verifying these balances.³

Because of these issues, on March 10, 2010 I requested⁷ that the GAO follow up on its earlier work to determine whether and how the NRC has implemented the recommendations made in these earlier GAO and NRC IG reports to ensure that licensees provide reasonable assurance of adequate decommissioning funds and to identify any improvements or weaknesses in NRC's oversight of this area. The resulting GAO report, which I am providing to you in Attachment 1, found that:

- The NRC's methods may not reliably estimate decommissioning costs. The amount of funds that is considered adequate is established by NRC's decommissioning formula, which is meant to represent the bulk of the funds needed to decommission a specific reactor. However, the NRC has not clearly defined what the agency means by the "bulk" of the funds that licensees will likely need. In one example of a plant reviewed by GAO, the NRC decommissioning funding formula produced a decommissioning funds estimate of \$345.50 million, while the licensee's own site-specific estimate was \$537.98 million; the NRC estimate captured only 64 percent of the licensee's actual estimated costs. In another example, the NRC formula captured only 57 percent of the licensee's estimate, resulting in a discrepancy of \$362.23 million. The GAO's review of 12 licensee decommissioning funds indicate that in only three cases did the NRC formula match or exceed the licensee's estimates. In six cases, the NRC's formula fell short by more than \$100 million.
- The NRC cannot reliably explain its rationale for the cost elements that support the decommissioning formula and formula-generated cost estimates.
- NRC staff do not always document the results of the reviews clearly or consistently. One-third of the 136 reviews of fund balances that NRC staff performed from April 2008 to October 2010 to verify the amounts in decommissioning funding status (DFS) reports were not always clearly or consistently documented. For example, in 49 reviews, on the one-page form NRC staff used to collect information, the reviewer did not check either

³ NRC, Office of the Inspector General, Review of NRC's Decommissioning Fund Program OIG/99A-16 (Rockville, MD: Feb. 1, 2000)

⁴ Follow-up Audit of the Nuclear Regulatory Commission's Decommissioning Fund Program, OIG-06-A-07 (Rockville, MD: Feb. 6, 2006)

⁵ GAO, Nuclear Regulation: NRC's Assurances of Decommissioning Funding During Utility Restructuring Could Be Improved, GAO-02-48 (Washington, D.C.: Dec. 3, 2001)

⁶ GAO, Nuclear Regulation: NRC Needs More Effective Analysis to Ensure Accumulation of Funds to Decommission Nuclear Power Plants, GAO-04-32 (Washington, D.C.: Oct. 30, 2003)

⁷ <http://markey.house.gov/document/2010/march-1-2010-markey-letter-gao-regarding-nuclear-reactor-safety>

“yes” or “no”, or checked both boxes, indicating whether the original licensee documents were verified to show that the amounts in year-end bank statements matched the amounts in DFS reports. In other cases, some reviewers provided general information on their forms, such as writing “no problem,” while others provided more detailed information, such as providing both the balance in the year-end bank statement and in the DFS report. This latest report notes that, as of October 2011, the NRC did not have written procedures for analyzing licensee documentation and for documenting review results.

- The NRC has not reviewed licensees’ compliance with the investment standards the agency has set for decommissioning trust funds. The NRC does not require licensees to file statements showing how their decommissioning funds are invested, and NRC’s DFS review process does not include an evaluation to ensure that licensees comply with these investment standards. Additionally, the report states that NRC officials told the GAO that the agency is considering discontinuing the site visit reviews used to verify the accuracy of licensee fund balances in their DFS reports altogether.

In light of these findings, the GAO report recommends that the Commission:

1. Define what the agency means by the “bulk” of the funds that licensees will likely need to decommission their reactors.
2. Use the cost-estimating characteristics described in Appendix II of this most recent GAO report⁸ as a guide for a high-quality cost-estimating formula in the event that NRC chooses to update the formula.
3. Document procedures describing the steps that NRC staff should take in their reviews analyzing licensee documentation and verifying that the amounts licensees report to NRC in their DFS reports match the balances on their year-end bank statements
4. Continue reviews of fund balances in a way that is most efficient and effective for the NRC.
5. Consider reviewing a sample of licensees’ investments to determine if licensees are complying with decommissioning investment standards and determine whether action should be taken to enforce these standards.

Adequate decommissioning funds are absolutely essential to reduce radioactive contamination after nuclear reactor permanently shuts down. Every one of the 104 currently active nuclear reactors across the United States will need to be decommissioned eventually. Having enough money to perform the shutdowns is critical for protecting public and environmental health and safety. Therefore, I ask that you respond to the following questions:

1. The NRC states that it disagrees with GAO recommendation number one⁹, claiming that the NRC’s decommissioning funding formula is only one input into the agency’s monitoring system. Please specifically list and describe each additional input. The NRC states that “Based on experience, the regulatory system has been adequate to ensure that power reactor licensees obtain funds when needed for decommissioning.” However, in NRC’s 2009 review of licensee decommissioning funding status reports, the NRC found that licensees for 27 out of 104 operating reactors had a combined shortfall of more than

⁸ Appendix II of GAO-12-258, April 5, 2012

⁹ Appendix III of GAO-12-258, April 5, 2012

- \$2.4 billion in their decommissioning funds.¹ How does the NRC reconcile this discrepancy? Please describe the experience, referenced in the NRC statement above, that leads the NRC to conclude the existing regulatory system is adequate.
2. With respect to GAO recommendation number two, the NRC states that while it agrees that the decommissioning funding formula should provide a credible and well-documented basis for establishing the minimum amount of funding required for decommissioning, it disagrees that the formula is appropriate for a comprehensive and accurate estimate. The NRC claims that the formula is not intended to provide a cost estimate, and the relevant regulatory guide¹⁰ states that “This initial cost estimate is not an exact accounting of the actual cost of decommissioning but is intended to provide an approximation of what decommissioning the reactor will cost at the proposed time of decommissioning.” However, this initial estimate is listed in the regulatory guide under the heading “Decommissioning Cost Estimates.” This ambiguous use of the term “cost estimate” invites confusion. Furthermore, the NRC stated in a 2011 decommissioning funding workshop that licensees may face greater costs during decommissioning than accounted for under the NRC decommissioning funding formula.¹ Surely the ability to realistically estimate the cost of decommissioning is necessary for sufficient financial planning. What are the NRC’s plans to improve the ability to estimate decommissioning costs? What new inputs will be included in a revised decommissioning funding formula? How will the revised formula be verified? If the NRC has no such plans, why not? And how then is the public to be assured that decommissioning can be performed in a manner to protect human health and safety and the environment?
 3. The NRC states that it agrees with GAO recommendations 3, 4, and 5. How, specifically, does the NRC plan to implement each of these recommendations, and what is the timeline for implementation of each?
 4. Is the NRC considering discontinuing licensee site reviews to verify the accuracy of licensee fund balances in their DFS reports as the GAO report indicates? If so, why, and how will the NRC verify the accuracy of licensee fund balances in their DFS reports? The GAO report suggests that discontinuation of these visits is a possibility and states that the NRC cited a lack of findings and budget constraints as the reasons for considering ending the site reviews. Since GAO also found that NRC’s “lack of findings” appeared to be based on incomplete documentation, an absence of a definition of what “bulk funds” means and an outdated model for calculating decommissioning costs, this decision is not supported by credible data. Rather than ending the site reviews altogether, wouldn’t it be more prudent to incorporate them into other routine visits to licensee offices to address any budgetary constraints NRC may be experiencing? Is the NRC considering such a solution? If not, why?
 5. As the GAO report concludes, without awareness of the nature of licensees’ investments, NRC cannot determine whether it needs to take action to enforce the agency’s standards. The GAO was told by the NRC that agency staff lack the financial expertise to evaluate compliance with investment restrictions. What training programs or partnerships are you considering to address this problem? If no such programs or partnerships are being considered, why not? If the NRC is unwilling or unable to develop the expertise needed to assess licensee compliance with investment restrictions, does the NRC believe that this function should be transferred to another federal agency with such expertise, such as the

¹⁰ Regulatory Guide 1.159: ‘Assuring the Availability of Funds for Decommissioning Nuclear Reactors’

Department of the Treasury or the Board of Directors of the Federal Reserve System? If not, why not?

6. Currently, licensees are required to annually estimate the amount of decommissioning funds needed, and every two years licensees must report to the NRC the status of its decommissioning fund in conjunction with the licensee's biennial report, which is analyzed by the NRC. In October 2010, the NRC Commissioners voted four to one (with only Chairman Jaczko voting in favor) against the NRC staff's proposed change that would have directed licensees to adjust decommissioning funds every year and within 3 months of the annual recalculation of the regulatory minimum needed¹¹. The majority of the Commission cited the recent stock market downturn in deciding instead to retain the current requirement that adjustments of funding amounts by licensees take place once every two years. I agree with the statement the Chairman made in favor of the more frequent funds adjustment: "The same way that market fluctuations would not relieve a licensee of its obligation to meet safety regulations, market fluctuations should not be used as a basis by licensees to avoid or delay their obligation to accumulate funds consistent with the regulations." Given the findings in this new GAO report, will the Commission reconsider its vote? If not, why?
7. The GAO report noted that the NRC does not oversee post-shutdown activities to clean up non-radiological contaminants, such as acids and heavy metals, in order to restore the power plant site to a condition that is safe for public use because these activities do not fall within the scope of NRC's definition of decommissioning or under NRC's decommissioning oversight authority. Licensees must pay for these costs with funds that are separate from their decommissioning funds. If the NRC does not oversee the viability of these funds, who does? If other entities have oversight for such funds, how does the NRC coordinate with those entities? If there is no such coordination, why not? Does the NRC have estimates for these costs, either in dollar amount or in percentage of overall decommissioning budget? If NRC does not estimate these costs, who does?

Thank you very much for your consideration of this important matter. Please provide your responses no later than close of business Friday, May 25, 2012. If you have any questions, please have your staff contact Dr. Makenzie Lystrup or Dr. Michal Freedhoff of my staff at 202-225-2836.

Sincerely,



Edward J. Markey

¹¹ <http://www.nrc.gov/reading-rm/doc-collections/commission/cvr/2010/2010-0084vtr.pdf>