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Comptroller General
of the United States

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June 3, 2022

The Honorable Christopher Hanson
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Priority Open Recommendations: Nuclear Regulatory Commission

Dear Chairman Hanson:

The purpose of this letter is to provide an update on the overall status of the Nuclear Regulatory Commission's (NRC) implementation of GAO's recommendations and to call your continued personal attention to areas where open recommendations should be given high priority.¹ In November 2021, we reported that, on a government-wide basis, 76 percent of our recommendations made 4 years ago were implemented.² NRC's recommendation implementation rate was 89 percent. As of April 2022, NRC had 18 open recommendations. Fully implementing these open recommendations could significantly improve agency operations.

Since our April 2021 letter, NRC has implemented one of our six open priority recommendations.³ Specifically, in August 2021, NRC incorporated skill set estimates as part of its strategic workforce planning process. In doing so, it addressed key elements identified in our 2017 report to improve NRC's ability to strategically manage its workforce and respond to changes in the nuclear industry.⁴

We ask for your continued attention to the remaining five priority recommendations. We are not adding any new recommendations at this time. (See the enclosure for the list of recommendations and actions needed to implement them.)

¹Priority recommendations are those that GAO believes warrant priority attention from heads of key departments or agencies. They are highlighted because, upon implementation, they may significantly improve government operations, for example, by realizing large dollar savings; eliminating mismanagement, fraud, and abuse; or making progress toward addressing a high-risk or duplication issue.

²GAO, *Performance and Accountability Report: Fiscal Year 2021*, [GAO-22-4SP](#) (Washington, D.C.: Nov. 15, 2021).

³GAO, *Priority Open Recommendations: Nuclear Regulatory Commission*, [GAO-21-453PR](#) (Washington, D.C.: Apr. 21, 2021).

⁴GAO, *Strategic Human Capital Management: NRC Could Better Manage the Size and Composition of Its Workforce by Fully Incorporating Leading Practices*, [GAO-17-233](#) (Washington, D.C.: Apr. 27, 2017).

The five remaining priority recommendations fall into the following two areas:

Addressing the security of radiological sources.

NRC is responsible for licensing and regulating the secure use of radioactive materials while ensuring the protection of public health and safety and the environment. By implementing our four recommendations in this area, NRC would have greater assurance that bad actors cannot manipulate the system and that it considers the more likely and more significant consequences of a radiological dispersal device (RDD) when establishing its security requirements for radioactive material.

Improving the reliability of cost estimates.

NRC develops cost estimates when analyzing the costs and benefits of actions such as modifications to nuclear power plants. These estimates help inform NRC Commissioners' regulatory decisions. By fully implementing our recommendation to complete and issue its updated cost estimating procedures to align with best practices identified in our cost estimating guide, NRC will better ensure that its cost estimates are reliable and will provide the Commissioners with adequate information on which to base their decisions.

In March 2021, we issued our biennial update to our [High Risk List](#), which identifies government operations with greater vulnerabilities to fraud, waste, abuse, and mismanagement or the need for transformation to address economy, efficiency, or effectiveness challenges.⁵

Some of our government-wide high-risk areas have direct implications for NRC and its operations. These include (1) [the government-wide personnel security clearance process](#), (2) [ensuring the cybersecurity of the nation](#), (3) [improving management of IT acquisitions and operations](#), (4) [strategic human capital management](#), and (5) [managing federal real property](#). We urge your attention to the government-wide high-risk issues as they relate to NRC. Progress on high-risk issues has been possible through the concerted actions and efforts of Congress; the Office of Management and Budget; and the leadership and staff in agencies, including NRC. In March 2022, we issued a report on key practices to successfully address high-risk areas, which can be a helpful resource as your agency continues to make progress to address high-risk issues.⁶

Copies of this report are being sent to the Director of the Office of Management and Budget and appropriate congressional committees, including the Committees on Appropriations, Budget, and Homeland Security and Governmental Affairs, United States Senate; and the Committees on Appropriations, Budget, and Oversight and Reform, House of Representatives. In addition, the report is available on the GAO website at <http://www.gao.gov/>.

I appreciate NRC's continued commitment to these important issues. If you have any questions or would like to discuss any of the issues outlined in this letter, please do not hesitate to contact me or Mark Gaffigan, Managing Director, Natural Resources and Environment, at

⁵GAO, *High-Risk Series: Dedicated Leadership Needed to Address Limited Progress in Most High-Risk Areas*, [GAO-21-119SP](#) (Washington, D.C.: Mar. 2, 2021).

⁶GAO, *High-Risk Series: Key Practices to Successfully Address High-Risk Areas and Remove Them from the List*, [GAO-22-105184](#) (Washington, D.C.: Mar. 3, 2022).

GaffiganM@gao.gov or (202) 512-3841. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Our teams will continue to coordinate with your staff on all of the 18 open recommendations. Thank you for your attention to these matters.

Sincerely yours,

A handwritten signature in black ink that reads "Gene L. Dodaro". The signature is written in a cursive style with a large, prominent "D" and a long horizontal flourish extending to the right.

Gene L. Dodaro
Comptroller General
of the United States

Enclosure – 1

cc: The Honorable Shalanda Young, Director, Office of Management and Budget

Enclosure - Priority Open Recommendations to the Nuclear Regulatory Commission

Addressing the Security of Radiological Sources

Nuclear Security: NRC Has Enhanced the Controls of Dangerous Radioactive Materials, but Vulnerabilities Remain. [GAO-16-330](#). Washington, D.C.: July 1, 2016.

Recommendation: Because some quantities of radioactive materials are potentially dangerous to human health if not properly handled, the Nuclear Regulatory Commission (NRC) should take action to better track and secure these materials and verify the legitimacy of the licenses for those who seek to possess them. Specifically, NRC should take the steps needed to include category 3 sources in the National Source Tracking System and add agreement state category 3 licenses to the Web-based Licensing System as quickly as reasonably possible.

Actions needed: NRC neither explicitly agreed nor disagreed with this recommendation but stated that it would consider our recommendation as part of an existing working group. In August 2017, the working group provided a staff analysis on these issues to the Commission and recommended against including category 3 sources in the National Source Tracking System or adding information on agreement state category 3 licenses to the Web-based Licensing System. We continue to believe that by implementing our recommendation, NRC would have greater assurance that bad actors could not manipulate the system, such as by altering a paper license to acquire radioactive materials in aggregate greater than what they are authorized to possess.

Recommendation: Because some quantities of radioactive materials are potentially dangerous to human health if not properly handled, NRC should take action to better track and secure these materials and verify the legitimacy of the licenses for those who seek to possess them. Specifically, NRC should, at least until such time that category 3 licenses can be verified using the License Verification System, require that transferors of category 3 quantities of radioactive materials confirm the validity of a would-be purchaser's radioactive materials license with the appropriate regulatory authority before transferring any category 3 quantities of licensed materials.

Actions needed: NRC neither explicitly agreed nor disagreed with this recommendation. In December 2021, the Commission directed NRC staff to propose a process that would require licensees transferring category 3 quantities of radioactive material to verify licenses in NRC's Web-based Licensing System or by directly contacting NRC or the agreement state. NRC staff said they expect to implement this process in 2023. In addition, to address the concern over the potential for unknown entities obtaining valid licenses using fictitious or false information, the Commission directed agency staff to explore further strengthening the licensing procedures by requiring that safety and security equipment be in place before granting a license for such entities. By completing its actions to implement this recommendation as soon as possible, NRC will be better able to verify the legitimacy of the licenses for those who seek to possess them and provide greater assurance that bad actors cannot manipulate the system.

Combating Nuclear Terrorism: NRC Needs to Take Additional Actions to Ensure the Security of High-Risk Radioactive Material. [GAO-19-468](#). Washington, D.C.: April 4, 2019.

Recommendation: The Chairman of NRC should require additional security measures for high-risk quantities of certain category 3 radioactive material and assess whether other category 3 materials should also be safeguarded with additional security measures.

Actions needed: NRC neither explicitly agreed nor disagreed with this recommendation but stated that it would consider our recommendation as part of an existing working group. In August 2017, the working group provided a staff analysis on these issues to the Commission that concluded that category 3 materials did not require additional security measures. However, NRC has not updated this analysis to take into account the new information we provided in our April 2019 report, such as expert views and studies on the risks of category 3 materials in a radiological dispersal device (RDD). We continue to believe that by implementing our recommendation, NRC would have greater assurance that its requirements are sufficient to help prevent all high-risk radioactive materials from being stolen and used in an RDD.

Recommendation: The Chairman of NRC should direct NRC staff to consider socioeconomic consequences and fatalities from evacuations in the criteria for determining what security measures should be required for radioactive materials that could be used in an RDD.

Actions needed: NRC disagreed with this recommendation, maintaining that the current regulatory requirements provide for the safe and secure use of all radioactive materials, regardless of category. We disagree with NRC's assessment. About a month after we published our April 2019 report, a small amount of radioactive material was accidentally released at the University of Washington in Seattle. Although the release was not an RDD, it resulted in at least \$156 million in cleanup and remediation costs, closure of the medical facility for 2 years, and ongoing negative impacts on researchers and medical professionals. This accident illustrates the risk posed by security failures involving similar quantities of material. We continue to believe that by implementing our recommendation, NRC would have better assurance that it considers more likely and more significant consequences of an RDD when establishing its security requirements for radioactive material.

Director: Allison Bawden, Natural Resources and Environment

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Improving the Reliability of Cost Estimates

Nuclear Regulatory Commission: NRC Needs to Improve Its Cost Estimates by Incorporating More Best Practices. GAO-15-98. Washington, D.C.: December 12, 2014.

Recommendation: To improve the reliability of its cost estimates, as NRC revises its cost estimating procedures, the NRC Chairman should ensure that the agency aligns the procedures with relevant cost estimating best practices identified in the *GAO Cost Estimating and Assessment Guide* and ensure that future cost estimates are prepared in accordance with relevant cost estimating best practices.⁷

Actions needed: NRC generally agreed with the recommendation. NRC updated a draft of its cost estimating procedures in January 2020 to conform with agency-wide directives and provided it to the NRC Commissioners for their review. However, NRC has not issued the final procedures. To fully implement this recommendation, NRC needs to issue its update to its cost estimating procedures to align with best practices identified in our cost estimating guide. By doing so, NRC will have better assurance that its cost estimates are reliable and that the NRC Commissioners have adequate information on which to base their regulatory decisions.

Director: Frank Rusco, Natural Resources and Environment

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⁷GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, GAO-20-195G (Washington, D.C.: Mar. 12, 2020).