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Comptroller General
of the United States

May 5, 2025

The Honorable David A. Wright
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Priority Open Recommendations: Nuclear Regulatory Commission

Dear Chairman Wright:

Congratulations on your appointment. The purpose of this letter is to call your personal attention to three areas based on GAO's past work and nine open priority recommendations, which are enclosed.¹ Additionally, there are 15 other GAO open recommendations that we will continue to work with your staff to address.

We are highlighting the following areas that warrant your timely and focused attention. Specifically:

Addressing the security of radiological sources. The Nuclear Regulatory Commission (NRC) needs to take additional actions to enhance the security of radioactive materials while also ensuring the protection of public health and safety. For example, americium-241, including foreign-sourced material, is commonly used for medical, industrial, and research purposes, but there is no disposal pathway for americium-241 from other countries. This situation leaves the material vulnerable to loss, abandonment, and at risk of being stolen for use in a dirty bomb that could result in billions of dollars in socioeconomic damage. We recommended that NRC, in coordination with the Department of Energy, evaluate options and act to better secure americium-241 when the origin is foreign.

Additionally, NRC needs to address vulnerabilities in its licensing and verification processes. Specifically, we previously recommended that NRC add security features—such as multifactor authentication—and requirements that vendors verify certain licenses with the appropriate regulatory authority. Taking these actions would help make licenses less vulnerable to alteration or forgery and provide NRC with greater confidence that only valid licenses were used to purchase high-risk radioactive materials.

In September 2024, we found that continued resistance on the part of NRC to implementing our recommendations in this area may warrant legislative action. We made two matters for congressional consideration, suggesting Congress consider directing NRC to take certain actions, such as verifying licenses with the regulator.

¹GAO considers a recommendation to be a priority if, when implemented, it 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.

Improving the reliability of cost estimates. NRC cost estimates help inform the Commissioners' regulatory decisions, such as modifications to nuclear power plants. NRC should take action to improve the reliability of these estimates. For example, NRC has yet to complete and issue updated cost estimating procedures to align with best practices identified in GAO's cost estimating guide. Doing so will better ensure that NRC's cost estimates are reliable and provide the Commissioners with adequate information on which to base their decisions.

Improving risk-informed decision-making. NRC promotes risk-informed decision-making to provide quality licensing and oversight of nuclear facilities. However, NRC has yet to develop guidance for incorporating climate projections data into licensing and oversight processes. Doing so will help ensure that NRC is using the best available information to adequately address the risks climate change poses to nuclear power plants. This will better enable NRC to fulfill its mission to protect public health and safety.

Please see Enclosure 1 for additional details about the status and actions needed to fully implement all nine open priority recommendations out of the 24 total recommendations that remain open.

We provide, in Enclosure 2, additional information on NRC's recommendation implementation rate, the implemented, closed, and new priority recommendations since our May 2024 letter to Chairman Hanson, and relevant management challenges from our High-Risk List that apply to NRC. In response to legislation enacted in December 2022, this enclosure also includes information on any additional congressional oversight actions that can help agencies implement priority recommendations and address any underlying issues relating to such implementation.

Copies of this letter are being sent to the appropriate congressional committees. The letter will also be available on the GAO website at [Priority Recommendations | U.S. GAO](#). We also plan to send a separate letter specifically focused on open recommendations and key issues related to information technology. This letter will be sent to your Chief Information Officer.

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 GaffiganM@gao.gov. Contact points for our offices of Congressional Relations and Public Affairs may be found on the last page of this letter. Our teams will continue to coordinate with your staff on addressing these priority recommendations and the remaining 15 open recommendations. I appreciate NRC's continued commitment and thank you for your personal attention to these important issues.

Sincerely,

//SIGNED//

Gene L. Dodaro
Comptroller General
of the United States

Enclosures – 2

Enclosure 1

Priority Open Recommendations to the Nuclear Regulatory Commission

Addressing the Security of Radiological Sources

High-Risk Radioactive Material: Opportunities Exist to Improve the Security of Sources No Longer in Use. [GAO-24-105998](#). Washington, D.C.: November 30, 2023

Year Recommendation Made: 2024

Recommendation: The Chairman of the Nuclear Regulatory Commission (NRC), in coordination with the Department of Energy, and in consultation with other relevant stakeholders, should conduct an analysis to evaluate options and take action to facilitate long-term storage, within agency authorities, to better secure foreign-origin americium-241 until a permanent disposal or viable recycling option is available.

Actions Needed: NRC generally agreed with our recommendation. However, as of April 2025, NRC had not taken action to address this recommendation. To fully address this recommendation, NRC needs to conduct an analysis of options to better secure foreign-origin americium-241 and then take action to implement one or more of the options. Doing so will reduce the risk that this material will be lost, stolen, or used by a bad actor to create a dirty bomb.

Director: Allison Bawden, Natural Resources and Environment

Contact Information: BawdenA@gao.gov

Preventing a Dirty Bomb: Vulnerabilities Persist in NRC's Controls for Purchases of High-Risk Radioactive Materials. [GAO-22-103441](#). Washington, D.C.: July 14, 2022

Year Recommendations Made: 2022

Recommendation: The Chairman of NRC should immediately require that vendors verify category 3 licenses with the appropriate regulatory authority.

Actions Needed: NRC partially agreed with this recommendation, and the agency committed to take action to require that vendors verify category 3 licensees with the appropriate regulatory agency. However, NRC did not agree to take immediate actions to address license vulnerabilities. In March 2024, the Commission announced that it was unable to reach a decision, therefore, the draft rule that would require specific measures for licensees to verify licenses for category 3 quantities of radioactive material was not approved. As a result, license vulnerabilities remain. In April 2025, no further action had been taken. We continue to believe that NRC should immediately address license vulnerabilities so that a malevolent actor does not use a fake or forged license to acquire a dangerous quantity of radioactive material for use in a dirty bomb. In September 2024, after NRC staff confirmed that the agency had no plans to address this issue further, we made a matter for congressional consideration, suggesting Congress direct NRC to implement these actions.

Recommendation: The Chairman of NRC should add security features to its licensing process to improve its integrity and make it less vulnerable to altering or forging licenses. These security features could include multifactor authentication or moving away from paper licenses to

electronic-based licensing.

Actions Needed: NRC agreed with this recommendation. As of February 2024, NRC stated as part of its ongoing rulemaking process, it would develop additional guidance for regulators and licensees to reduce the potential that altered or counterfeit licenses could be used to purchase category 3 material. As of April 2025, NRC had completed an evaluation of the advantages and disadvantages of various security features and is considering integrating the new features into radioactive materials documents by the end of fiscal year 2025. We continue to believe that NRC should immediately address these vulnerabilities so that a malevolent actor does not alter or forge license to acquire a dangerous quantity of radioactive material for use in a dirty bomb. In addition, we made another recommendation in an Official Use Only version of our report that, if implemented, would reduce the risk of a dirty bomb.²

Director: Allison Bawden, Natural Resources and Environment

Contact Information: BawdenA@gao.gov

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

Year Recommendations Made: 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 agreed nor disagreed with our recommendation and stated that it would consider the recommendation as part of an existing working group. In August 2017, this same working group provided the Commission with an analysis of these that concluded that category 3 materials did not require additional security measures. In our April 2019 report, we provided new information, such as expert views and studies of the risks of category 3 materials being used in a radiological dispersal device (RDD)—also known as a dirty bomb. However, as of April 2025, NRC had not updated the analysis to consider this new information. We continue to believe that by implementing our recommendation, NRC would have greater assurance that its requirements are sufficient to help prevent 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 1 month after we published our April 2019 report, a medical facility at the University of Washington in Seattle was the site of an accidental release of a small amount of radioactive material. Although the release was not from an RDD, it resulted in at least \$156 million in cleanup and remediation costs, closure of the

²GAO, *Preventing a Dirty Bomb: Vulnerabilities Persist in NRC's Controls for Purchases of High-Risk Radioactive Materials*, GAO-22-106076SU (Washington, D.C.: Aug. 23, 2022).

medical facility for 2 years, and negative effects on researchers and medical professionals. The accident also illustrates the risk posed by security failures involving similar quantities of material.

We maintain that by implementing our recommendation, NRC would have greater assurance that it considers more likely and significant consequences of an RDD when establishing security requirements for radioactive material. In September 2024, after NRC staff confirmed that the agency had no plans to address this issue further, we made a matter for congressional consideration, suggesting Congress direct NRC to implement these actions.

Director: Allison Bawden, Natural Resources and Environment

Contact Information: BawdenA@gao.gov

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

Year Recommendations Made: 2016

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 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. (Agreement states are states that enter into agreements with NRC to operate their own radioactive materials licensing program.)

Action Needed: NRC neither agreed nor disagreed with our recommendation and stated that it would consider the recommendation as part of an existing working group. In August 2017, this same working group provided the Commission with an analysis of these issues and recommended against including both category 3 sources in the National Source Tracking System and adding information on agreement state category 3 licenses to the Web-based Licensing System. As of April 2025, NRC had not changed its position.

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 that are, in aggregate, greater than what they are authorized to possess. In September 2024, after NRC staff confirmed that the agency had no plans to address this issue further, we made a matter for congressional consideration, suggesting Congress direct NRC to implement these actions.

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.

Action Needed: NRC neither agreed nor disagreed with this recommendation. From December 2022 until March of 2024, NRC considered a rule to require that licensees transferring category 3 quantities of radioactive material to verify licenses in NRC's License Verification System or by

directly contacting NRC or the agreement state. However, in March 2024, the Commission announced that it was not able to reach a decision, therefore, the draft rule was not approved. NRC subsequently announced it was no longer pursuing issuing this rule. Nonetheless, we maintain that immediately implementing our recommendation would enhance NRC's ability to prevent bad actors from manipulating the system and obtaining dangerous quantities of radioactive material. In September 2024, after NRC staff confirmed that the agency had no plans to address this issue further, we made a matter for congressional consideration, suggesting Congress direct NRC to implement these actions.

Director: Allison Bawden, Natural Resources and Environment
Contact Information: BawdenA@gao.gov

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

Year Recommendation Made: 2015

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.³

Actions Needed: NRC generally agreed with our 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. In May 2024, NRC's Commissioners directed staff to further revise the agency's cost estimating procedures to reflect both updated guidance issued by the Office of Management and Budget (OMB) in November 2023 (OMB Circular A-4) and GAO's best practices identified in our cost estimating guide.⁴ As of April 2025, NRC had not issued the final procedures. To fully implement this recommendation, NRC needs to issue the update to its cost estimating procedures to align with best practices identified in GAO's cost estimating guide. By doing so, NRC will have greater assurance that its cost estimates are reliable, and that NRC Commissioners have adequate information with which to base regulatory decisions.

Director: Frank Rusco, Natural Resources and Environment
Contact Information: RuscoF@gao.gov

³GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, [GAO-20-195G](#) (Washington, D.C.: Mar. 12, 2020).

⁴[GAO-20-195G](#).

Improving Risk-Informed Decision Making

Nuclear Power Plants: NRC Should Take Actions to Fully Consider the Potential Effects of Climate Change. [GAO-24-106326](#). Washington, D.C.: April 2, 2024

Year Recommendation Made: 2024

Recommendation: The Chair of the NRC should direct NRC staff to develop and finalize guidance on incorporating climate projections data into relevant processes, including what sources of climate projections data to use and when and how to use climate projections data.

Actions Needed: NRC said this recommendation was consistent with actions that are either underway or under development. As of April 2025, NRC officials told us that staff were conducting a comprehensive review of relevant regulatory guides to determine whether any require updates to address considerations related to climate change. NRC staff has also contracted support to review of the *Fifth National Climate Assessment* and supporting technical literature to determine whether new dedicated guidance related to use of climate projections is warranted. NRC expects this work to be a multi-year effort. To fully address our recommendation, NRC needs to develop and finalize guidance for incorporating climate projections data into relevant processes, including what sources of climate projections data to use and when and how to use the data. Doing so will help ensure that NRC is using the best available information and adequately addressing the risks that climate change poses to nuclear power plants. This will better enable NRC to fulfill its mission to protect public health and safety.

Director: Frank Rusco, Natural Resources and Environment

Contact Information: RuscoF@gao.gov

Enclosure 2

Key Information About the Status of GAO Recommendations and Improving Agency Operations

Nuclear Regulatory Commission's Recommendation Implementation Rate

In November 2024, we reported on a government-wide basis, 70 percent of our recommendations made 4 years ago were implemented.⁵ The Nuclear Regulatory Commission's (NRC) recommendation implementation rate was 100 percent. As of March 2025, NRC had 24 open recommendations.

Implemented, Closed, and New Priority Recommendations

Our May 2024 letter to Chairman Hanson identified eight priority recommendations.⁶ Since then, no recommendations were implemented or closed as no longer valid. We added one new priority recommendation in the improving risk-informed decision-making area. (See Enclosure 1.)

High-Risk List

In February 2025, we issued our biennial update to our High-Risk List.⁷ This list identifies government operations with greater vulnerabilities to fraud, waste, abuse, and mismanagement. It also identifies the need for transformation to address economy, efficiency, or effectiveness challenges.

Several other government-wide, high-risk areas also have direct implications for NRC and its operations. These include improving management of [IT acquisitions and operations](#), improving strategic [human capital](#) management and [personnel security clearance process](#), managing [federal real property](#), and ensuring the [cybersecurity](#) of the nation.

We urge your attention to the other 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 within 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.⁸

⁵GAO, *Performance and Accountability Report: Fiscal Year 2024*, [GAO-25-900570](#) (Washington, D.C.: Nov. 15, 2024).

⁶GAO, *Priority Open Recommendations: Nuclear Regulatory Commission*, [GAO-24-107311](#) (Washington, D.C.: May 10, 2024).

⁷GAO, *High-Risk Series: Heightened Attention Could Save Billions More and Improve Government Efficiency and Effectiveness*, [GAO-25-107743](#) (Washington, D.C.: Feb. 25, 2025).

⁸GAO, *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).

Congress's Role on GAO Recommendations

We also recognize the key role Congress plays in providing oversight and maintaining focus on our recommendations to ensure they are implemented and produce their desired results. Legislation enacted in December 2022 includes a provision for GAO to identify any additional congressional oversight actions that can help agencies implement priority recommendations and address any underlying issues relating to such implementation.⁹

Congress can use various strategies to address our recommendations, such as incorporating them into legislation. With specific regard to our priority recommendations to NRC in the area of addressing the security of radiological sources, we have made two matters for congressional consideration. In September 2024, given NRC's continued resistance to implementing our recommendations to incorporate socioeconomic consequences into its decision-making and to address gaps in security for category 3 materials, we noted that legislative action may be needed.¹⁰ Specifically, we recommended that Congress consider directing NRC to (1) incorporate socioeconomic consequences into NRC's decision-making for setting security measures for radioactive materials, and (2) update its regulations accordingly.

We also recommended that Congress consider directing NRC to immediately require that all category 3 licenses be added to the Web-based Licensing System, all category 3 sources be included and tracked in the National Source Tracking System, and that all vendors verify the legitimacy of would-be purchasers' category 3 licenses with the regulator. In February 2025, a bill was introduced that would implement these matters.¹¹

Congress can also use its budget, appropriations, and oversight processes to incentivize executive branch agencies to act on our recommendations and monitor their progress. For example, Congress can hold hearings focused on NRC's progress in implementing GAO's priority recommendations, withhold funds when appropriate, or take other actions to provide incentives for agencies to act. Moreover, Congress can follow up during the appropriations process and request periodic updates.

Congress also plays a key role in addressing any underlying issues related to the implementation of these recommendations. For example, Congress can pass legislation providing an agency explicit authority to implement a recommendation or requiring an agency to take certain actions to implement a recommendation.

⁹James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, Pub. L. No. 117-263, § 7211(a)(2), 136 Stat. 2395, 3668 (2022); H.R. Rep. No. 117-389 (2022) (accompanying Legislative Branch Appropriations Act, H.R. 8237, 117th Cong. (2022)).

¹⁰GAO, *Preventing a Dirty Bomb: Nuclear Regulatory Commission Has Not Taken Steps to Address Certain Radiological Security Risks*, [GAO-24-107014](#) (Washington, D.C.: Sept. 30, 2024).

¹¹Securing our Radioactive Materials Act, H.R. 1636, 119th Cong. (2025).

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