

**U.S. Nuclear Regulatory Commission Actions to Address Priority Open
U.S. Government Accountability Office Recommendations**

Addressing the Security of Radiological Sources

The U.S. Government Accountability Office (GAO) identified four open priority recommendations for the U.S. Nuclear Regulatory Commission (NRC) from two reports that addressed the security of Category 3 sources (GAO-16-330) and security measures for radioactive materials that could be dispersed through a radiological dispersal device (GAO-19-468).

In the report GAO-16-330, "Nuclear Security: NRC Has Enhanced the Controls of Dangerous Radioactive Materials, but Vulnerabilities Remain," GAO recommended that the NRC:

- 1) Take the steps needed to include Category 3 sources in the National Source Tracking System [NSTS] and add Agreement State Category 3 licenses to the Web-Based Licensing [WBL] System as quickly as reasonably possible.
- 2) At least until such time as Category 3 licenses can be verified using the License Verification System [LVS], require that transferors of Category 3 quantities of radioactive materials confirm the validity of a would-be purchaser's radioactive material license with the appropriate regulatory authority before transferring any Category 3 quantities of licensed material.

In response to both GAO-16-330 and Commission direction in Staff Requirements Memorandum (SRM) for COMJMB-16-0001, "Proposed Staff Re-Evaluation of Category 3 Source Accountability," the NRC staff formed the Category 3 Source Security and Accountability Working Group. The working group was tasked to: 1) evaluate the pros and cons of different methods for verifying the validity of a license before a Category 3 source is transferred; 2) evaluate the pros and cons of including Category 3 sources in the NSTS; 3) assess additional options for addressing GAO source accountability recommendations; 4) identify changes in the threat environment since 2009 and determine whether those changes support adding Category 3 sources to the NSTS; 5) assess the risks posed when a licensee possesses enough Category 3 sources to require the higher level protections required for Category 2 quantities; and 6) collaborate with Agreement States, non-Agreement States, licensees, public interest groups, and industry groups to fully assess the potential impact of any recommendations made by the working group. The working group also considered relevant recommendations made by previous working groups that evaluated license verification and the effectiveness of Title 10 of the *Code of Federal Regulations* Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material."

The NRC staff's evaluation and recommended path forward is described in SECY-17-0083, "Re-Evaluation of Category 3 Source Security and Accountability in Response to SRM [Staff Requirements Memorandum] COMJMB-16-0001" (Agencywide Documents Access and Management System [ADAMS] Accession No. [ML17188A249](#)).

On December 21, 2021, in SRM SECY-17-0083 ([ML21355A290](#)), the Commission directed the NRC staff to pursue rulemaking to:

- 1) Require safety and security equipment to be in place before granting a license for an unknown entity to address the concern related to obtaining a valid license using a fictitious company or by providing false information.
- 2) Clarify license verification methods for transfers involving quantities of radioactive material that are below Category 2 thresholds to: (a) update the oral certification method to require that the certification be followed up with confirmation using one of the other acceptable verification methods in 10 CFR Parts 30, 40, and 70, and (b) remove the obsolete method of obtaining other sources of information compiled by a reporting service from official records.
- 3) Require licensees transferring Category 3 quantities of radioactive material to verify licenses through the LVS or the regulatory authority.¹ In addition, the Commission directed the staff to evaluate and seek stakeholder comment on whether there is any subset of routine transactions involving established licensees to which the enhanced license verification requirement should not apply or should apply with reduced frequency.

The Commission approved the NRC staff's recommendation not to amend the regulations to: (a) require inclusion of Category 3 sources in the NSTS; or (b) impose security requirements to prevent aggregation of Category 3 sources to a Category 2 quantity of radioactive material. The NRC staff has begun its rulemaking process as directed by the Commission. Under the current rulemaking schedule², the draft proposed rule will be sent for Commission consideration in October 2023.

Agreement States have expressed significant interest in utilizing WBL as a licensing system, beyond the current use of that system for listing all licensees that possess Category 1 and 2 sources. The NRC is focused on assisting Agreement States in adopting WBL. To date, nine of the 39 Agreement States use WBL, and eight more states are in the process of adopting WBL.

In the report GAO-19-468, "Combating Nuclear Terrorism: NRC Needs to Take Additional Actions to Ensure the Security of High-Risk Radioactive Material," GAO recommended that the NRC:

- 1) 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 a radiological dispersal device (RDD).
- 2) 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.

The NRC disagrees with GAO's recommendations regarding evacuation effects and requiring additional security measures, similar to the existing physical protection measures in place for Category 2 quantities of radioactive material, for certain Category 3 radioactive materials. The

¹ Agreement States that do not use WBL as their license tracking system would need to either voluntarily provide their licenses authorizing Category 3 quantities of radioactive material to the NRC to facilitate verification through LVS, or perform manual license verification.

² <https://www.nrc.gov/reading-rm/doc-collections/rulemaking-ruleforum/active/ruledetails.html?id=41>

NRC maintains that the current regulatory requirements provide for the safe and secure use of radioactive materials, regardless of the category of material. The NRC has encouraged GAO to consider the conclusions of the Radiation Source Protection and Security Task Force (Task Force), which includes members from 14 Federal agencies and the Organization of Agreement States, that indicate the current radionuclides and activity thresholds are appropriate for enhanced security. Task Force reports have included statements that “current measures for the security and control of radioactive sources are appropriately protective of risk-significant quantities of radioactive material”³ and that “there are no significant gaps in the area of radioactive source protection and security that are not already being addressed through continued attention by appropriate Task Force agencies.”⁴

GAO also considered postulated fatalities that could occur during evacuations in response to the use of an RDD as part of its basis for recommending increased security measures for radioactive materials. The NRC continues to actively participate in U.S. efforts to educate the public on appropriate responses to emergency situations and to maintain capabilities to mitigate adverse consequences of the misuse of radioactive materials.

The NRC’s established policy on the consequences of concern that form the basis of the regulatory framework for safety and security of radioactive materials continues to be based on potential health effects, not on socioeconomic impacts. The 2019 accidental dispersal of radioactive material at the University of Washington in Seattle demonstrated the importance of public and interagency communications about radioactive materials. The NRC has enhanced its communications and coordination with State partners through a letter to the Agreement State Radiation Control Program Directors.⁵ The NRC is also enhancing its communication and coordination with the National Nuclear Security Administration (NNSA) to reinforce each agency’s regulatory authorities during source removals. This will ensure that future high activity source removals are appropriately planned by NNSA with the managerial controls and safety measures in place to prevent or minimize the possibility or severity of a recurrence of this type of accident, as noted in the Joint Investigation Report.⁶

Improving the Reliability of Cost Estimates

In the report GAO-15-98, “Nuclear Regulatory Commission: NRC Needs to Improve Its Cost Estimates by Incorporating More Best Practices,” GAO stated that the NRC should align its cost estimating procedures with relevant best practices identified in the GAO Cost Estimating and Assessment Guide (GAO Cost Guide).

The NRC is updating its cost-benefit guidance, NUREG/BR-0058, “Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission,” to incorporate cost estimating best practices and the treatment of uncertainty to support the development of more realistic estimates of the costs to implement proposed requirements. This guidance update addresses relevant best practices provided by GAO and feedback provided by licensees and other stakeholders. This update also consolidates guidance documents, incorporates

³ U.S. Nuclear Regulatory Commission. “The 2018 Radiation Source Protection and Security Task Force Report,” January 31, 2019 ([ML18276A155](#)), page 1.

⁴ *Id.*, Executive Summary, page i.

⁵ U.S. Nuclear Regulatory Commission. “Transmission of Background, Key Messages and Questions and Answers on Dispersal of Cesium-137 at the University of Washington in May 2019 (RCPD-20-001),” April 10, 2020 (ML20100P790; non-public).

⁶ National Nuclear Security Administration. “Joint Investigation Report: Sealed Source Recovery at the University of Washington Harborview Training and Research Facility Results in Release of Cesium-137 on May 2, 2019,” <https://www.energy.gov/sites/prod/files/2020/04/f73/JIT-Seattle-Cesium-Event-2019-05-02.pdf>, page 3.

recommendations from the GAO report on the NRC's cost-estimating practices and cost-estimating best practices from the GAO Cost Guide, and captures best practices for the consideration of qualitative factors in accordance with Commission direction in the SRM for SECY-14-0087, "Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses" ([ML15063A568](#)).

The NRC released a draft of the updated cost-benefit guidance (NUREG/BR-0058) in April 2017 for a 60-day public comment period. The NRC staff reviewed and addressed comments, and in March 2018, provided a draft of the final guidance to the Commission for consideration ([ML17221A000](#)). In July 2019, the Commission directed the NRC staff to align the updated guidance with the policy recently approved by the Commission in Management Directive 8.4, "Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests" ([ML18093B087](#)). The NRC staff re-submitted NUREG/BR-0058 to the Commission for consideration in January 2020 ([ML19261A280](#)).

The NRC staff is also developing new guidance located in appendices to NUREG/BR-0058. These appendices address emergent policy issues and guidance enhancements as well as provide references that update pertinent information contained in NUREG/BR-0184, "Regulatory Analysis Technical Handbook," dated January 1997 ([ML111290858](#)). The new appendices provide guidance on data sources, regulatory analysis methods and data for nuclear facilities other than power reactors, severe accident risk analysis, and methods when conducting cost-benefit analyses to satisfy the requirements of the National Environmental Policy Act. These appendices will guide the NRC staff to cost-benefit analysis source data and other reference material and serve as a knowledge management repository. The NRC issued the draft appendices for public comment in April 2021 and held a public meeting in May 2021 to answer stakeholder questions and facilitate public comment. The final guidance contained in these appendices was provided to the Commission for consideration in April 2022 ([ML21228A118](#)).