



OFFICE OF INSPECTOR GENERAL

U.S. Department of Energy

INSPECTION REPORT

DOE-OIG-25-21

June 2025

**REVIEW OF EXPLOSIVES STORAGE AT
THE SAVANNAH RIVER SITE**



Department of Energy
Washington, DC 20585

June 12, 2025

MEMORANDUM FOR THE MANAGER, SAVANNAH RIVER FIELD OFFICE; AND THE
MANAGER, SAVANNAH RIVER OPERATIONS OFFICE

SUBJECT: Inspection Report: *Review of Explosives Storage at the Savannah River Site*

The attached report discusses our inspection of explosives storage at the Savannah River Site (SRS). We found that SRS contractors generally stored explosives material in accordance with Federal and Department requirements. The Department did not require Savannah River Nuclear Solutions, LLC and Battelle Savannah River Alliance, LLC to implement the 2019 version of the Department Technical Standard on explosives safety because efforts to comply with the 2012 version were still in progress when it was issued. According to the National Nuclear Security Administration, the primary difference between these two versions, both generally and specific to explosives storage, was the format of the document itself and not its contents. We also determined that Savannah River Nuclear Solutions, LLC should consider revising the SRS site procedure on explosives safety to clarify requirements about situations regarding explosives that do not require an explosives safety site plan. We have made two recommendations that, if fully implemented, should help ensure that SRS contractors comply with current explosives safety requirements. Management fully concurred with our recommendations.

We conducted this inspection from March 2024 through March 2025 in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation* (December 2020). We appreciated the cooperation and assistance received during this inspection.

A handwritten signature in blue ink that reads "Sarah Nelson".

Sarah Nelson
Assistant Inspector General
for Management
Performing the Duties of Inspector General
Office of Inspector General

cc: Chief of Staff



Department of Energy Office of Inspector General

Review of Explosives Storage at the Savannah River Site (DOE-OIG-25-21)

WHY THE OIG PERFORMED THIS INSPECTION

The Department of Energy manages a significant portfolio of explosives material across its complex of National Laboratories and other facilities. The Savannah River Site (SRS) processes and stores nuclear materials in support of national defense and U.S. nuclear nonproliferation efforts. The Savannah River National Laboratory is a key industrial complex that supports the disposition of nuclear materials, waste management, and environmental cleanup.

Given the importance of explosives safety to protect Department property and personnel, we initiated this inspection to determine whether the Department safely stored explosives at SRS in accordance with Federal and Department requirements.

What Did the OIG Find?

We found that SRS contractors generally stored explosives material in accordance with Federal and Department requirements. During our onsite walkthroughs at SRS in July 2024 with contractor and Federal officials, SRS contractors safely and securely stored explosives in storage locations. Additionally, we did not identify any issues pertaining to vegetation surrounding the explosives storage locations. We did identify that the Department did not require Savannah River Nuclear Solutions, LLC and Battelle Savannah River Alliance, LLC to implement the 2019 version of the Department Technical Standard on explosives safety because efforts to comply with the 2012 version were still in progress. We also determined that Savannah River Nuclear Solutions, LLC should consider revising the SRS site procedure on explosives safety to clarify requirements about situations regarding explosives that do not require an explosives safety site plan.

What Is the Impact?

The Department should take all steps possible for contractors to comply with current Federal and Department requirements and continue to ensure the safe storage of explosives material.

What Is the Path Forward?

We have made two recommendations that, if fully implemented, should help ensure that SRS contractors comply with current explosives safety requirements.

BACKGROUND

The Department of Energy manages a significant portfolio of explosives material across its complex of National Laboratories and other facilities. Located near Aiken, South Carolina, the Savannah River Site (SRS) processes and stores nuclear materials in support of national defense and U.S. nuclear nonproliferation efforts. Savannah River Nuclear Solutions, LLC (SRNS) is the management and operations contractor for SRS and is also the contractor for the National Nuclear Security Administration's (NNSA) tritium operations. The Savannah River National Laboratory, managed and operated by Battelle Savannah River Alliance, LLC (BSRA) for the Department's Office of Environmental Management is a key industrial complex that supports the disposition of nuclear materials, waste management, environmental cleanup, and environmental stewardship at the Department.

Per 10 Code of Federal Regulations (CFR) Part 851, Appendix A, *Worker Safety and Health Functional Areas*, Section 3, contractors responsible for the use of explosives materials must establish and implement a comprehensive explosives safety program and comply with the appropriate explosives safety technical standard. Department Technical Standard DOE-STD-1212-2019 Change Notice No. 1, *Explosives Safety* (DOE-STD-1212-2019), provided the basic technical requirements for an explosives safety program.

Given the importance of explosives safety to protect Department property and personnel, we initiated an inspection to determine whether the Department safely stored explosives at SRS in accordance with Federal and Department requirements.

EXPLOSIVES STORAGE WALKTHROUGHS

We found that the SRS contractors generally stored explosives material in accordance with Federal and Department requirements. During our onsite walkthroughs at SRS in July 2024 with contractor and Federal officials, we observed six of nine explosives storage locations. SRS contractors safely and securely stored explosives in those six explosives storage locations with placards to identify the types of explosives and applicable personnel limits in accordance with 10 CFR 851 and Department requirements. Additionally, we did not identify any issues pertaining to vegetation surrounding the explosives storage locations, as vegetation was controlled to minimize potential damage to the structures to adhere to Department requirements.

SRS CONTRACTORS NOT REQUIRED TO IMPLEMENT DOE-STD-1212-2019

We identified that the Department did not require two SRS contractors, SRNS and BSRA, both of whom are responsible for handling and storing valves and actuators that get assembled into tritium reservoirs, to implement the Technical Standard, DOE-STD-1212-2019. Rather, SRNS and BSRA were contractually required to implement the 2012 archived version, DOE-STD-1212-2012, which was superseded by DOE-STD-1212-2019 in November 2019. According to NNSA, the primary difference between these two versions, both generally and specific to explosives storage, was the format of the document itself and not its contents.

SRNS and BSRA's efforts to comply with DOE-STD-1212-2012 requirements were still in progress when DOE-STD-1212-2019 was issued in November 2019. An SRNS official stated that the effort to comply with DOE-STD-1212-2012 was a lengthy process since some of the requirements were written more from a bulk/large quantity and raw explosives handling standpoint encountered at other NNSA sites. SRNS and BSRA do not handle raw explosives. In July 2024, a Savannah River Field Office official stated that the revision to update DOE-STD-1212-2019 was in progress, and the Department would wait until the revision was issued to begin the process for contractors to come into compliance with the most current version of the Department Technical Standard. The successor to the 2019 version of the Technical Standard, DOE-STD-1212-2025, was issued in January 2025.

OTHER MATTERS

We also determined that SRNS should consider revising the site's SRNS Manual 8Q, Procedure 123, *Explosive Safety* (Manual 8Q), to clarify requirements to include the storage and handling of explosives that do not require an explosives safety site plan (ESSP). An ESSP is a formal package of explosives facility and operations safety documents for Department/NNSA approval before operations start that will become part of the basis for explosives facility operations. In November 2023, SRNS determined that its explosives devices were to be classified as a storage compatibility group that present no significant hazard, and thus do not require an ESSP.

The SRNS Manual 8Q states, "Before an explosive can be brought on site, it must be approved per DOE-STD-1212 and included on the ESSP." The SRNS Manual 8Q does not provide any caveats to the ESSP requirement, such as the actuators and valves that do not require an ESSP. Clarification will provide value and facilitate greater understanding of the site's explosives safety program for external stakeholders, such as independent Federal and Department entities performing safety audits and assessments (e.g., the Defense Nuclear Facilities Safety Board, the Government Accountability Office, and the Department's Office of Enterprise Assessments).

IMPACT

The Department should take all steps possible for contractors to comply with current Federal and Department requirements and continue to ensure the safe storage of explosives material. The safe storage of explosives involves protecting personnel and property from the consequences of munitions and explosives.

RECOMMENDATIONS

We recommend that the Manager, Savannah River Field Office and the Manager, Savannah River Operations Office:

1. Ensure that the contracting officers direct SRNS and BSRA to comply with DOE-STD-1212-2025.

We also recommend that the Manager, Savannah River Field Office:

2. Collaborate with SRNS to determine whether Manual 8Q, Procedure 123, *Explosive Safety*, should be revised to include clarification about explosives that do not require an ESSP.

MANAGEMENT RESPONSE

Management fully concurred with our recommendations and provided details on corrective actions taken and those in progress, which are expected to be completed by January 31, 2026. According to NNSA, its contracting officer will incorporate the updated Technical Standard, *Explosives Safety* (DOE-STD-1212-2025) into the SRNS contract, and to clarify the ESSP requirements that could help external evaluators better understand the explosives storage program at SRS. The Savannah River Operations Office also stated that its contracting officer will incorporate the updated Technical Standard into the BSRA contract.

INSPECTOR COMMENTS

Management's comments and corrective actions are responsive to our recommendations.

Appendix 1: Objective, Scope, and Methodology

OBJECTIVE

We initiated this inspection to determine whether the Department of Energy safely stored explosives at the Savannah River Site (SRS) in accordance with Federal and Department requirements.

SCOPE

The inspection was performed from March 2024 through March 2025. We conducted the inspection at SRS near Aiken, South Carolina. The scope was limited to the storage of explosives at SRS from fiscal years 2022 through 2023. The inspection was conducted under Office of Inspector General project number S24HQ010.

METHODOLOGY

To accomplish our inspection objective, we:

- Identified and reviewed applicable criteria (i.e., laws, regulations, Department directives, as well as policies and procedures) related to the storage of explosives.
- Held discussions with Federal and contractor officials involved with the storage of explosives at SRS.
- Identified SRS contractor personnel responsible for handling and storing explosives. We also reviewed SRS contractor personnel training and certification documentation.
- Reviewed the systems used to track and inventory explosives at SRS.
- Reviewed samples of inventory records for explosives stored at SRS.
- Conducted walkthroughs onsite to visually observe the explosives storage locations used at SRS to store explosives and documented the results.

We conducted our inspection in accordance with the *Quality Standards for Inspection and Evaluation* (December 2020) as put forth by the Council of the Inspectors General on Integrity and Efficiency. We believe that the work performed provides a reasonable basis for our conclusions.

Management officials waived an exit conference.

Appendix 2: Related Reports

Department of Energy Office of Inspector General

- Inspection Report: [*The Department of Energy's Management of Explosive Materials at Lawrence Livermore National Laboratory*](#) (DOE-OIG-20-53, September 2020). The inspection found that Lawrence Livermore National Laboratory managers adequately tracked and stored their explosives but did not fully comply with Federal and Department of Energy requirements. The inspection identified the need for the development of procedures for conducting physical inventories of explosives materials and for ensuring that the inventories are performed by personnel other than the custodians of the explosives.
- Audit Report: [*The Department of Energy's Storage and Disposition of Explosives Materials at Selected Sites*](#) (DOE-OIG-20-50, July 2020). The audit found that the three sites reviewed were generally storing and disposing of explosives material in accordance with Federal and Department requirements. However, weaknesses were noted at all three sites that potentially limit the effectiveness of explosives material control, accountability, and safety. Specifically, weaknesses were identified with control and accountability related to site database inventory systems, physical inventories, and errors in identification labels. These weaknesses are attributed at the three sites to issues in overall explosives inventory controls, including tracking and accountability from acquisition to disposition. Additionally, sites' policies and procedures did not always include steps that met the requirements of a physical inventory or have an effective process to regularly update or replace physical identification labels. Further, sites did not have adequate controls in place to ensure that incompatible explosives material was not moved to or stored in prohibited areas, and storage reviews were not always completed.
- Inspection Report: [*Management of Explosives at Selected Department Sites*](#) (INS-O-12-02, July 2012). The inspection revealed problems with handling and storing explosives at each of the four contractor-operated sites that were visited, potentially increasing the risk of harm to personnel and infrastructure. The inspection also observed that excess combustible and non-combustible materials were being stored in explosives bunkers; incorrect bunker placards and fire symbols were posted on bunkers and buildings; and excess explosives waste was not being disposed of timely. Department management had not focused the attention needed to ensure that the responsible facilities contractors properly implemented Department policies for handling and storing explosives, as required. Also, contractor officials charged with managing and safeguarding explosives had not ensured compliance with various aspects of the *DOE Explosives Safety Manual*.

National Aeronautics and Space Administration Office of Inspector General

- Audit Report: [*Review of NASA's Explosives Safety Program*](#) (IG-13-013, March 2013). The audit identified 155 separate instances of improper storage, handling, or other procedural violations involving energetic materials, some of which could have resulted in significant damage to facilities, injury, or death. For example, the audit found incompatible explosives materials stored in the same location, unsafe distances between

Appendix 2: Related Reports

occupied buildings and storage facilities containing energetic materials, inaccurate or incomplete inventories of energetic materials, and improper inspection procedures for vehicles used to transport these materials. A lack of oversight, resources, and training at both the local and Headquarters level are the primary factors contributing to the identified deficiencies.

Department of Justice Office of the Inspector General

- Evaluation and Inspections Report: [*Review of ATF's Explosives Inspection Program*](#) (I-2013-004, April 2013). From fiscal year 2006 through fiscal year 2011, the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) generally conducted its required explosives inspections and had procedures in place to ensure it did so consistently. However, the review found several areas where the ATF needs to improve its performance. Specifically, the ATF does not: (1) consistently document whether the inspections it conducted meet the *Safe Explosives Act* mandate; (2) effectively use its inspection results data to identify trends in the explosives industry and target resources to address these trends; (3) ensure that buyers with expired licenses do not purchase explosives without authorization during the 45-day regulatory grace period for license renewals; (4) conduct in-person inspections of all explosives end-users that require them; and (5) have an effective way to enforce compliance with out-of-business requirements. Seven recommendations were made to, among other things, improve the ATF's ability to monitor its progress toward completing *Safe Explosives Act*-mandated inspections.

Appendix 3: Management Comments



Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

May 9, 2025

MEMORANDUM FOR SENIOR OFFICIAL PERFORMING THE DUTIES OF
INSPECTOR GENERAL

FROM: EDWIN R. DESHONG EDWIN
ACTING MANAGER DESHONG
SAVANNAH RIVER OPERATIONS OFFICE

Digitally signed by EDWIN
DESHONG
Date: 2025.05.09
13:28:49 -04'00'

SUBJECT: Response to the Office of Inspector General (OIG) Draft Inspection Report,
"Review of Explosive Storage at the Savannah River Site" (S24HQ010)

Thank you for the opportunity to review and comment on the subject draft report. This response addresses the recommendation made to the Department of Energy-Savannah River Operations Office (DOE-SR); we understand that the National Nuclear Security Administration (NNSA) responses will be provided in a separate letter.

The Savannah River Site (SRS) processes and stores nuclear materials to support the national defense mission, as well as the nuclear nonproliferation activities across the United States. SRS is committed to ensuring the safety and security of the personnel and materials within the boundaries of the site. DOE-SR is dedicated to ensuring that explosives are stored safely to protect human health and the environment.

The attachment to this memorandum details actions planned to be taken by DOE-SR to ensure that the Contracting Officers direct Battelle Savannah River Alliance, LLC to comply with the Technical Standard DOE-STD-1212-2025.

If you have any questions regarding this response, please contact Barbara Jackson, Fire Protection Engineer, DOE-SR, office number (803) 226-2446 and email address: barbara.jackson@srs.gov or James Joniec, Industrial Hygienist, Explosive Safety Representative, NNSA-Savannah River Field Office, office number (803) 952-5573 and email address: james.joniec@srs.gov.

Enclosure:
Management Response to OIG
Draft Report

Appendix 3: Management Comments

Enclosure: Memo, Deshong to Senior Official
Performing the Duties of Inspector General,
Subject: Response to OIG Draft Report on
Review of explosive Storage at SRS

Management Response
OIG Draft Report: Inspection Report:
Review of Explosive Storage at the Savannah River Site (S24HQ010)

Recommendation 1: We recommend that the Manager, Savannah River Field Office and the Manager, Savannah River Operations Office: Ensure that the Contracting Officers direct SRNS and BSRA to comply with DOE-STD-1212-2025.

DOE Response: Concur

Planned Actions: DOE-SR's Contracting Officer will incorporate the updated Technical Standard, *Explosives Safety* (DOE-STD-1212-2025) into the BSRA contract.

Estimated Completion Date: January 31, 2026

Appendix 3: Management Comments



Department of Energy
Under Secretary for Nuclear Security
Administrator, National Nuclear Security Administration
Washington, DC 20585



MEMORANDUM FOR THE SENIOR OFFICIAL PERFORMING THE DUTIES OF
INSPECTOR GENERAL

FROM: TERESA M. ROBBINS 
ACTING UNDER SECRETARY FOR NUCLEAR SECURITY
AND ADMINISTRATOR, NNSA

SUBJECT: Response to the Office of Inspector General (OIG) Draft Report, *Review of Explosive Storage at the Savannah River Site* (S24HQ010)

Thank you for the opportunity to review and comment on the subject draft report. This response addresses recommendations made to the National Nuclear Security Administration (NNSA). We understand the Department of Energy's Savannah River Operations Office response will be provided in a separate letter.

We appreciate the inspectors' validation that Savannah River Site (SRS) contractors safely and securely stored explosives in accordance with Federal and Departmental requirements. Prior to the start of the OIG inspection, NNSA was aware that the management and operating contractors were functioning in accordance with the 2012 version of the DOE Technical Standard on Explosives Safety (DOE STD 1212-2012) and has been working with the contractors to bring their explosives storage programs in line with other sites across the Nuclear Security Enterprise in preparation for the release of the revised version of the Technical Standard. The Savannah River Field Office has always intended to require implementation of DOE-STD-1212-2025 and, consistent with the report's recommendations, will incorporate the revised standard into the SRS management and operating contract.

The attached management decision provides detailed responses to the report's recommendations. NNSA has provided technical comments under separate cover for the inspectors' consideration to enhance the accuracy and clarity of the report. If you have any questions regarding this response, please contact Mr. George Webb, Acting Director, Audits and Internal Affairs, at (240) 306-7709.

Attachment

Appendix 3: Management Comments

Attachment

NATIONAL NUCLEAR SECURITY ADMINISTRATION Management Decision

Review of Explosive Storage at the Savannah River Site (S24HQ010)

The Office of Inspector General (OIG) recommends the National Nuclear Security Administration's (NNSA) Manager, Savannah River Field Office:

Recommendation 1: Ensure that the Contracting Officer direct Savannah River Nuclear Solutions, LLC (SRNS) to comply with DOE-STD-1212-2025.

NNSA Management Response: Concur. NNSA's Contracting Officer will incorporate the updated Technical Standard *Explosives Safety* (DOE-STD-1212-2025) into the SRNS contract and work with the contractor to obtain an impact analysis and Compliance Assessment and Implementation Report outlining compliance efforts. The estimated completion date for full implementation of DOE-STD-1212-2025 is January 31, 2026.

Recommendation 2: Collaborate with SRNS to determine whether Manual 8Q, Procedure 123, *Explosive Safety*, should be revised to include clarification about explosives that do not require an explosive safety site plan (ESSP).

NNSA Management Response: Concur. While no deficiencies were identified, we agree that clarifying explosive safety site plan requirements could help external evaluators better understand the explosives storage program at the Savannah River Site. As part of the impact analysis for DOE-STD-1212-2025 referenced in the response to Recommendation 1, SRNS will identify potential updates to Manual 8Q, including clarifications regarding explosive safety site plan requirements. The manual is expected to be updated by January 31, 2026.

FEEDBACK

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