



# Low-Level Waste Disposal Facility Federal Review Group

## AUTHORITY

The *Atomic Energy Act of 1954, Section 161*: Authorizes the Department of Energy (DOE) to govern possession and use of special nuclear material, source material, and byproduct material. DOE implements the authorization through DOE Order 435.1, *Radioactive Waste Management*, and the associated Manual (M) and Guide.

## ORIGINS AND MEMBERSHIP

The DOE M 435.1-1 gives the DOE Office of Environmental Management (EM) the authority to **regulate** low-level radioactive waste (LLW) disposal facilities and the closure of certain deactivated facilities. The Manual also requires the DOE to establish a panel to review LLW disposal facility performance.

The chartered panel is known as the Low-Level Waste Disposal Facility Federal Review Group (LFRG) and is comprised of Federal employees and led by EM. Voting members are nominated by DOE Program Secretarial Offices and DOE Sites that have responsibilities for disposal facilities.

The LFRG is an integral part of the self-regulatory oversight of DOE disposal facilities. The LFRG ensures compliance with DOE M 435.1-1 requirements and consistency in the approach and application of facility design, construction, operation, and closure.

The LFRG protects the public and environment through independent reviews of LLW disposal facilities, tank closures, and technical basis documentation. LFRG uses the DOE M 435.1-1, DOE G 435.1-1, the LFRG Execution Plan, and DOE-STD-5002-2017, *Disposal Authorization Statement and Tank Closure Documentation* to achieve their mission.

## LFRG Members

### Program Secretarial Offices

- Office of Environmental Management (EM)
- Office of Environment, Health, Safety, and Security (AU)
- Office of Nuclear Energy (NE)
- Office of Science (SC)
- National Nuclear Security Administration (NNSA)

### DOE Sites

- Hanford
- Idaho National Laboratory
- Los Alamos National Laboratory
- Nevada National Security Site
- Oak Ridge
- Paducah
- Portsmouth
- Savannah River

## Independent Review Process

1. Site submits technical basis document(s)
2. LFRG Co-chairs appoint Review Team Lead
3. Team Lead identifies team members and develops review plan
4. Co-chairs approve review team
5. LFRG approves review plan
6. Site conducts self-assessment against technical standard review criteria
7. Team reviews technical basis documents and receives site presentations on specific topics
8. Team conducts on-site review
9. Team develops draft review report
10. Site reviews report for factual accuracy
11. Team finalizes Review Report with recommendations to LFRG
12. LFRG votes on the Final Report
13. LFRG tracks site completion of any corrective actions



## INDEPENDENT REVIEWS

Before a disposal facility is constructed, the appropriate Program Secretarial Office must issue a disposal authorization statement (DAS).

The LFRG conducts an independent review to determine if DOE M 435.1-1 required performance objectives have been met by the disposal facility and if a DAS should be issued. The LFRG reviews the underlying technical basis documentation for the facility. The LFRG also provides expert technical and regulatory oversight recommendations.

## INTERACTING ORGANIZATIONS

DOE may construct and operate a waste disposal facility under the provisions of the Atomic Energy Act of 1954 as amended and may be subject to other ancillary regulations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and/or the Toxic Substances Control Act (TSCA). Therefore, coordination between the DOE and other regulatory groups (e.g., U. S. Environmental Protection Agency, host state agencies, and Nuclear Regulatory Commission) may be needed to confirm all regulatory requirements and agreements are met.



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## REQUIRED TECHNICAL BASIS DOCUMENTATION

DOE Standard (DOE-STD-5002-2017), *Disposal Authorization Statement and Tank Closure Documentation* identifies the documents required for Disposal Authorization Statement (DAS) issuance or tank closure. These include:

- Performance Assessment (PA)
- Composite Analysis (CA)
- PA/CA Maintenance Plan
- Preliminary Closure Plan
- Preliminary Monitoring Plan
- Change Control Process

Additionally, for Tank Closures

- Waste Incidental to Reprocessing Evaluation or a Technical Basis for a Waste Determination
- Technical Evaluation Report issued by the Nuclear Regulatory Commission (NRC), as applicable



Savannah River Site

## PERFORMANCE ASSESSMENT (PA)

The DOE Site develops and maintains a site-specific radiological PA. The PA is an analysis conducted to demonstrate there is a reasonable expectation that performance objectives established for the long-term protection of the public and the environment will not be exceeded following closure of the facility. The PA is used to:

- Develop Waste Acceptance Criteria – waste forms, radionuclide content, etc.
- Estimate health effects associated with leaving different amounts of waste in tanks or different levels of contamination in facilities
- Evaluate health effects associated with different remediation options
- Develop Maintenance and Monitoring Plans



Nevada National Security Site

## Regulation within DOE

**DOE Order 435.1, Radioactive Waste Management, and DOE M 435.1-1, Radioactive Waste Management Manual** lists radioactive waste disposal facilities requirements for:

- Site Design
- Facility Evaluation
- Construction
- Operations
- Closure
- Oversight

**DOE-STD-5002-2017, Disposal Authorization Statement and Tank Closure Documentation:**

- Identifies documents required for issuance of disposal or tank closure authorization, including content and formatting guidance
- The approval and issuance process, and
- Maintenance and reporting requirements

## COMPOSITE ANALYSIS (CA)

The DOE Site prepares and maintains a CA. The CA evaluates all sources of radioactive material that may contribute to the long-term dose projected to a hypothetical member of the public from an active or planned LLW disposal facility.

The CA is used for planning radiation protection activities and future use commitments to minimize the need for future corrective action.

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