

**MEMORANDUM OF UNDERSTANDING**  
**BETWEEN UNITED STATES DEPARTMENT OF ENERGY AND**  
**ENVIRONMENTAL PROTECTION AGENCY**

**Information Sharing to Support Updated and/or New Environmental  
Protection Standards for Management and Disposal of Spent Nuclear  
Fuel and High-Level Radioactive Waste**

**I. Purpose and Scope**

The purpose of this United States (U.S.) Department of Energy (DOE)/Environmental Protection Agency (EPA) Memorandum of Understanding (MOU) dated February 12, 2024, is to promote DOE and EPA technical readiness and to facilitate the sharing of technical expertise, knowledge, and data to support the potential development of environmental protection and public health standards for management and disposal of spent nuclear fuel (SNF) and high-level radioactive wastes (HLW).

To ensure the appropriate sharing of technical expertise and information between DOE and the EPA, this MOU addresses technical coordination between DOE and EPA regarding regulatory and research activities related to SNF and HLW management and disposal, including geologic disposal scenarios, waste form and waste canister types, interim storage, waste retrievability, and information on advanced reactor SNF. This MOU does not address, alter or affect DOE and EPA regulatory or research activities related to transuranic waste management, storage, or disposal.

These various regulatory and research activities are coordinated by the EPA's Office of Radiation and Indoor Air (ORIA) and across various offices within DOE's Office of Nuclear Energy (DOE/NE), including DOE/NE-8 (Spent Fuel and Waste Disposition [SFWD]).

The interactions between DOE and the EPA will balance the need to ensure EPA's regulatory independence with the respective responsibilities of each agency to develop sound technical bases for the operation and regulation of SNF and HLW management and disposal facilities.

This MOU does not alter the authorities or independence of the EPA and DOE or their abilities to fulfill their responsibilities.

## **II. Authority**

Section 646 of the Department of Energy Organization Act provides DOE's authority to enter into this MOU. EPA is authorized to enter into this MOU by sections 104(a) and (b) of the Clean Air Act (33 U.S.C. 1254(a) and (b)) and section 1442(a)(1) of the Safe Drinking Water Act (42 U.S.C. 300j-1(a)).

## **III. Background**

DOE conducts research related to the long-term management and disposition of SNF and HLW. These activities include conducting system analyses to evaluate the integrated approach for transport, storage and disposal; identifying potential functional and operational requirements; examining interim storage design configurations; planning for transportation of radioactive materials with appropriate stakeholder and intergovernmental interactions (including State and Tribal governments); prototype railcar development and testing; and environmental analysis tool development.

DOE also sponsors work with national laboratories, industry, and academia to examine alternatives and conduct scientific research and technology development to enable long-term storage, transportation, and geologic disposal of SNF and radioactive wastes. SFWD research has included investigation of SNF, and wastes generated by existing and future nuclear fuel cycle options and technologies that minimize waste generation, improve safety, and complement institutional measures in limiting proliferation risk. The main objective in this R&D is to develop a suite of options that will enable decision-makers to make informed choices about how best to manage SNF and HLW. This R&D will be performed on functions in storage, transportation, and disposal in a variety of geologic environments including salt, clay/shale, and granite/crystalline rock media, as well as work to better understand the potential degradation mechanisms involved in long-term dry cask storage.

EPA sets generally applicable standards for the protection of the environment from radioactive materials. In the future, EPA may issue updated or new generic standards for the management and disposal of SNF and HLW.

## **IV. Roles and Responsibilities of Each Party**

This MOU identifies activities centered around sharing of information and research activities. This will be generally accomplished as follows:

1. Programmatic and Technical Information Exchanges. EPA and DOE will plan and facilitate the exchange of information concerning the objectives, milestones, approaches, and experimental data and results for their ongoing research and regulatory activities related to SNF and HLW. Information exchange meetings will be held, virtually or in-person, as needed. During these meetings, DOE will provide updates for ongoing research and technical information related to the environmental assessment of SNF and HLW. EPA will provide updates on regulatory activities and issues and questions related to regulatory

development, including technical questions for which DOE may be able to provide input. These activities include, but are not limited to, information exchanges on:

- Advanced reactor waste forms and properties,
  - Deep borehole disposal technical issues and aspects,
  - Retrievability and reversibility of emplaced waste,
  - Waste canister types and performance characteristics,
  - Interim storage of HLW and SNF,
  - Process models for generation of waste,
  - Technical aspects of the modeling of different scenarios which may be applicable to the regulatory development process,
  - Technical issues related to uncertainty in doses/radioactive transport through the environment over time with linkage to topics such as lithology, waste packages/form, and hydrology,
  - Effects of near-field (around the canister), medium-field (e.g., seals), and far-field (geology) processes relevant to containment of radionuclides,
  - Saturated and unsaturated field conditions,
  - Protection of human health and the environment,
  - Safety functions.
2. Potential Joint EPA/DOE Sponsored Research and/or Training Activities. EPA and DOE will cooperate, when appropriate, in the identification of additional areas of mutual interest for joint cooperative research, workshops, conferences, and/or training activities.
  3. Transparency and Public Comment. DOE and EPA will strive to make technical information shared under this MOU available for public inspection and comment, subject to each agency's policies and procedures as described in the next paragraph.
  4. Information Sharing. Any information shared by DOE or EPA will be protected as necessary under each agency's existing policies and procedures or as spelled out in future data sharing agreements.

The primary roles and responsibilities of each organization are described below.

### DOE

DOE will provide oversight and direction of its own work, funding authorization, and mission and objectives. DOE will coordinate with EPA on the scope, objectives, research results, and associated funding of mutually agreed cooperative research and/or training activities.

DOE will not make recommendations regarding future or potential EPA regulatory activities in response to technical information requests.

The following are anticipated DOE Roles and Responsibilities:

- DOE will identify points of contact (POCs) to coordinate DOE-EPA information exchanges and cooperative research and/or training activities.
- As appropriate, DOE will provide programmatic and technical information to EPA on research efforts in experimental and analytical activities.
- As appropriate, DOE will provide EPA with access to data, analysis and insights that can support EPA's role as an independent regulator.

## EPA

EPA will provide oversight and direction of its own work, funding authorization, and mission and objectives. EPA will coordinate with DOE on the scope, objectives, research results, and associated funding of mutually agreed cooperative research and/or training activities.

EPA will neither make recommendations regarding specific siting, design or facility concepts nor participate in any DOE site selection process.

The following are the anticipated EPA Roles and Responsibilities:

- EPA will identify POC(s) to coordinate DOE-EPA information exchanges and cooperative research and/or training activities.
- As appropriate, EPA will provide programmatic and technical information to DOE that inform DOE's research efforts in experimental and analytical activities.
- As appropriate, EPA will provide DOE with current information on EPA's regulations, and policy, and/or information DOE needs that would support EPA's regulatory and programmatic goals.

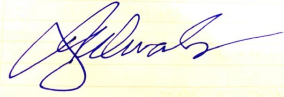
## **V. Funding Authorization**

All commitments made by EPA and DOE in this MOU are subject to the availability of appropriated funds and budget priorities. Nothing in this MOU, in and of itself, obligates the agencies to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations. Any transaction involving transfers of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements.

## **VI. Administration of the MOU**

- a. This MOU becomes effective upon signature by the authorized officials of the Parties.
- b. This MOU may be amended through written agreement of the signatories or their duly authorized successors.
- c. This MOU will remain in effect until terminated by the written notice of either Party submitted three months in advance of termination.
- d. Nothing in this MOU shall be interpreted as limiting, superseding, or otherwise affecting either Agency's normal operations or decisions in carrying out its statutory or regulatory duties, and all efforts described shall be carried out consistent with the law.
- e. DOE and EPA will work together to resolve any organizational conflicts that may arise.
- f. The Department of Energy enters into this Agreement under the authority of section 646 of the Department of Energy Organization Act (Pub. L. 95-91, as amended; 42 U.S.C. § 7256).
- g. The Environmental Protection Agency enters into this Agreement under the authority of sections 104(a) and (b) of the Clean Air Act (33 U.S.C. 1254(a) and (b)) and section 1442(a)(1) of the Safe Drinking Water Act (42 U.S.C. 300j-1(a)).
- h. This Agreement in no way restricts either of the Parties from participating in any activity with other public or private agencies, organizations, or individuals.
- i. This Agreement is neither a fiscal nor a funds obligation document. Nothing in this Agreement authorizes or is intended to obligate the Parties to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value.
- j. This Agreement is strictly for internal management purposes for each of the Parties. It is not legally binding or enforceable and is not intended and shall not be construed to create any legal obligation, express or implied, on the part of either Party. This Agreement is not intended to provide and shall not be construed to provide a private right or cause of action for or by any person or entity, whether in law or in equity.
- k. All agreements herein are subject to, and will be carried out in compliance with, all applicable laws, regulations, and other legal requirements. This Agreement is not intended and shall not be construed to alter any existing laws, regulations, or other legal requirements.

EPA Authorizing Official:



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Jonathan Edwards  
Director  
Office of Radiation and Indoor Air  
U.S. Environmental Protection Agency

Date: 12 February 2024

DOE Authorizing Official (NE-8):



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Paul Murray  
Deputy Assistant Secretary for  
Spent Fuel and Waste Disposition  
Office of Nuclear Energy  
U.S. Department of Energy

Date: 12th February 2024