

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA

AND

THE NATIONAL RADIOACTIVE WASTE MANAGEMENT AGENCY OF FRANCE

CONCERNING

COOPERATION IN THE FIELD OF  
RADIOACTIVE WASTE MANAGEMENT

The Department of Energy of the United States of America (DOE), and the National Radioactive Waste Management Agency of France (Agence nationale pour la gestion des déchets radioactifs – ANDRA), hereinafter collectively the “Participants,”

NOTING the Agreement for Cooperation in the Peaceful Uses of Nuclear Energy Between the United States of America and the European Atomic Energy Community, signed at Brussels November 7, 1995, and March 29, 1996;

NOTING the Participants’ desire to enhance communication and cooperation on the safe, effective and economic handling, storage, transportation, geological disposal, and potential retrieval of spent nuclear fuel and other types of radioactive waste products; and

RECOGNIZING the contribution that such cooperation can make in protecting the environment, while furthering the safe and economic application of nuclear energy,

Have reached the following understanding:

## **SECTION 1 OBJECTIVE**

The objective of this Memorandum of Understanding (Memorandum) is to establish a framework for cooperation in the management of radioactive wastes for the purposes of minimizing the consequences of radioactive contamination on health and environment.

## **SECTION 2 AREAS OF COOPERATION**

1. Specific areas of cooperation under this Memorandum may include, but are not limited to, the exchange of publicly available information and ideas on:
  - A. Radioactive waste:
    - Radioactive waste processing pre-treatment and immobilization
    - Waste separation technologies
    - Long-term behavior in geological conditions
  - B. Deactivation and decommissioning approaches:
    - Justification of site-specific safety and disposal technologies
    - Decontamination and decommissioning technologies and equipment
    - Closed structure monitoring and sensor development
  - C. Groundwater and soil remediation:
    - Field characterization and laboratory testing
    - Remediation of soil contaminated with radionuclides or toxic metals
    - In-situ soil treatment technologies and equipment
  - D. Studies for the geological repository
    - Design and experiments in underground laboratories
    - Advanced simulation capability for environmental management, including uncertainties treatment, codes benchmarking, and coupling
    - Monitoring of the underground repository, geological media, and of the environment
    - Special engineering barriers
  - E. Records, knowledge and memory:
    - Preservation of data
    - Environmental data management
  - F. Environmental and regulatory compliance:
    - Public acceptance
    - External stakeholder outreach
    - Development of standards for and implementation of the clearance process for contaminated items that are below the radiation level established by the regulatory authority

- G. Radioactive waste management:
  - Preparation and packaging
  - On-site transfer and handling of packages
  - Long-term storage, packaging, and transport issues
  - Off-site transportation of waste
  - Optimization of decommissioning waste management
- H. Generic disposal in geologic formations
  - Design: architecture, transportation, and transfer systems
  - Engineered systems
  - Long-term safety demonstration
  - Operational safety and safety management
  - Disposal operations
  - Disposition planning and policy
  - Implementation and management of a repository
- I. Surface interim storage of spent fuel and low-level waste
  - Nuclear material disposition
  - Spent nuclear fuel management and storage technologies
- J. Site specific surface, subsurface storage, and disposal of radioactive wastes
  - Design, in particular related to safety objectives (including long-term safety issues)
  - Waste acceptance criteria in relation to safety objectives, special hazardous waste management, and large disused items management
  - Waste acceptance process in disposal facilities
  - Radioactive waste inventory management
  - Closure of disposal facilities (strategy for capping and monitoring)
- K. Government Authorities
  - Government organizations responsible for radioactive waste management activities;
  - Government interactions with waste generators, stakeholders, and local/regional/national constituencies;
  - Government communication with communities, local authorities, and other relevant stakeholders
- L. Such other areas as may be decided in writing by the Participants.

### **SECTION 3**

### **FORMS OF COOPERATION**

- 1. The forms of cooperation in the framework of this Memorandum may include:
  - A. Exchange of students, scientists, engineers, and other professionals, including those from industry and other non-government sectors, pursuant to appropriate written arrangements between the sending and host institutions;

- B. Exchange of publicly available information on scientific, technical, and public acceptance matters, and results of research development and social impact studies;
- C. Organization of seminars, workshops, and other meetings on mutually determined topics;
- D. Visits by a Participant's specialist teams or experts to the radioactive waste management facilities of the other Participant; and
- E. Sharing of information on analytic studies.

#### **SECTION 4 GENERAL CONSIDERATIONS**

1. This Memorandum does not constitute a legally binding commitment.
2. Each Participant should implement this Memorandum in accordance with the laws, regulations, and other requirements of its respective country and international agreements to which its government is party.
3. Any questions relating to this Memorandum arising during its term should be resolved by consultations between the Participants.
4. Each Participant is to be responsible for the costs of its participation in all cooperative activities carried out in the framework of this Memorandum, unless the Participants determine otherwise in writing. Each Participant's participation in the cooperative activities is to be subject to the availability of funds, resources, and personnel.

#### **SECTION 5 INTELLECTUAL PROPERTY; BUSINESS-CONFIDENTIAL INFORMATION**

The Participants do not anticipate the generation of intellectual property arising from activities under this Memorandum, or the exchange of business-confidential information. If the Participants decide that a particular activity may lead to the creation of intellectual property or the exchange of business-confidential information, they should consult with each other and make appropriate written arrangements for the protection and allocation of such intellectual property and the protection of such business-confidential information.

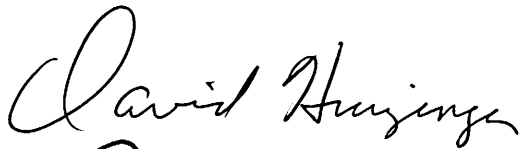
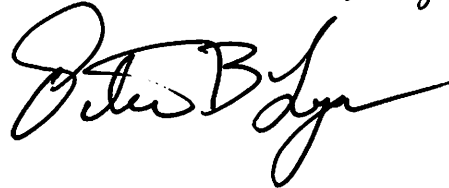
#### **SECTION 6 COMMENCEMENT, MODIFICATION, AND DISCONTINUATION**

1. Cooperation under this Memorandum may commence upon signature, and continue unless discontinued in accordance with paragraph 3 of this Section.
2. The Participants may modify this Memorandum at any time by mutual consent in writing.

3. The Participants may discontinue this Memorandum at any time by mutual consent in writing. A Participant that wishes to discontinue its participation in the activities under this Memorandum should endeavor to provide at least 90 days advance written notice to the other Participant.

Signed at Washington on the 12 day of Oct 2012, and at Paris on the 16<sup>th</sup> day of October 2012, in duplicate.

FOR THE DEPARTMENT OF ENERGY  
OF THE UNITED STATES OF AMERICA:

FOR THE NATIONAL RADIOACTIVE  
WASTE MANAGEMENT AGENCY OF  
FRANCE:

