

**Memorandum of Agreement  
for  
Acceptance of Spent Nuclear Fuel and High-Level Radioactive Waste**

between the  
Assistant Secretary  
for Environmental Management (EM)  
U.S. Department of Energy (DOE), Washington, DC  
and the  
Director  
Office of Civilian Radioactive Waste Management (RW)  
U.S. DOE, Washington, DC

**Revision 2  
January 2007**

<p align="center"><b>REVISION/CHANGE RECORD</b>  <b>for the</b>  <b>Memorandum of Agreement for Acceptance of DOE Spent Nuclear Fuel and</b>  <b>High-Level Waste between the Assistant Secretary for Environmental</b>  <b>Management (EM) and the Office of Civilian Radioactive Waste</b>  <b>Management (RW)</b></p>		
Rev/DCN Number & Date	Revision/Change Description	Pages Affected
Rev. 01 January 1999	Added Title Page, Revision/Change Record, and Quality Assurance Subagreement between the Deputy Assistant Secretary , Office of Waste Management, EM and the Director, Office of Quality Assurance, RW.	Appendix E
Rev. 02 January 2007	Updated transportation, QA, and data responsibilities. Updated responsibilities for NRC Licensing and Certification, responsibilities for EM interim storage, flow down of requirements to waste custodians and NSNFP, and MC&A requirement. Eliminated Appendices that are superseded or incorporated directly into MOA. Improved readability of organizational responsibilities.	All

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**Assistant Secretary**  
**for Environmental Management (EM)**  
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**U.S. DOE, Washington, DC**

**I. Introduction**

**A. Background**

This Memorandum of Agreement (MOA) furthers section 302(b)(4) of the Nuclear Waste Policy Act of 1982, as amended (NWPA), and the regulations setting forth the Standard Contract for Disposal of Spent Nuclear Fuel (SNF) and/or High-Level Radioactive Waste (HLW) (Standard Contract), 10 CFR Part 961, which provide that federal agencies requiring disposal services for SNF and/or HLW must transfer amounts equivalent to the fees that would be paid under the Standard Contract by any other person. This MOA includes, as appropriate, terms and conditions equivalent to those set forth in the NWPA and the Standard Contract for persons other than Federal agencies.

Through this MOA, RW and EM seek to achieve safe and timely disposal of EM SNF and HLW by identifying data needs, interfaces and acceptance criteria and developing compliance procedures needed to support both the licensing, design, construction, and operation of the geologic repository and the acquisition and development of the transportation system necessary to transfer EM SNF and HLW to an RW facility. In addition, this MOA, and implementing documents, will inform EM decisions and activities on preparation for acceptance and transportation of EM SNF and HLW for disposal.

**B. Authorities**

Authorities for this MOA are the NWPA (42 USC 10101) and the Atomic Energy Act of 1954.

**C. Documents required for Implementation**

Other documents (including amendments and revisions thereto) required for implementation of this MOA are:

1. The *Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste*, 10 CFR Part 961;
2. The *OCRWM Quality Assurance Requirements and Description* document (QARD) (DOE/RW-0333P);

3. The *Civilian Radioactive Waste Management System Requirements Document* (CRD) (DOE/RW-0406);
4. The *Waste Acceptance System Requirements Document* (WASRD) (DOE/RW-0351);
5. The *Waste Acceptance Product Specifications for Vitrified High-Level Waste Forms* (WAPS) (DOE/EM-0093);
6. The *Integrated Interface Control Document* (IICD), *Volume 1*, (DOE/RW-0511);
7. The Federal Register: Volume 52, page 31513 (August 20, 1987), *Civilian Radioactive Waste Management; Calculating Nuclear Waste Fund Disposal Fees for Department of Energy Defense Program Waste*;
8. *Reporting of Defects and Noncompliance*, 10 CFR Part 21; and
9. *Acceptance Priority Ranking & Annual Capacity Report* (DOE/RW-0567).

#### D. Policy on Cooperation and Joint Activities

EM and RW will cooperate to ensure that all current and future activities relating to acceptance of EM SNF and HLW continue to be performed in a safe, secure, cost-effective manner, in accordance with applicable requirements, and in a manner that contributes toward a public understanding and acceptance of DOE goals and activities.

1. EM will include QARD and WASRD requirements in contracts defining applicable work scope, goods, and services performed by principal contractors at Federal waste custodian sites.
2. EM and RW will provide mutual support in developing the Corporate Review Budget, for budget justification to the Office of Management and Budget, and in hearings before Congress to implement this MOA, to the extent consistent with their individual missions.

## II. Definitions

Definitions of terms articulated in section 2 of the NWSA, Article I of the Standard Contract, and the Civilian Radioactive Waste Management System Requirements Document, Appendix B, *Definitions*, are incorporated by reference into this MOA. The following additional definitions are specific to this MOA:

1. Acceptance - the transfer of responsibility, custody, and physical possession of SNF or HLW from EM to RW at EM's facility.
2. Acceptance criteria - technical and programmatic requirements, as delineated in the WASRD, which must be satisfied in order for RW to accept, transport, and dispose of EM SNF and HLW.
3. Administrators - the EM and RW staff, designated in writing by the Assistant Secretary for Environmental Management (EM-1) and the Director, Office of Civilian Radioactive Waste Management (RW-1), respectively, who are responsible for executing the terms of this MOA and for resolving or elevating any issues and disputes.
4. Characterization of SNF and HLW - performance of the activities (e.g., data collection, testing, inspections, document preparation, analyses) necessary to

- describe SNF and HLW adequately for acceptance, transportation, and disposal (this includes preclosure and postclosure performance in the repository).
5. Commercial-origin EM SNF – EM SNF that has been irradiated at civilian facilities and for which fees have been, or will be, paid under a standard contract with RW.
  6. Compliance document – an EM- or waste custodian-prepared document which demonstrates compliance with the WASRD and any EM-imposed requirements. An example of a compliance document is the Waste Form Compliance Plan (WCP).
  7. Conditioning - any process which prepares or treats SNF or HLW for transportation or disposal in accordance with regulatory requirements and RW acceptance criteria. This includes processing (e.g., vitrification) of HLW and passivation of SNF.
  8. Conformance Verification - the process used to demonstrate that EM SNF and/or HLW are in accordance with RW acceptance criteria.
  9. DOE SNF - SNF that is managed by DOE, and has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing. DOE SNF includes, but is not limited to, production reactor SNF, research reactor SNF, naval SNF, and some SNF from commercial power reactors (commercial-origin EM SNF).
  10. DOE SNF canister - the outermost, sealed, metallic container maintaining multiple SNF assemblies or intermediate canisters in a dry, inert environment. This MOA refers to an EM SNF canister if such a canister is designed for EM SNF.
  11. EM SNF and HLW – DOE SNF and HLW which is managed by the DOE Office of Environmental Management.
  12. Federal waste custodian – The Departmental field office site organization responsible for the management of SNF and HLW under the oversight of the Office of Environmental Management.
  13. HLW – the highly radioactive material defined in Section (2)(12) of the NWPA. HLW does not include the radioactive waste resulting from the reprocessing of spent nuclear fuel as determined by the Secretary in accordance with Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (PL108-375, October 28, 2004).
  14. HLW canister - sealed, metallic receptacle providing structural support for vitrified HLW. Also known as HLW pour canister.
  15. Incidental maintenance - cask maintenance activities not associated with routine maintenance, to be performed to ensure that transportation cask certification requirements are satisfied. These include correction of problems, including those identified during acceptance, preparation for use, loading, or preparation for shipment. Incidental maintenance is limited to those corrections that are necessary to meet a test or inspection requirement or to perform a step or activity described in the handling procedures.
  16. Integrated Acceptance Schedule - the document to be provided by EM, in coordination with the Naval Nuclear Propulsion Program (NNPP) and other

Federal entities, as appropriate, to RW for approval, which defines the schedule under which RW shall accept DOE SNF and HLW.

17. Nonconforming EM SNF or HLW – EM SNF or HLW that does not meet the applicable RW acceptance criteria outlined in accordance with Section VII.
18. Routine maintenance - scheduled cask maintenance activities necessary to maintain transportation casks in serviceable condition and in compliance with the Certificate of Compliance.
19. RW facility - a facility licensed by the Nuclear Regulatory Commission (NRC) and operated by or on behalf of RW for the purpose of disposing of SNF and HLW in accordance with the NWPA.
20. Safeguards Verification - the process used to demonstrate that appropriate safeguards are in place for all SNF and HLW (consistent with NRC regulations for RW facilities and with DOE regulations for transportation).

### **III. Purpose, Scope and Term**

#### **A. Purpose**

This MOA establishes the terms and conditions under which RW will make available disposal services to EM for its SNF and HLW. This MOA also provides for the recoupment by RW, through appropriations, of all direct costs, indirect costs, and all allocable overhead for the services to be rendered hereunder by RW.

This MOA supersedes previous agreements concerning the establishment of terms and conditions for acceptance and transportation of SNF and HLW between RW and EM, or its predecessors, including any Subagreements between RW and EM appended to prior revisions of this MOA.

#### **B. Scope**

This MOA applies only to SNF and HLW that is the responsibility of, or planned for transfer of title (i.e., ownership) to, EM. This MOA applies to the acceptance of EM SNF and HLW from EM by RW, and the responsibilities of EM and RW relative to the acceptance, transportation, and disposal of these materials. Commercial-origin EM SNF shall be disposed of by RW in accordance with the terms and conditions of the Standard Contract, unless otherwise agreed to by both EM and RW in writing. In the event this MOA conflicts with the terms and conditions of the Standard Contract, the Standard Contract will take precedence.

RW has executed a separate MOA with NNPP. This MOA does not apply to naval SNF, and only refers to NNPP when integration or coordination with EM is required. This MOA does not apply to SNF owned by the commercial industry or to SNF and HLW owned by entities other than EM. This MOA does not apply to commercial HLW that is not owned by DOE. RW will not accept SNF or HLW from any Federal entity unless it enters into a suitable agreement with RW.

### C. Term

This MOA shall remain in effect from the date of the last signature until all EM and RW responsibilities and requirements are satisfied, or until this MOA is superseded by other appropriate documents or jointly rescinded by EM-1 and RW-1.

### IV. Quality Assurance

RW and EM shall abide by requirements of the *OCRWM QARD*, which defines activities subject to quality assurance controls. The quality assurance program requirements shall also apply to all Federal waste custodians, the National Spent Nuclear Fuel Program, and principal contractors performing the following:

- Activities related to a high-level waste form, from development through qualification, production, and acceptance.
- Activities related to the characterization of DOE spent nuclear fuel and its conditioning, treatment, and/or canisterization, through acceptance.
- Activities where the QARD imposes a requirement directly on an RW principal contractor.

RW and EM will cooperate in identifying necessary resources to fulfill quality assurance obligations, particularly in conducting oversight audits of Federal waste custodian, National Spent Nuclear Fuel Program, and principal contractor activities. Audits at each EM site shall be conducted annually, unless a decrease in the frequency of oversight activities is determined jointly between EM and RW, based on the scope and complexity of work. In no case will the frequency be less than once every three years for a site performing work under an approved QARD-compliant program.

EM shall prepare, with concurrence from RW, an Annual QA Oversight Audit Schedule and Resource Plan, which will include the dates and locations of planned audits; resource needs to support the audit team and administrative functions; documentation of deviations in audit frequency; and protocols for communications and interface activities.

#### A. RW Responsibilities

1. RW will use the results of oversight activities as assurance that Federal waste custodians, the National Spent Nuclear Fuel Program, and principal contractors quality assurance programs are in compliance with the QARD and with quality assurance provisions of this MOA.
2. RW is responsible for developing the procedures for Federal waste custodian quality assurance oversight activities (with EM concurrence). In addition, RW is responsible for developing procedures for training of oversight personnel, managing corrective actions, and managing QA records associated with oversight activities.
3. RW shall include EM as a reviewer on all proposed revisions to the QARD that may impact Federal waste custodian or National Spent Nuclear Fuel Program activities.

## B. EM Responsibilities

1. EM is responsible for ensuring the flow down of appropriate quality assurance requirements to contractors performing work subject to the QARD, including applicable contractual documents, as noted in Section I.D.1. EM shall conduct an impact analysis for each QARD revision. If the impact analysis identifies that QARD revisions impact ongoing or future work at a Federal waste custodian's site, EM will direct the Federal waste custodian to update implementing documents, as appropriate.
2. Oversight activities will be conducted in accordance with RW quality assurance procedures for oversight and other relevant procedures.
3. EM shall comply with 10 CFR Part 21, *Reporting of Defects and Noncompliance*, for those basic components to be used or accepted at an RW facility.

C. Responsible parties agree that the NRC staff will be permitted to observe the EM oversight activities. Observation by the NRC shall be governed by the provisions of Section V.F.4.

## V. Acceptance Planning

Acceptance planning addresses the activities needed to ensure that EM SNF and HLW will be integrated into the waste management system during development. Development includes design, analyses, certification of equipment, and licensing of RW facilities. Necessary information to support development must be appropriately documented and controlled. It is expected that such documents will be revised over time and will be used after the developmental phase is complete.

### A. Characterization and Conditioning

1. EM shall condition SNF and HLW, as necessary, to ensure its compliance with applicable RW acceptance criteria.
2. EM shall be responsible for the long-term performance characterization of any HLW forms other than borosilicate glass that require disposal.
3. EM shall be responsible for characterization, and associated costs, of EM SNF, except as noted in Section V.A.4. These costs shall be funded out of the EM appropriation and not from the Defense Nuclear Waste Disposal appropriation.
4. RW shall be responsible for characterization, and associated costs, of EM SNF irradiated at civilian facilities for which fees have been paid under a Standard Contract. These costs shall be funded out of the Nuclear Waste Fund.

### B. Data Needs

EM shall be responsible for providing RW with EM SNF and HLW characterization data to support repository development under 10 CFR Part 63 and the NRC certification of the transportation cask system for EM SNF canisters, bare EM SNF, and HLW in accordance with 10 CFR Part 71. RW will work with EM to minimize the amount of additional data needed to be collected.

1. EM SNF
  - a. RW, in coordination with EM, shall define the data required based on the planned use of the data. Any changes to the data for EM SNF shall be coordinated between RW and EM.
  - b. EM shall provide data, suitable for their intended use in accordance with applicable quality assurance requirements. Unqualified data shall be clearly designated.
  - c. RW shall review the data provided by EM for completeness and consistency with their intended use, and advise EM of any deficiencies within four (4) months after receipt of data provided by EM. RW shall justify the rationale for the intended use of unqualified data.
2. HLW
  - a. The Waste Form Compliance Plan (WCP), Waste Form Qualification Report (WQR), and Production Records presently document the RW data needs for EM vitrified HLW. EM shall provide initial compliance documents for all planned HLW production sites for review and concurrence by RW prior to initial issuance. Significant revisions to compliance documents, particularly those revisions which impact compliance with the WASRD, shall be forwarded by EM to RW for review and concurrence.
3. EM and RW shall identify points-of-contact, in writing, who shall be responsible for ensuring data transmittals from one organization to another are properly managed, routed, and controlled.

#### C. Acceptance Criteria and Design Interfaces

1. RW shall develop and update, in coordination with EM and NNPP, RW acceptance criteria. RW will base the acceptance criteria on SNF and HLW characteristics vital to demonstrating overall performance objectives for acceptance, transportation, and disposal. As new EM SNF and HLW forms are identified RW shall, as needed, incorporate additional criteria into the acceptance criteria. The *Waste Acceptance System Requirements Document* is the RW document containing waste acceptance criteria applicable to EM SNF and HLW. EM may develop additional requirements (e.g., *WAPS*) on EM SNF and HLW, as appropriate.
2. RW, EM, and NNPP design interfaces shall be documented in *Integrated Interface Control Document, Volume 1* (DOE/RW-0511) to define detailed design information on DOE SNF and HLW canisters needed for design, development, and operation of RW facilities and equipment to accommodate DOE SNF and HLW, as well as EM facilities and equipment necessary to ship HLW and EM SNF to an RW facility.
3. The NRC will make the final determination of the adequacy of license specifications and conditions in conjunction with issuing the repository license to receive and possess SNF and HLW. Changes to relevant documents may occur as the licensing process progresses.

#### D. Integrated Acceptance Schedule

1. RW shall document, in the Waste Acceptance System Requirements Document, the acceptance capacity and overall schedule for receipt of EM SNF, naval SNF, and HLW at RW facilities. This acceptance capacity and overall schedule will be based upon the projected total system receipt rate. RW shall update this acceptance capacity and overall schedule, as necessary.
2. EM and NNPP shall jointly submit to RW a coordinated Integrated Acceptance Schedule, prepared by EM, for naval SNF and EM SNF and HLW that is not included in the Acceptance Priority Ranking (APR)/Annual Capacity Report (ACR) at least sixty three (63) months prior to the planned year of delivery. The Integrated Acceptance Schedule will detail the inventories, the specific facility locations, and expected dates for acceptance by RW. The Integrated Acceptance Schedule shall be consistent with statutory direction and existing U.S. Government agreements or court orders. RW plans to accept EM SNF and HLW and naval SNF in a manner that ensures no adverse effect on the APR/ACR and that can be accommodated within the physical capacity of the RW facility.
3. RW shall approve or disapprove the joint Integrated Acceptance Schedule, and any revisions thereto, submitted by EM and NNPP within six (6) months after receipt.
4. In the event RW disapproves the joint Integrated Acceptance Schedule proposed by EM and NNPP, or any revisions thereto, RW, EM, and NNPP shall promptly negotiate a mutually acceptable Integrated Acceptance Schedule. Unresolved issues shall be resolved in accordance with Section XI.
5. EM and NNPP shall update and submit to RW the Integrated Acceptance Schedule at least annually, unless no change is appropriate or necessary. In coordination with EM and NNPP, RW may submit changes to the joint Integrated Acceptance Schedule to support management of EM SNF and HLW and naval SNF at the RW facility.
6. RW, in coordination with EM, shall identify the list of commercial-origin EM SNF for which fees have not been fully paid under a Standard Contract. Such EM SNF shall not be accepted unless remaining fees are paid through RW's annual budget requests for defense nuclear waste disposal activities as described in Section VIII.B.
7. The commercial-origin EM SNF shall remain in the APR/ACR and be disposed of in accordance with applicable terms of the Standard Contract, except that it shall not be traded with EM SNF identified in the Integrated Acceptance Schedule.

#### E. Maintenance of Baseline Documents Applicable to EM SNF and HLW Acceptance

EM and RW manage project and waste custodian activities consistent with DOE Orders using controlled technical, work scope, cost, and schedule baselines. This subsection applies to the definition, control, and integration of EM and RW technical baseline documents. These documents establish applicable requirements, interface agreements, and compliance strategies affecting both EM and RW facilities, operations, waste forms, and equipment necessary to ensure the integration of acceptance activities.

1. EM and RW shall document the hierarchy of baseline documents applicable to EM SNF and HLW acceptance.

2. EM and RW are responsible for the concurrence and control of acceptance criteria, interface control documents, and compliance documents. Implementation of document development, concurrence, and control shall be in accordance with the originating office's current quality assurance and change control procedures.
3. For changes to RW baseline documents, RW shall include EM qualified reviewers in technical reviews and shall include EM as an ad hoc member of the Program Baseline Change Control Board. Changes that do not impact EM, or are typographical, clerical, or editorial, are not included.
4. For changes to EM compliance documents, EM shall include RW qualified reviewers to support development or revisions of EM documents related to acceptance of EM SNF and HLW. RW shall provide concurrence to initial issuances of EM compliance documents and any significant revisions that impact compliance with the WASRD. Concurrence by RW does not relieve EM of the responsibility to meet all applicable requirements contained in RW acceptance criteria.
5. Each organization shall provide the other organization with controlled copies of acceptance criteria, interface control, and compliance documents, upon request.
6. RW and EM shall meet at least annually to discuss issues related to acceptance of EM SNF and HLW.

#### F. NRC Licensing and Certification

1. RW and EM will jointly agree on the scope of the EM SNF and HLW to be included in the license application for the first repository. The scope of SNF and HLW will be documented as specified in Section V.E. This does not guarantee that all such SNF and HLW will be disposed of in the first repository.
2. RW shall have the lead responsibility in repository pre-licensing and licensing interactions with the NRC.
3. EM shall support RW in repository pre-licensing and licensing interactions with the NRC.
4. EM and RW shall abide by applicable rules, regulations, agreements, and policies of the NRC pertaining to pre-licensing and licensing interactions. In addition, pre-licensing interactions shall be conducted in accordance with the *Agreement Between DOE/OCRWM and NRC/NMSS Regarding Pre-Licensing Interactions*, dated November 16, 1998, and procedure LP-REG-003-OCRWM *Interactions with the U.S. Nuclear Regulatory Commission*.
5. RW shall include EM-designated staff as members of the Integrated Project Team for the License Application, supporting development of the Yucca Mountain License Application.
6. RW shall support EM-led interactions with NRC, as necessary. For example, RW will support EM in interactions with NRC staff regarding the EM SNF canister design, development, and testing. These interactions would not directly involve licensing of RW facilities or certification of RW equipment.
7. DOE commitments have had, and will continue to have, an element of uncertainty. Past commitments were made in full cognizance of this uncertainty, and are considered by DOE to have been prudent under the circumstances. Uncertainties associated with future decisions which are dependent upon the RW

acceptance-criteria will be carefully considered, and appropriate measures will be taken to mitigate the potential consequences of a change to the criteria. In the event of significant changes, RW and EM will cooperate to identify appropriate measures to ensure compliance with requirements while minimizing adverse impacts to DOE.

## **VI. Pre-Acceptance Activities**

Following receipt of all necessary licenses and certificates, including construction and acquisition of RW and EM facilities and equipment, key activities will be required to ensure safe and efficient operations are established. This section identifies key responsibilities to prepare EM SNF and HLW for acceptance by RW. These responsibilities will occur at the time of initial waste acceptance and continue through the operations phase.

### **A. Responsibilities for Interim Storage at DOE Sites**

1. EM shall be responsible for construction and maintenance of EM facility capability and assurance of DOE site infrastructure (e.g., access to rail, loading facility) to support RW acceptance.
2. EM shall design and fabricate HLW canisters and EM SNF canisters for shipment to RW. It is RW's expectation that EM SNF and HLW will be provided to RW in canistered form, with exceptions on a case-by-case basis (e.g. DOE SNF of commercial origin).
3. EM shall be responsible for storage of HLW canisters, EM SNF canisters and bare EM SNF until acceptance by RW.
4. RW shall provide available information, such as characteristics of potential EM SNF or HLW transportation package designs, to allow EM to construct and maintain appropriate EM site infrastructure needed to support acceptance.

### **B. Responsibilities for Transportation of EM SNF and HLW**

1. RW shall be responsible for the design, NRC certification and fabrication of the transportation cask system for EM SNF and HLW in accordance with 10 CFR Part 71.
2. RW shall be responsible for all transportation operations after acceptance inside the DOE site boundary for SNF and HLW covered under this MOA.

### **C. Transportation and Loading Operations (in chronological order)**

1. EM shall load the EM SNF into standard canisters, multi-canister overpacks, or other canister configuration consistent with RW acceptance criteria. EM shall notify RW thirty (30) calendar days in advance of the start of any loading activities. If requested by RW, EM shall provide access for RW representatives to observe preparatory and loading activities. RW shall notify EM fifteen (15) calendar days before the start of loading whether RW will observe the activities.
2. EM shall load the bare SNF, EM SNF canisters, or HLW canisters into transportation casks. EM shall notify RW thirty (30) calendar days in advance of the start of loading activities. If requested by RW, EM shall provide access

for RW representatives to observe preparatory and loading activities. RW shall notify EM fifteen (15) calendar days before the start of loading whether RW will observe the activities.

3. EM shall arrange for and provide all preparation, assembly of the packaging for shipment, required inspections, and other activities necessary for the loading of bare EM SNF, EM SNF canisters, and HLW canisters into the transportation casks.
4. RW shall be responsible for routine maintenance of EM SNF and HLW transportation casks and equipment managed by RW.
5. RW shall be responsible for incidental maintenance, protection and preservation of any and all transportation casks and equipment, while in RW's possession and control. Any necessary expenditures for such incidental maintenance shall be funded by RW from the Defense Nuclear Waste Disposal appropriation.
6. EM shall be responsible for incidental maintenance, protection and preservation of the EM SNF and HLW transportation casks and equipment, while in EM's possession and control. Any necessary expenditures for incidental maintenance as a result of EM mishandling and misuse shall be funded by EM appropriations.
7. Routine and incidental maintenance performed by RW and EM shall be performed to the same standards and with similar procedures.

#### D. Training

1. EM and RW shall each be responsible for providing or acquiring, as appropriate, training specific to their various responsibilities (e.g., observation and loading) as described in this MOA.
2. For the loading of the EM SNF and HLW canisters into the transportation casks, RW shall provide the following at least six (6) months in advance, or as requested by EM, to accommodate scheduled deliveries:
  - a. Written procedures for cask handling and loading;
  - b. Training for EM personnel in cask handling and loading, as may be necessary for RW-supplied casks, and
  - c. Technical information, special tools, equipment, lifting trunnions, spare parts, and consumables needed to use and perform incidental maintenance on the cask(s).
3. For the handling of EM SNF and HLW at an RW facility, EM shall provide RW the following at least six (6) months in advance, or as requested by RW, to accommodate handling:
  - a. Written procedures for handling and loading/unloading all EM SNF and HLW;
  - b. Training for RW personnel in handling and loading/unloading all EM SNF and HLW; and
  - c. Technical information needed to procure special tools and lifting equipment, and spare parts and consumables needed for maintenance of the HLW canisters and EM SNF canisters.

#### E. Repackaging Prior to RW Acceptance

If, prior to acceptance by RW, it is determined through the formal baseline control process set forth in Section VII, and with concurrence by EM and RW, that any EM SNF canisters need modification to meet requirements of an NRC-licensed RW disposal facility, EM shall perform these changes/upgrades.

### VII. SNF and HLW Acceptance

The following activities are to be completed at the time of acceptance to ensure the appropriate transfer of custody for SNF and HLW from EM to RW.

#### A. Acceptance Criteria Compliance

1. EM shall document that its SNF and HLW is in compliance with all applicable RW acceptance criteria and certify compliance with all applicable quality assurance requirements.
2. At the time of waste acceptance, records packages describing the characteristics and contents of EM SNF and HLW will be relied upon during conformance verification.
3. RW may conduct its own reviews, tests and analyses, as necessary, to confirm that the SNF and HLW provided by EM are acceptable in accordance with applicable RW acceptance criteria.
4. Nonconforming EM SNF or HLW. Disposition of EM SNF or HLW that does not meet RW acceptance criteria shall be agreed to by RW and EM in accordance with the following:
  - a. To request RW acceptance of nonconforming EM SNF or HLW, EM shall submit an action plan for correction or disposition for review and approval. The action plan must adequately identify and describe the nonconformance, the extent of the nonconformance, any action to change or correct the nonconformance, an evaluation of how the nonconformance will impact RW requirements, and any actions needed to preclude recurrence. RW shall either approve or disapprove the action plan within four (4) months of receipt. Disapprovals shall be accompanied by an explanation. The action plan shall be approved by the EM and RW Administrators, and it shall become part of the records package to which the action plan applies.
  - b. After approval of the action plan, RW will advise EM within four (4) months as to the technical feasibility of accepting nonconforming EM SNF or HLW according to the Integrated Acceptance Schedule, and any schedule adjustment for such services. EM shall implement the approved actions and document in the records package that the action plan has been completed.

#### B. Conformance and Safeguards Verification

1. RW shall perform conformance verification of all SNF and HLW to be accepted by RW. The authorized RW representative shall agree to accept such EM SNF and HLW (which meets applicable RW acceptance criteria) for disposal when RW has completed safeguards verification of the EM SNF and HLW description, determined that the material is properly loaded, packaged, marked, labeled ready

for transportation, and has taken custody, as evidenced in writing, of the material at EM's site. Safeguards verification shall rely on records provided by EM, i.e., EM shall be responsible for the accuracy and content of the records sufficient to satisfy NRC regulations. A properly executed off-site radioactive shipment record (in accordance with 49 CFR Part 172) describing cask contents must be prepared by the authorized EM representative.

2. Improperly described EM SNF or HLW:
  - a. Prior to Acceptance: If prior to its acceptance EM or RW finds that EM SNF or HLW is improperly described, the discovering party shall notify the other party within ten (10) calendar days, in writing, of such finding. RW reserves the right to refuse to accept such EM SNF or HLW until it has been properly described. EM shall not transfer such SNF or HLW to RW unless RW agrees to accept such SNF or HLW under such other arrangements as may be agreed to, in writing, by the parties.
  - b. After Acceptance: If subsequent to its acceptance EM or RW finds that EM SNF or HLW is improperly described, the discovering party shall notify the other party within ten (10) calendar days, in writing, of such finding. In the event of such notification, EM shall provide RW with a proper description within thirty (30) calendar days. If EM fails to provide a proper description, RW may hold in abeyance any and all pickups scheduled thereafter from that site. The RW and EM Administrators shall resolve the discrepancy in accordance with Section XI. Temporary storage for the EM SNF or HLW will be at the facility where the material resides at the time the improper description is discovered (i.e., the SNF or HLW will not be transported or disposed of until the material is correctly described). If, after proper description, the affected material still meets applicable RW acceptance criteria, a disposition decision shall be made by the RW Administrator, in coordination with the EM Administrator (and the NRC if a license condition has been violated). Otherwise, the RW and EM Administrators shall resolve all issues in accordance with Section XI.
3. Material Control and Accounting (MC&A) Transfer Documents:

Transfers of EM SNF or HLW from the EM facility to the RW facility must be reported on DOE/NRC Form 741, in accordance with applicable instructions and requirements in NRC NUREG/BR-0006. Transfers shall be reported on a per-shipment basis and each item (e.g., canister) shall be entered as a line item on the form. EM shall establish and enter applicable element and isotope values on Form 741. RW will accept such values without confirming or verifying them by measurement.

### C. Records Packages

1. EM shall transfer to the authorized RW representative the completed records package, at the time of acceptance. The content of the data records package shall be defined as part of the identification of data needs addressed in Section V.B. These records shall include the following:
  - a. For EM SNF: records packages, agreed to in advance between EM and RW, in order to verify conformance with applicable requirements (e.g.,

- a. transportation and disposal) and properly describe applicable EM SNF and HLW characteristics within sealed canisters and/or casks, including during storage at the EM facility;
- b. For HLW: Production Records, Shipping and Storage Records.
2. Copies of records packages shall be made available to the RW Administrator for review and approval at least twelve (12) months prior to the scheduled acceptance.
3. RW shall review the copies of the records packages for completeness and accuracy, in accordance with appropriate Quality Assurance requirements, and provide results to EM at least six (6) months prior to the scheduled acceptance.
4. Records produced under this MOA shall be processed in accordance with RW records management requirements.

#### D. Acceptance of EM SNF and HLW

RW shall accept SNF and HLW at the EM site, for transportation and disposal, after successful conformance and safeguards verification as set forth above. RW shall be solely responsible for control of all material upon acceptance. Commercial-origin EM SNF will be accepted by RW subject to the terms of the Standard Contract.

#### E. Emergency Deliveries

Emergency acceptance of EM SNF and HLW may be made as agreed to by RW.

### VIII. Fees and Terms of Payment

#### A. Implementation of the MOA

Individual activities of this MOA shall be funded as a part of annual budgeting by the responsible implementing organization.

#### B. Determination of Fees

1. This MOA implements the NWPA provisions for full cost recovery for services outlined in this agreement. The DOE nuclear materials share (which includes EM SNF and HLW, and naval SNF) of the total cost to RW shall be based on the fee calculation methodology published in the Federal Register.
2. The calculation of the outstanding obligation for DOE nuclear materials shall be consistent with the NWPA requirement for equity, i.e., for fees paid by federal agencies to be equivalent to those paid under the Standard Contract. This calculation shall include: previous payments, early payments, expenses for damaged equipment, interest, and credits. The obligation for payments of fees for commercial-origin EM SNF shall be discharged in accordance with the requirements of the Standard Contract.
3. RW shall develop a total system life cycle cost estimate to identify projected annual fees for disposal of DOE nuclear materials.
4. RW's annual budget requests for Defense Nuclear Waste Disposal activities shall include the annual fee for DOE nuclear materials. Defense Nuclear Waste Disposal appropriations received shall be credited toward the outstanding DOE nuclear materials disposal obligation balance.

### C. Payments

1. Prior to physical acceptance of EM-owned materials under this agreement, RW shall determine whether Defense Nuclear Waste Disposal appropriations have satisfied all prior outstanding financial obligations for the disposal of EM SNF and HLW.
2. All prior outstanding financial obligations, up to the year of initial acceptance, must be appropriated into the Defense Nuclear Waste Disposal account before the acceptance by RW of any EM SNF and HLW.
3. During RW operations, if the Defense Nuclear Waste Disposal appropriation is less than the amounts identified in the Fee Payment Schedule for Defense Nuclear Waste Disposal activities, the receipt rate of EM SNF and HLW will be adjusted proportional with the Defense Nuclear Waste Disposal appropriation. RW may adjust the EM Acceptance Schedule, with EM concurrence, to optimize RW operations.

### D. Effect of Payments

Subsequent to appropriation of amounts satisfying all cumulative financial obligations for the total system life cycle cost of disposal of DOE SNF and HLW, the full cost recovery provisions of the NWPA will be considered to have been fulfilled.

### E. Expenditure of Funds

Nothing in this MOA is intended to obligate the expenditure of funds in a manner inconsistent with the NWPA, the Anti-Deficiency Act and other relevant Federal statutes.

### F. Credits for Taxpayer-Funded Expenditures Benefiting RW

1. EM shall identify taxpayer-funded activities that it believes may represent an avoided cost to RW and may further the disposal of commercial SNF.
2. RW shall evaluate any identified activities for possible credit offsetting EM's financial obligation to RW. Credits to EM's financial obligation may include some or all of the cost of proposed activities and accrued interest on these amounts from the time the activity was conducted.
3. RW shall evaluate credit requests based on the following criteria:
  - a. The activity must fall within the scope of RW responsibilities under the NWPA and must have occurred after passage of the NWPA.
  - b. The activity must represent an avoided cost by RW.
  - c. The activity must be conducted in a manner that allows the results to be used without substantive rework.
  - d. The activity must have been conducted under a QA program which either meets current RW QA requirements, the RW QA program requirements in effect at the time the work was accomplished, or can be qualified by EM for use under RW QA program requirements without extensive rework or validation.
  - e. The activity must benefit the disposal of commercial SNF.
4. EM may dispute RW's denial of a credit under the provisions of Section XI.

### **IX. Delays**

In the event that circumstances (e.g., regulatory enforcement actions, *force majeure*) cause a substantial delay in SNF and HLW transfer to RW or lead to an unanticipated increase in the costs associated with handling EM SNF and HLW, the party experiencing the delay or involved in the incident shall notify the other party as soon as practicable. EM and RW will readjust their schedules and activities, as appropriate, to accommodate such delays.

This agreement shall not be abrogated by delays resulting from programmatic, budgetary, or other causes. In the event that there is a dispute because one party must bear costs associated with the delay resulting from a fault of the other party, it shall be addressed in accordance with Section XI. Delays in Defense Nuclear Waste Disposal appropriations shall delay acceptance under this MOA.

### **X. Official Notices**

All necessary communications to implement this MOA shall be in writing and shall be sent to the respective Administrators, as defined in Section II, *Definitions*.

### **XI. Issue and Dispute Resolution**

The RW Administrator shall have authority to implement activities under this MOA for which RW has responsibility. These include near-term scheduling and rapid response issues, and operations that are dictated by NRC-issued Certificates of Compliance or licenses. The EM Administrator shall have authority to implement activities for which EM has responsibility.

Agreements and changes to this MOA proposed by the Administrators shall be submitted to EM-1 and RW-1 for approval. Issues and disputes will be resolved through negotiations between EM and RW. The Administrators shall be responsible for these negotiations and disposition of any issues and disputes. Discussion of issues may be delegated to staff level, as appropriate. Issues or disputes shall be raised to higher authorities within DOE, namely, (1) EM-1/RW-1, and (2) the DOE Under Secretary.

### **XII. Classified and Sensitive Unclassified Information**

For implementation of this MOA, exchange of classified and sensitive unclassified information may be necessary. Handling, storage, and dissemination of such information shall be done in accordance with applicable security requirements. RW shall be responsible for all costs associated with safeguarding such information regarding EM materials at RW facilities after acceptance.

### **XIII. Amendments and Clarifications**

The provisions of this MOA may require future modifications. Accordingly, at the request of either EM or RW, the parties shall negotiate and, to the extent mutually agreed, amend this agreement as necessary or proper to reflect their respective interest, or to reflect changing statutory or legislative direction.

**XIV. Permits**

RW and EM shall procure necessary permits or licenses (including any special nuclear material licenses) and comply with applicable laws and regulations of the United States, States, and municipalities necessary to execute their respective responsibilities and obligations under this MOA.

**XV. Entire MOA**

- A. This MOA, which consists of Sections I through XV, contains the entire agreement between the parties with respect to this subject matter and supersedes any previously agreed to MOA relating to this subject. Any representation, promise, or condition not incorporated in this MOA shall not be binding on either party.
- B. Nothing in this MOA is intended to adversely affect in any way the contractual obligations of any other persons with whom EM or RW are currently under contract.
- C. This agreement shall be deemed effective upon the signature of the affected parties and shall remain in effect until modified or terminated by mutual agreement or until its provisions are superseded by a comprehensive agreement. This agreement will be reviewed annually by all parties to assure the conditions described herein are still appropriate to the Agreement.

  
Assistant Secretary for Environmental  
Management

(Signed: *Feb. 14, 2007*)

  
Director, Office of Civilian  
Radioactive Waste Management

(Signed: January 10, 2007 )