

**MEMORANDUM OF UNDERSTANDING**  
**BETWEEN THE UNITED STATES DEPARTMENT OF ENERGY,**  
**DEPARTMENT OF DEFENSE, ENVIRONMENTAL PROTECTION AGENCY,**  
**NUCLEAR REGULATORY COMMISSION,**  
**AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION**  
**REGARDING THE CENTER FOR RADIATION PROTECTION KNOWLEDGE**

**I. INTRODUCTION**

**A. Purpose.** This Memorandum of Understanding (MOU) between the Department of Energy (DOE), Department of Defense (DoD), Environmental Protection Agency (EPA), Nuclear Regulatory Commission (NRC), and Occupational Safety and Health Administration (OSHA) (participating agencies) provides for the development and establishment of a Center for Radiation Protection Knowledge (Center) at the Department of Energy's Oak Ridge National Laboratory (ORNL), Environmental Sciences Division, Oak Ridge, Tennessee. Under the MOU, the Center would serve as a common resource to assist the participating agencies in the development and application of radiation dosimetry and risk assessment methodologies that are based on the best available scientific information. The Center would be responsive to the participating agencies and administered by DOE.

This MOU is intended to help maintain and preserve U.S. expertise in radiation dosimetry and to ensure that Federal radiation programs are based on the best available information and applied in a consistent manner. Currently, there is no coordinated support by Federal agencies of the ORNL dosimetry program.

**B. Background.** For over fifty years, the Environmental Sciences Division at ORNL has developed and implemented biokinetic and dosimetric models for evaluation of doses to tissues of the body arising from external radiation fields and from intakes of radionuclides. The models

and databases derived from these models have been widely used by the Federal agencies and by international scientific bodies, such as the International Commission on Radiological Protection (ICRP) and the International Atomic Energy Agency (IAEA). Currently, ORNL is one of only four organizations in the world involved in computation of dose coefficients published by the ICRP, and it is the only organization with extensive experience and capabilities in developing and implementing biokinetic and dosimetric models and their associated databases.

The participating agencies, acting through the Interagency Steering Committee on Radiation Standards (ISCORS)<sup>1</sup>, recognize a mutual benefit from interagency coordination of ORNL work performed for individual Federal agencies in the areas of radiation dosimetry and risk assessment. Recognizing the importance of these activities to the primary Federal agencies with regulatory and/or operational authority in radiation protection, ISCORS recommends that an MOU be developed to facilitate such coordination of activities.

In view of the considerable past work on radiation dosimetry that ORNL has performed for these agencies and international scientific bodies, the participating agencies plan to establish the Center in the Environmental Sciences Division at ORNL. The purposes of the Center are to maintain U.S. expertise in radiation dosimetry and to use that expertise to help ensure that Federal radiation protection and risk analysis programs are based on the best available scientific information. The Center would be supported by and responsive to DoD, DOE, EPA, NRC, and OSHA and would be administered by DOE.

**C. Authority.** This MOU is entered into under the authority of Reorganization Plan No. 3 of 1970 (EPA); the Atomic Energy Act of 1954 (AEA), as amended, (EPA, DOE, and NRC); the

---

<sup>1</sup> The Interagency Steering Committee on Radiation Standards (ISCORS) is a voluntary interagency coordinating committee that operates under a Charter. ISCORS was established in 1995 at the urging of Senator John Glenn to, according to the Charter, “foster early resolution and coordination of regulatory issues associated with radiation standards and guidelines.” ISCORS is often attended by representatives from OSTP and OMB who view it as a useful forum for Federal agencies involved in radiation protection to share information and attempt to reach consensus on contentious issues.

Occupational Safety and Health Act of 1970 (OSHA); the Energy Reorganization Act of 1974 (DOE and NRC); and the Department of Energy Act of 1977 (DOE).

Each participating agency asserts the following authority:

EPA is responsible under the AEA (42 USC 2021(h)) to advise the President with respect to radiation matters directly or indirectly affecting health and to recommend guidance to Federal agencies in the formulation of radiation protection standards. EPA is also responsible for setting generally applicable environmental radiation standards under the AEA and for regulating radionuclides under the Clean Air Act and the Safe Drinking Water Act. EPA also responds to radiological incidents and cleans up contaminated sites under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. EPA issues guidance to Federal agencies and standards and regulations in pursuit of these activities.

DOE has authority under the AEA, the Energy Reorganization Act of 1974, and the Department of Energy Act of 1977, to operate a system of laboratories and research centers concerned with the development of alternate sources of energy and studies on the biological and environmental impacts associated with energy sources and the assembly, disassembly and stockpiling of nuclear weapons. DOE has responsibility for assuring adequate protection of workers at its facilities, the public residing near these facilities, and protection of the environment at operating facilities, and during cleanup of facilities and sites previously associated with its activities. DOE issues regulations and directives which it enforces at Departmental and DOE-contractor operations to ensure this protection.

The DoD has a wide variety of activities related to the conduct and control of medical and military uses of radiation and radioactive materials, including cleanup and disposal of radioactive materials on military property. The DoD Components prepare manuals and procedures describing radiation protection activities applicable to their specific needs.

The NRC, created by the Energy Reorganization Act of 1974, exercises regulatory authorities derived from the AEA. The NRC is responsible for regulating civilian applications of nuclear power and research reactors, isotope enrichment facilities, nuclear medicine, industrial and

research applications of radioisotopes, and radioactive waste disposal. NRC conducts research and develops standards and regulations to support its regulatory activities.

OSHA is responsible, under the Occupational Safety and Health Act of 1970 (OSH Act) (29 U.S.C. 651 *et seq.*), for assuring that workers have safe and healthful workplaces and working conditions. To carry out this responsibility, the OSH Act authorizes OSHA to promulgate and enforce occupational safety and health standards and provide for research in the field of occupational safety and health.

Section 6(b) of the OSH Act authorizes OSHA to promulgate occupational safety and health standards, based on the best available evidence, that substantially reduce a significant risk of material harm (29 U.S.C. 655(b)). OSHA adopted its existing ionizing radiation standard in 1971 (29 CFR 1910.1096). That standard applies to all workplaces except those workplaces where other Federal agencies have exercised statutory authority to “prescribe or enforce standards or regulations affecting occupational safety and health” (29 U.S.C. 653(b)(1)).

To provide for scientific research in the field of occupational safety and health and to ensure that OSHA standards are based on the best available evidence, section 20(c) of the OSH Act specifically authorizes OSHA to enter into agreements with public agencies and private organizations to conduct studies relating to its responsibilities under the OSH Act (29 U.S.C. 669(c)).

## **II. PROGRAM AND MANAGEMENT GUIDELINES**

**A. Objectives of the Center.** The primary objectives of the Center are to:

1. Develop and maintain state-of-the-art biokinetic and dosimetric methodologies for evaluation of exposures to radionuclides and radiation;
2. Make those methodologies available to Federal agencies and to the scientific community through such mechanisms as open literature publications, reports, participation in ICRP

Task Groups and other professional activities, distribution of computer software, and maintenance of a Center website;

3. Provide technical assistance to Federal agencies in support of the application of those methodologies and the characterization of associated uncertainties in radiation protection and risk analysis programs, including through the preparation of interagency documents;
4. Under the direction of EPA, in coordination with other Federal agencies, provide technical analyses and documentation to support Federal Guidance Technical Reports establishing guidance on the assessment of dose and of risk, prospectively or retrospectively;
5. Prepare analyses and documentation on topics within the Center's expertise, as requested by any participating agency; and
6. Provide training material and conduct training courses for Federal agencies on specific computer models and modeling methods describing the fate of radionuclides in the human body and related technical topics.

**B. Management and Review.** ISCORs intends to establish a coordination function within its organization which will be carried out through a representative selected from each of the five participating agencies. The expected functions of the coordination group include, but may not be limited to, the following:

1. Act as a facilitating liaison between the Center and the participating agencies;
2. Coordinate Federal agencies' proposals for ORNL technical support activities to avoid overlap and duplication of effort. ISCORs may also propose projects based on the agencies' common needs;
3. Promote consistent and long-term support of the Center;
4. Coordinate interagency review of comments on the draft reports and papers prepared by the Center staff; and

5. Facilitate and coordinate the use of external reviewers for pertinent scientific documents prepared by the Center technical staff.

**C. Funding.** The details of the levels of support to be furnished by each participating agency are expected to be developed in specific Interagency agreements, or other agreements, subject to the availability of appropriated funds and within existing statutory authorities. This MOU shall not be used to obligate or commit funds of any participating agency or as the basis for the transfer of funds. The participating agencies plan to provide each other with mutual support in budget justification to OMB and hearings before the Congress with respect to programs on which the agencies collaborate.

**D. Management Arrangements.** This MOU envisions direct communication between the ISCORS Coordination Group of the participating agencies involved in managing the work the Center performs. The participating agencies expect to use interagency agreements or project plans for setting forth specific arrangements for program implementation, and such agreements or plans may also set forth necessary cooperative arrangements and procedures for handling decisions required by Government officials. The participating agencies plan on implementing specific funding and tasking through interagency agreements, as necessary.

**E. Landlord Responsibilities.** DOE currently owns, leases, and administers the facilities and activities of ORNL and provides for its management and operation by private contractors. Under this MOU, DOE intends to continue its landlord role and responsibilities. The Center will be subject to laws, regulations, orders, and directives applicable to DOE facilities and activities and to DOE contractors.

### III. PATENTS AND PROCEDURAL MATTERS

**A. Patents and Technical Data.** Appropriate patent and other intellectual property provisions shall be included in specific interagency agreements and any other agreements or contracts entered into by the participating agencies in order to implement this MOU. DOE patent and intellectual property policies shall apply to work performed by a DOE contractor, such as ORNL and the Center. Rights to inventions made by United States Government employees shall be determined in accordance with Title 37, Part 501, of the Code of Federal Regulations (37 CFR Part 501), “Uniform Patent Policy for Rights in Inventions Made by Government Employees.”

**B. Public Information Coordination.** Subject to the Freedom of Information Act (5 U.S.C. 552), the participating agencies expect to make decisions on disclosure of information to the public regarding projects and programs referenced in this MOU in consultation with all of the participating agencies.

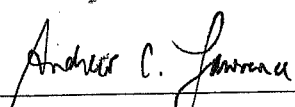
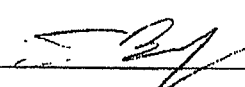
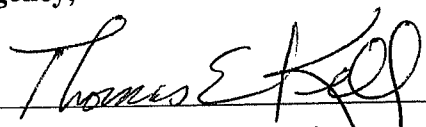

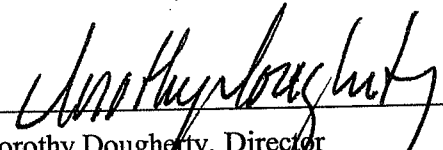
**C. Organizational Conflict of Interest.** The participating agencies are mindful of the conflict of interest requirements and obligations of the respective agencies. With respect to contracts or subcontracts which may be issued by ORNL to implement the objectives of this MOU, the participating agencies plan to consult together regarding the best means to resolve any conflict of interest issues that may arise.

**D. No Private Right of Action.** This MOU does not create any right or benefit, substantive or procedural, enforceable by law or equity, by entities who are not party to this MOU, against DOE, DoD, EPA, NRC and OSHA, their officers or employees, or any other person. This MOU does not apply to any person outside of DOE, DoD, EPA, NRC and OSHA.

**E. Commencement/Duration/Modification/Termination.** This MOU is to take effect upon the last date of the signature of the participating agencies and remain in effect for a period of five (5) years. This MOU may be extended or modified at any time per the mutual written consent of all the participating agencies. A participating agency may terminate its participation in this MOU at any time by providing written notice to the other participating agencies thirty (30) days prior to its withdrawal. The withdrawal of a participating agency does not result in the termination of this MOU for the remaining participating agencies. Additionally, this MOU may be terminated by the mutual written agreement of a majority of the participating agencies.



**SIGNED:**

<p><b>For the U.S. Department of Energy,</b></p> <p> _____ Andrew Lawrence, Director Nuclear Safety, Quality Assurance and Environment</p> <p>Date: <u>10/8/09</u></p>	<p><b>For the U.S. Department of Defense,</b></p> <p> _____ Curtis Bowling, Director Environmental Readiness and Safety</p> <p>Date: <u>11/7/10</u></p>
<p><b>For the U.S. Environmental Protection Agency,</b></p> <p> _____ Thomas E. Kelly, Acting Director Office of Radiation and Indoor Air</p> <p>Date: <u>October 28, 2009</u></p>	<p><b>For the U.S. Nuclear Regulatory Commission,</b></p> <p> _____ Martin Virgilio, Deputy Executive Director for Materials, Waste, Research, State, Tribal, and Compliance Programs</p> <p>Date: <u>10/23/09</u></p>
<p><b>For the Occupational Safety and Health Administration,</b></p> <p> _____ Dorothy Dougherty, Director Directorate of Standards and Guidance, Occupational Safety and Health Administration</p> <p>Date: <u>November 4, 2009</u></p>	