

**MEMORANDUM OF UNDERSTANDING--ARRANGEMENT BETWEEN
THE U.S. ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
AND ATOMIC ENERGY OF CANADA LIMITED
RELATING TO INFORMATION IN THE NUCLEAR FIELD**

Whereas the U.S. Energy Research and Development Administration (ERDA), the successor to the U.S. Atomic Energy Commission, and Atomic Energy of Canada Limited (AECL) have maintained an extensive and close cooperative association pursuant to the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada signed on June 15, 1955, as amended,

Whereas cooperation between ERDA and AECL has also reflected arrangements undertaken pursuant to the 1960 Memorandum of Understanding Regarding the Cooperative Program Between the United States Atomic Energy Commission and Atomic Energy of Canada Limited in the Development of Heavy Water Moderated Power Reactors,

Considering that ERDA and AECL have developed capabilities in the nuclear energy field of mutual interest,

Recognizing from previous and on-going cooperation the advantages of sharing information derived from respective experiences and capabilities,

Noting the respective statutory authority of ERDA and AECL to disseminate non-classified information related to nuclear energy, and

Desiring to engage in specific cooperative arrangements to exchange unclassified information concerning radioactive waste management and systems analysis of heavy water power reactors.

ERDA and AECL, the Parties to this Arrangement, agree as follows:

Topics of Information Exchange

Section 1

Unclassified information in the following civil use areas will be exchanged:

- A. Management of radioactive waste.
- B. Information relevant to systems analysis of heavy water power reactors, including information on reactor fuel cycles and support facilities pertinent to energy systems analysis.
- C. Specific technical scopes on the above are included in the Annexes to this document.

Section 2

In addition to the areas of information exchange identified in Section 1, other areas concerning civil uses of atomic energy may be considered at any time under this Arrangement by mutual agreement of the Parties.

Section 3 Implementation of Information Exchange

- A. Cooperation under this Arrangement may include but is not limited to the following forms:
 - (1) Exchange of correspondence and provision of reports, documents, abstracts, analyses, and evaluated data shall follow procedures agreed upon by the Parties.
 - (2) Exchange of personnel, such as scientists, technicians and engineers, including visits and assignments of personnel to ERDA and AECL facilities and facilities of the Parties' contractors that are involved in the civil uses covered by this Arrangement.
 - (3) Organization of joint consultations, seminars, panels and meetings.

- (4) Transfer of appropriate instrumentation, samples and incidental equipment and materials, under agreed terms and conditions.

B. For implementation of this Arrangement:

- (1) Each Party shall designate a principal coordinator for the areas of information exchange set forth in Section 1 and relevant Annexes.
- (2) Specific activities in the principal areas of information exchange shall be carried out in accordance with Subsidiary Arrangements agreed to by the Parties and which shall be annexed to this Arrangement. Such Subsidiary Arrangements shall be consistent with the provisions of this Arrangement and shall address appropriate considerations such as: legal and financial responsibilities of the Parties; frequency of meetings; particular facilities to be involved; and dissemination of information resulting from cooperation. Subsidiary Arrangements as contemplated in this Section may relate to a principal area of information exchange, a subaspect or subaspects of the principal area involved, or both, as the Parties may agree.

Section 4 Other Forms of Cooperation

- A.** In addition to the exchange of information provided for in Section 3, cooperation under this Arrangement may include joint projects on radioactive waste management, heavy water reactor fuel cycles and support facilities pertinent to energy systems analysis of heavy water power reactors, conduct of irradiation experiments for the ERDA water breeder reactor programs, and such other areas as may be mutually agreed to. Any such joint project shall be the subject of a subsidiary agreement between the Parties. Such subsidiary agreement shall specify details regarding the conduct of the joint project(s) and shall set forth more detailed provision governing such matters as scope of the project(s), materials and equipment to be exchanged, liability (including third party liability) which may result from conduct of the project(s),

special patent, copyright and technical data provision (as appropriate), and financing. To the extent that such subsidiary agreements do not contain provisions different from those contained in this Arrangement, the provision of this Arrangement shall govern.

- B. The Parties agree to engage in discussions, at an appropriate time, with the common purpose of seeking a multinational approach to the terminal storage of radioactive waste and, if found to be an acceptable further step, to undertake jointly funded projects, including field investigations of terminal storage with locations suitable for multinational use.

Basic Conditions

Section 5

The application or use of any information exchanged or transferred under this Arrangement shall be the responsibility of the recipient, and the transmitting Party does not warrant the suitability, completeness, or accuracy of such information for any particular use or application.

Section 6

Cooperation under this Arrangement will accord with applicable laws, regulations and licence requirements of the Parties, including, as may be applicable, the aforementioned Agreement for Cooperation Concerning Civil Uses of Atomic Energy and the 1960 Memorandum of Understanding.

Section 7

Subject to Section 6, the Parties agree to use their best efforts to balance and maximize exchange of information under this Arrangement.

Section 8

The Parties will use their good offices to facilitate activities

under this Arrangement, particularly those involving exchange, visits or assignments of personnel, recognizing that there are established requirements and procedures governing visits and assignments to facilities of the respective Parties, including contractor facilities, which requirements and procedures are not affected by this Arrangement.

Section 9

Each Party shall bear the costs of its own participation under this Arrangement, unless otherwise agreed. Cooperation under this Arrangement shall be subject to the availability of appropriated funds.

Section 10

The Parties agree to establish jointly any detailed procedures required to effectuate this Arrangement and that all situations not specifically covered in this Arrangement shall be settled by mutual agreement governed by the basic principle of equivalent benefits to both Parties.

Patents & Data

Section 11

The Parties agree that the provisions of the Patent Addendum, attached hereto and made a part hereof, are applicable with respect to the disposition of patent rights or any inventions made by the Parties under this Arrangement.

Section 12.

This Arrangement shall not require the furnishing of information which the possessing Party does not have the right to disclose without limitation.

Section 13

Industrial property of a proprietary nature, such as trade

secrets, inventions, patent information and know-how acquired by either Party prior to or outside the course of cooperation under this Arrangement, may be exchanged hereunder. Such information, which shall bear a restrictive designation,

- (a) may be made available by the recipient Party to its employees, and to its prime and subcontractors, for use only within the framework of such contract(s) as relate to the subject matter of the information so furnished; but
- (b) shall not be further disseminated, used for commercial purposes, or made public without the consent of the transmitting Party, except as may be required by the laws of the recipient Party.

For purposes of this Section, "industrial property of a proprietary nature" shall include information which:

- (1) is of a type customarily held in confidence by commercial firms,
- (2) is not generally known or publicly available from other sources,
- (3) has not already been made available by the originating Party or others without an agreement concerning its confidentiality, and
- (4) is not already in the possession of the receiving Party or its contractors and does not come into their possession from another source.

Consultation & Period of Cooperation

Section 14

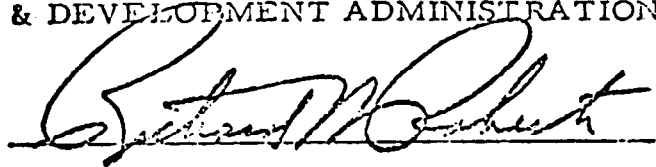
The Parties may consult at any time with respect to modifying the provisions of this Arrangement, including expansion of its scope to

include the undertaking of specific cooperative projects and separate but complementary projects relative to the fields of information exchange covered by this Arrangement.

Section 15

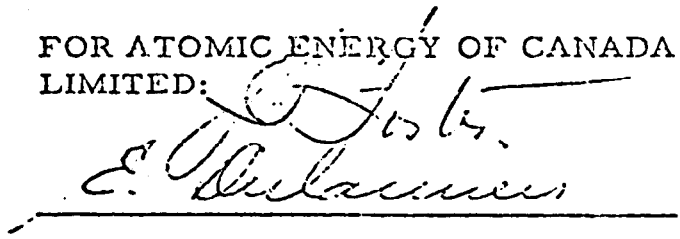
This Arrangement shall enter into force upon the later date of signature by a Party and shall remain in force for a period of four years, unless terminated earlier by mutual agreement of the Parties. The fourth year term may be extended by mutual agreement of the Parties. This Arrangement shall be executed in duplicate.

FOR THE U.S. ENERGY RESEARCH
& DEVELOPMENT ADMINISTRATION:



Date: 9.8.76

FOR ATOMIC ENERGY OF CANADA
LIMITED:



Date: AUG 6 1976

MEMORANDUM OF UNDERSTANDING--ARRANGEMENT BETWEEN THE
U.S. ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
AND ATOMIC ENERGY OF CANADA LIMITED
RELATING TO INFORMATION IN WASTE MANAGEMENT

The technical scope of this activity will include exchanging information in the following areas:

- (1) Terminal Storage in Geologic Formations
 - a. Characterization of Geologic Formations
 - b. Development and Testing of Facilities
 - c. Safety Assessment & Public Acceptance Matters
- (2) Technology of Retrievable Storage
 - a. Design Verification of Canister Storage
 - b. Retrieval Design in Geologic Repositories
- (3) Waste Processing Technology
 - a. High Level Waste Solidification
 - b. Fuel Hardware and Hulls
 - c. Intermediate and Low Level Liquid Waste
 - d. Contaminated Solid Waste
 - i. Combustibles
 - ii. Non-combustibles
 - e. Airborne Waste
 - i. Particulates & Iodine
 - ii. Noble Gases
 - iii. Tritium, including its separation from water
 - iv. Carbon-14
- (4) Environmental Effects
 - a. Assessment Methodology
 - b. Burial Ground Waste Migration Models
- (5) Other aspects as may be mutually agreed upon.

MEMORANDUM OF UNDERSTANDING--ARRANGEMENT BETWEEN THE
U.S. ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
AND ATOMIC ENERGY OF CANADA LIMITED
RELATING TO INFORMATION IN SYSTEM ANALYSIS
OF HEAVY WATER POWER REACTORS AND
RELATED REACTOR FUELS CYCLES,
AND SUPPORT FACILITIES

The technical scope of this activity will include exchanging information in the following areas:

- (1) Economic data, including detailed information on capital costs, fuel cycle costs and operating and maintenance costs of the power plants and associated fuel cycles and support facilities,
- (2) Reactor system, power plant and associated fuel cycle characteristics necessary for comparative systems studies, including information on physics, fuel management, fuel resource requirements, and reactor system and plant operating characteristics,
- (3) Information on the plant design and regulatory criteria and standards to which plants, fuel cycle plants and radioactive waste management facilities are designed, built, operated and maintained,
- (4) Information on present and projected research, development and demonstration activities related to nuclear fuel cycles (including thorium) and support facilities (such as fuel cycle plants), pertinent to systems analysis,
- (5) Review of systems analysis plans, input, analytical methods and codes, procedures, results and assessments, to assure consistency of their technical and economic basis, and
- (6) Other aspects as may be mutually agreed upon.