

NUCLEAR FUEL SUPPLY COMPANY (AB SVENSK
KÄRNBRÄNSLEFÖRSÖRJNING)

S.S.

AGREEMENT BETWEEN THE UNITED STATES ENERGY RESEARCH AND DEVELOPMENT
ADMINISTRATION AND THE SWEDISH ~~STATE POWER BOARD~~ CONCERNING A COOP-
ERATIVE PROGRAM ON RADIOACTIVE WASTE STORAGE IN DEEP GEOLOGIC FORMATIONS

Whereas the Government of the United States of America and the
Government of Sweden have signed an Agreement for Cooperation Con-
cerning Peaceful Uses of Atomic Energy on July 28, 1966, as amended;

Whereas the United States Energy Research and Development Admini-
stration (hereinafter referred to as "ERDA") and the Swedish ~~State~~ Nuclear Fuel
Supply Company ~~Power Board~~ (hereinafter referred to as the ~~"Board"~~ SKBF) wish to
establish a cooperative work program on the problem of terminal
storage of radioactive waste in deep geologic formations;

S.S.
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Agree as follows:

ARTICLE I

The purpose of this Agreement is to engage in a cooperative program
for field-testing experiments and techniques relative to measuring
fluid movement through fractures in a granitic rock system, utilizing
the Stripa mine in Sweden, in order to assess the suitability of
such rock for terminal storage of radioactive material.

ARTICE II

The specific cooperative activities contemplated under this Agreement are identified below:

1. Investigate temperature effects in granitic rock mass, using full-scale electric heaters which simulate the energy output of cannisters holding radioactive waste;
2. Determine the long-term effect of waste heat in a fractured granitic rock mass;
3. Assess fracture hydrology, including drilling boreholes;
4. Test methods of determining locations of a fracture system in granitic rock mass;
5. Investigate properties of granitic rocks;
6. Develop and test a technique to measure the gross seepage rate in low-permeability granitic rocks; and
7. Determine the virgin state of stress in fractured granitic rock mass.

Other activities may be included by mutual agreement.

ARTICLE III

Forms of cooperation under this Agreement shall be decided jointly by the Parties. It is agreed that such forms may include, but are not limited to, the following:

1. Visits and assignments of personnel;
2. Exchange of scientific and technical information, including reports, analyses, evaluations; of information on experimental methodology and techniques; and of data from field testing;
3. Organization of meetings;
4. Provision by ERDA of electric heaters with associated instrumentation, including equipment for data acquisition, recording and processing; and
5. Provision by ^{SKBF}~~the Board~~ of all site preparation required for execution of experiments, grouting materials for tests, and analytical chemistry services for ground water experiments.

ARTICLE IV

For implementation of this Agreement, each Party shall designate a principal coordinator to oversee cooperation under this Agreement. At the discretion of each principal coordinator, each coordinator may appoint a technical director who shall be responsible for the technical

direction of the respective Party's participation in this Agreement and shall have other responsibilities as may be delegated by the principal coordinator.

ARTICLE V

1. The Parties shall exchange, as agreed on a mutually beneficial basis, scientific and technical information, documents and results of research and development related to work carried out under this Agreement. Such information shall be limited to that which they have the right to disclose, either in their possession or available to them, from the technical areas described in Article II.
2. Proceedings of any seminars or similar meetings as well as reports of joint activities carried out under this Agreement shall be published as mutually agreed to by both Parties.
3. Both Parties agree that information developed or exchanged under this Agreement may be given wide distribution. Such information, except as noted in paragraphs 4 and 5 of this Article, may be made available to the public by either Party through customary channels and in accordance with normal procedures of the Parties.

4. It is recognized by both Parties that, in the process of exchanging information or in the course of other activities under this Agreement, the Parties may provide to each other "industrial property of a proprietary nature." Such property, including trade secrets, inventions, patent information, and know-how, made available hereunder, but acquired by either Party prior to, or outside, the course of activities under this Agreement and which bears a restrictive designation, shall be respected by the receiving Party and shall not be used for commercial purposes or made public without the consent of the transmitting Party.

"Industrial property of a proprietary nature" is defined as:

- a. of a type customarily held in confidence by commercial firms;
- b. not generally known or publicly available from other sources;
- c. not having been made available previously by the transmitting Party or others without an agreement concerning its confidentiality; and
- d. not already in the possession of the receiving Party or its contractors.

5. Recognizing that "industrial property of a proprietary nature," as defined above, may be necessary for the conduct of a specific cooperative activity or may be included in an exchange of information, such property shall be used only in the furtherance of radioactive waste storage programs in the receiving country. Its dissemination shall, unless otherwise mutually agreed, be limited as follows:

- a. to persons within or employed by the receiving Party, and to other concerned Government agencies of the receiving Party;
and
- b. to prime or subcontractors of the receiving Party for use only within the territory of the receiving Party and within the framework of its contract(s) with the respective Party engaged in work relating to the subject matter of the information so disseminated;

provided that the information disseminated to any person under subparagraphs a. or b. above shall bear a marking restricting dissemination outside the recipient's organization. Each Party will use its best efforts to ensure that the dissemination of proprietary data received under this Agreement is controlled as prescribed herein.

ARTICLE VI

Copyrights of either Party or of cooperating organizations and persons shall be accorded treatment consistent with internationally recognized standards of protection. As to copyrights of material within the scope of paragraphs 1, 2 and 3 of Article V owned or controlled by a Party, each Party shall make efforts to grant to the other a license to reproduce copyrighted material.

ARTICLE VII

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

ARTICLE VIII

1. With respect to any invention or discovery made or conceived in the course of or under this Agreement:
 - a. If made or conceived by personnel of one Party (the assigning Party) or its contractors while assigned to the other Party (receiving Party) or its contractors, in connection with exchanges of scientists, engineers and other specialists;

- (1) The receiving Party shall acquire all right, title and interest in and to any such invention or discovery in its own country and in third countries, subject to a non-exclusive, irrevocable, royalty-free license in all such countries to the assigning Party, with the right to grant sublicenses, under any such invention or discovery and any patent application, patent or other protection relating thereto.
 - (2) The assigning Party shall acquire all right, title and interest in and to any such invention or discovery in its own country, subject to a non-exclusive, irrevocable, royalty-free license to the receiving Party, with the right to grant sublicenses, under any such invention or discovery and any patent application, patent or other protection relating thereto.
- b. If made or conceived by a Party or its contractors as a direct result of employing information which has been communicated to it under this Agreement by the other Party or its contractors or communicated during seminars or other joint meetings, the Party making the invention shall acquire all right, title and interest in and to such invention or discovery in all countries, subject to a grant to the other Party of a royalty-free, non-

exclusive, irrevocable license, with the right to grant sublicenses, in and to any such invention or discovery and any patent application, patent or other protection relating thereto in all countries.

- c. With regard to other specific forms of cooperation, including loans or exchanges of materials, instruments and equipment for special joint research projects, the Parties shall provide for appropriate distribution of rights to inventions or discoveries resulting from such cooperation. In general, however, each Party should normally own the rights to such inventions or discoveries in its own country, with a non-exclusive, irrevocable, royalty-free license to the other Party; and the rights to such inventions or discoveries in other countries should be agreed by the Parties on an equitable basis.
2. Neither Party shall discriminate against citizens of the country of the other Party with respect to granting any licenses or sublicenses under any invention or discovery pursuant to paragraph 1 above. It is understood that the licensing policies and practices of each Party may be affected because of the rights of both Parties to grant licenses within a single jurisdiction. Accordingly, either Party may request,

in regard to a single invention or discovery or class of inventions or discoveries, that the Parties consult in an effort to lessen or eliminate any detrimental effect that the parallel licensing authorities may have on the policies and practices of the Parties.

3. Each Party shall assume the responsibility to pay awards or compensation required to be paid to its own nationals according its own laws.

ARTICLE IX

A. Staff

1. Whenever an exchange of staff is contemplated under this Agreement, each Party shall ensure that qualified staff are selected for attachment.
2. Each such attachment of staff shall be the subject of a separate attachment agreement between the Parties.
3. Each Party shall be responsible for the salaries, insurance and allowances to be paid to its personnel.
4. Each Party shall pay for travel and living expenses of its personnel while on attachment to the host Party unless otherwise agreed.

5. The host establishment shall arrange for satisfactory accommodations for the other Party's personnel (and their families as the case may be) on a mutually agreeable reciprocal basis.
6. Each Party shall provide all necessary assistance to the attached staff (and their families) of the other Party as regards administrative formalities, including travel arrangements.
7. The personnel of each Party shall conform to the general rules of work and safety regulations in force at the host establishment, or as agreed in separate attachment of staff agreements.

B. Equipment

1. By mutual agreement ERDA may provide equipment to be utilized in joint experiments. In such cases ERDA shall supply to the Board as soon as possible a detailed list of the equipment to be provided together with the relevant specifications and technical and information documentation.
2. The equipment and necessary spare parts supplied by ERDA for use in joint experiments shall remain its property and shall be returned to ERDA upon completion of the joint experiments, unless otherwise agreed.

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3. ^{SKBF} ~~The Board~~ shall provide the necessary premises for the equipment and will provide for electric power, water, gas, etc., in accordance with technical requirements which shall be as mutually agreed.
 4. Responsibility and expenses for the transport of equipment and materials from the United States to an authorized port of entry in Sweden convenient to the ultimate destination, and return, and also responsibility for their safekeeping and insurance en route, shall rest with ERDA. ERDA will also provide payment for transport of the equipment and materials from the port of entry to the ultimate destination.
 5. The equipment provided by ERDA for carrying out joint experiments shall be considered to be scientific, not having a commercial character.

ARTICLE X

Both Parties agree that the following provisions shall apply concerning compensation for damages incurred during the cooperation. It is understood that such compensation shall be in accordance with the laws of the country on whose territory damages will have been incurred, except as otherwise provided.

1. Definitions

- a. "Staff" of a Party means the employees of the Party, its contractors and subcontractors performing services under this Agreement, and employees of these contractors and subcontractors performing services under this Agreement.
- b. "Equipment" or "property" of a Party means the equipment or property owned by that Party, or by the contractor and subcontractors of that Party who perform services in connection with joint projects under this Agreement.

2. First and Second Party Damages

- a. Each Party shall alone be responsible for payment of compensation for damages suffered by its staff regardless of where the damages have been incurred, and will not bring suit or lodge any other claims against the other Party for damages to this property, except as noted in subparagraphs 2.b. and 2.c. below.
- b. If the damage suffered by the staff of one of the Parties is due to the gross negligence or intentional misconduct of the staff of the other Party, the latter shall reimburse the former an agreed sum of monies which the former would be obliged to pay to the person or persons suffering the damages.

- c. If damages to the property of one Party are due to the gross negligence or intentional misconduct of the staff of the other Party, the latter shall compensate the former for the damages suffered.

3. Third Party Damages

a. Defective Equipment

Damages caused to the staff or property of a third party by defective equipment of a Party shall be compensated for by the Party to which the equipment belongs, except as noted in subparagraph 3.c. below.

b. By Staff

Damages caused to the staff or property of a third party by the staff of a Party shall be compensated for by ~~the~~ such  ~~Party~~ ^{regardless} in whose territory the damages occurred, except as noted in subparagraph 3.c.

c. Gross Negligence or Intentional Misconduct

If damages referred to in subparagraphs 3.a. and 3.b. were due to gross negligence or intentional misconduct of the staff of a Party, that Party shall bear the financial responsibility in regard to the third party.

d. Damage by Third Party

In the event of damage of any kind caused by a third Party to the staff or property of one or both of the Parties, each of these, upon the request of the other Party shall render it aid in the corroboration of claims on the Third Party.

e. Resolution Questions

The Party on whose territory the damage was incurred shall, in consultation with the other Party, take upon itself the resolution, with the third party, of all questions connected with the determination of the causes, extent and necessity for compensation for damages incurred. Any such resolution shall have the concurrence of the other Party. After agreement is reached concerning the foregoing questions, both Parties shall decide, between themselves, the questions relating to compensation for damages incurred.

4. In the event of any dispute between the two Parties, a committee shall be appointed by the Parties, with equal representation. The conclusions of the committee will be presented to ERDA and ^{SKBF} ~~the Board~~ who shall review the conclusions and arrive at a mutual agreement concerning final disposition.

5. The foregoing provisions of this Article shall have no applicability to damages caused by a nuclear incident as defined by the laws of the United States and Sweden. Compensation for damage caused by any such incident shall be in accordance with the laws of the United States and Sweden.

ARTICLE XI

The provisions of this Agreement shall not affect the rights or duties of the Parties hereto under other agreements or arrangements. This Agreement also in no way precludes commercial firms or other legally constituted enterprises in each of the two countries from engaging in commercial dealings in accordance with the applicable laws of each country; nor does it preclude the Parties from engaging in activities with other Governments or persons, except that "industrial property of a proprietary nature" shall have limited dissemination as set forth in Article V, paragraphs 4 and 5, of this Agreement.

ARTICLE XII

Cooperation under this Agreement shall be in accordance with laws of the respective countries and the regulations of the Parties. All questions related to the Agreement arising during its term shall be settled by the Parties by mutual agreement.

ARTICLE XIII

Each Party shall bear the costs of its participation in the activities under this Agreement. It is understood that the ability of the Parties to carry out their obligations is subject to the availability of appropriated funds.

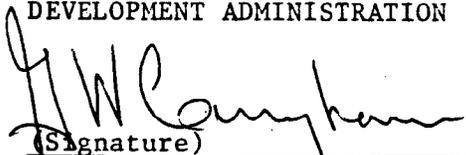
ARTICLE XIV

1. This Agreement shall enter into force upon the latter date of signature, shall continue for a three-year period, and may be amended or extended by mutual agreement of the Parties. The implementation and progress under this Agreement shall be subject to review by the Parties as may be determined by mutual agreement.
2. This Agreement may be terminated at any time at the discretion of either Party, upon six-month's advance notification in writing by the Party seeking to terminate the Agreement. Such termination shall be without prejudice to the rights which may have accrued under this Agreement to either Party up to the date of such termination.
3. All joint efforts and experiments not completed at the termination or expiration of this Agreement shall be continued until their completion under the terms of this Agreement.

ARTICLE XV

In their pursuit of bilateral cooperation under this Agreement, the Parties may agree to take into consideration those multilateral cooperative activities in the field of radioactive waste management in which their respective governments may participate, such as those under the aegis of the International Energy Agency.

FOR THE UNITED STATES
ENERGY RESEARCH AND
DEVELOPMENT ADMINISTRATION


(Signature)
(Name & Title)
Mr. G. W. Cunningham
Acting Deputy Assistant
Administrator
for Nuclear Energy

June 17, 1977
(Date)

FOR THE SWEDISH ^{NUCLEAR FUEL}~~STATE~~
~~POWER BOARD~~ SUPPLY COMPANY


(Signature)
(Name & Title)
ERIK SVENKE
PRESIDENT

July 1, 1977
(Date)



ATTACHMENT AGREEMENT

U.S. Personnel in Sweden Pursuant to the Agreement
Between the U.S. Energy Research & Development
Administration (ERDA) and the Swedish ~~State~~ Nuclear Fuel Supp-
~~Power Board (the Board)~~ ly Company
Program on Radioactive Waste Storage in (SKBF)
Deep Geologic Formations

Whereas the subject agreement contemplates participation
by ERDA employees and/or ERDA contractor employees in field
work in Sweden, principally at the location of the Stripa
mine; and

Whereas such work is under direction of ^{SKBF} ~~the Board~~, through
the KBS Project (Karnbranslesakerhet);

It is hereby recognized that those U.S. personnel identified
for the purposes specified in the list attached hereto and
made part hereof are participants in the aforementioned
cooperative program, for the period commencing on or about
June 27, 1977, through the periods identified, or longer as
may be deemed necessary by the ERDA principal coordinator
and upon due notice to ~~the Board~~. SKBF.

It is agreed that the listed U.S. personnel are subject to
the terms and conditions of the subject cooperative agree-
ment and that any modifications or amendments to this attach-
ment agreement are subject to the written approval of ERDA
and shall not be binding until so approved.

Done in duplicate.

FOR THE U.S. ENERGY RESEARCH &
DEVELOPMENT ADMINISTRATION

FOR THE SWEDISH ^{NUCLEAR FUEL} ~~STATE POWER~~
~~BOARD~~ SUPPLY COMPANY

Gerard F. Helfrich
Gerard F. Helfrich, Director
Office of International Program
Implementation

[Signature]

Date: July 1, 1977

Attachment:
U.S. Personnel List

U.S. PERSONNEL ATTACHMENT AGREEMENT

<u>Name</u> <u>Title</u> <u>Organization</u>	<u>Purpose</u>	<u>Approximate Period of</u> <u>Assignment in Sweden</u>
Paul A. Witherspoon Professor of Geological Engineering Lawrence Berkeley Labora- tory (LBL) University of California	ERDA's Principal In- vestigator/Project Leader	June 27 - July 10 and August, 1977
Neville G. W. Cook Professor of Mining Engi- neering LBL/University of Califor- nia	ERDA's Co-Principal Investigator	June 27 - July 10 and September, 1977
Paul L. Phelps Project Manager LBL/University of Cali- fornia (coming from Lawrence Livermore Lab- oratory, University of California)	LBL Project Manager	June 27 - July 10 August & September, 1977
John E. Gale Engineering Geologist LBL Consultant	In charge of ERDA part; fracture hydro- logy field program	June 27 - September, 1977 (Intermittent)
Phillip Nelson Geophysicist LBL/University of California	In charge of ERDA part; geophysics field program	June 27 - September, 1977
Bjorn Paulsson Geophysicist University of Califor- nia at Berkeley	Field Geology	June 27 - September, 1977
Richard Thorpe Engineering Geologist LBL/University of Cali- fornia	Field geology/frac- ture hydrology	July 4 - September, 1977
Hugh C. Heard Rock Mechanics Special- ist Lawrence Livermore Labor- atory (LLL) University of California	Obtain special rock cores for measurement	September 1977

(U.S. Personnel List, page 2)

Terrance L. Simpkin Project Manager LBL/University of California	Assistant LBL Project Manager; assist P. L. Phelps	June 27 - July 10 and August, 1977
Eugene P. Binnald Instrumentation Specialist LBL/University of California	Instrumentation	August 1977
Almon E. Larsh Instrumentation Specialist LBL/University of California	Instrumentation	August and/or September, 1977
Donald J. Rondeau Computer Specialist LBL/University of California	Computer data support	August and/or September, 1977
David T. Snow Engineering Geologist LBL/University of California	Field geology/fracture hydrology	July - September, 1977
David Scott Geophysics Logging Engineer LBL Consultant (Tennessee Valley Authority)	Fracture hydrology	August and/or September, 1977
James Barker Isotope Hydrologist LBL Consultant	Fracture hydrology	August and/or September, 1977
R. Jeff Lytle Electronics Engineer LLL/University of California LBL Consultant	Fracture hydrology	August and/or September, 1977
Benjamin Doty Field Geologist LBL/University of California	Fracture hydrology	July - September, 1977

(U.S. Personnel List, page 3)

Terra Tek Co.
(Salt Lake City)
LBL subcontractor on
instrumentation:

Instrumentation

August and/or
September, 1977

William A. Hustrulid
Howard R. Pratt
Joseph Mahaut