

MEMORANDUM OF UNDERSTANDING
ON COOPERATION
BETWEEN
THE UNITED STATES DEPARTMENT OF ENERGY
AND

THE POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, JAPAN,

IN

A JOINT PHYSICS LARGE CORE CRITICAL EXPERIMENTS PROGRAM

WHEREAS, the United States Department of Energy (DOE) and the Power Reactor and Nuclear Development Corporation, Japan, (PNC) on March 4, 1969, entered into a technical exchange arrangement on fast breeder reactors;

DOE and PNC, hereinafter called the Parties, wish to implement cooperation under the aforementioned agreement or a superseding agreement through participation in a Joint Physics Large Core Critical Experiment Program.

IT IS AGREED AS FOLLOWS:

ARTICLE I

Although cooperation will be considered in the following three phases, this Memorandum concerns only Phase I and Phase II. Possible future cooperative activities which would be the subject of a separate Memorandum are listed in Phase III.

1. Phase I--Assignment of PNC Staff to Argonne National Laboratory (ANL)

- A. Two PNC reactor analysts will be assigned to work at Argonne National Laboratory at PNC expense pursuant to assignment of staff agreement under Article 8, for a 2-year period beginning about July 1978 and ending about July 1980. Their assignments will include:
1. Participation in the planning and pre-analysis of a large core critical benchmark experiment.
 2. Conduct of large core critical benchmark experiments to begin in early to mid-1978 and lasting approximately 12 months.
 3. Concurrent and post-analysis of large core critical benchmark experiments.
- B. In return for financing arrangements pursuant to Article 7 of this Memorandum of Understanding, PNC shall participate in the planning, conduct and analysis of these experiments and shall have access to and receive all data and information associated with the planning conduct and analysis in a timely manner but in no event later than contemporaneous with its publication or release to any other country.

2. Phase II--Specialists Meeting

A joint meeting of DOE and PNC specialists shall be held at Argonne National Laboratory in the fall of 1979 to define the common requirements for large core engineering mock-up critical experiments and to develop plans for a possible cooperative engineering mock-up critical experiment and analysis program during 1981-1982.

3. Phase III--Engineering Mock-up Critical Measurements

Depending on the results of the Specialists Meeting and on reactor design efforts in Japan and the United States, options for further cooperation will be considered.

A. DOE and PNC may conduct a jointly agreed upon mock-up critical experimental and analysis program in 1981-1982.

Such a program may include staff assignments at ANL similar to Phase I assignments. The joint program of engineering mock-up experiments would be conducted with PNC reimbursement to DOE of an agreed upon share of the actual costs of these large core engineering mock-up critical experiments and would require a separate Memorandum of Understanding.

B. If, in the Phase II Specialists Meeting, the DOE and PNC engineering mock-up critical experiments requirements are found to be significantly different such that a joint

program is considered impractical, then DOE would consider conducting experiments over a duration of approximately six months on a mock-up defined by PNC at full cost to PNC with in period 1980-1983. Such experiments would require a separate Memorandum of Understanding.

ARTICLE 2

The respective heads of the Reactor Core Design Working Group shall appoint coordinators to supervise the execution of this Memorandum of Understanding. As deemed necessary the Joint Coordinating Committee shall meet to evaluate the status of cooperation under this Memorandum of Understanding.

ARTICLE 3

1. The Parties shall exchange, as agreed and on a mutually beneficial basis, scientific and technical information documents and results of research and development related work carried out under Phases I and II of this Memorandum of Understanding. Such information shall be limited to that which they have the right to disclose, either in their possession or available to them from the cooperative activities described in Article 1.

2. Reports of joint activities carried out under Phases I and II of this Memorandum of Understanding shall be published as joint publications, as mutually agreed by both Parties.
3. Both Parties agree that information developed and exchanged under Phases I and II of this Memorandum of Understanding should 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 process of other cooperation, 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, which is acquired by either Party prior to, or outside, the course of these activities, and which bear 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. Such property 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 to 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 LMFBR 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 agencies of the Government of the receiving Party;
 - 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; and

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 shall use its best efforts to ensure that the dissemination of proprietary data received under this Memorandum of Understanding is controlled as prescribed herein.

ARTICLE 4

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 3 owned or controlled by a Party, each Party shall make efforts to grant to the other a license to reproduce copyrighted material.

ARTICLE 5

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

ARTICLE 6

i. With respect to any invention or discovery made or conceived in the course of or under this Memorandum of Understanding:

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 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, for utilization in the Liquid Metal Fast Breeder Reactor (LMFBR) development programs.
- (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, for utilization in LMFBR development programs.

- 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 Memorandum of Understanding 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 for use in LMFBR development programs.
2. The preceding paragraph 1 of this article shall apply mutatis mutandis to design protection.
3. Neither Party shall discriminate against citizens of the country of the other Party with respect to granting any licenses or sublicenses under any invention of 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.

4. Each Party shall assume the responsibility to pay awards or compensation required to be paid to its own nationals according to its own laws. In view of the provisions of Article 35 of the Japanese Patents Act of April 13, 1959, PNC shall, prior to the assignment of any Japanese personnel to a United States facility, secure from the Japanese employer of such personnel a commitment that the employer agrees to hold the Government of the United States of America and its contractors harmless with respect to any claim of the employee for compensation under Article 35 of the Japanese Patent Act with respect to any inventions within the scope of paragraph 1 hereof, and PNC will pay any remuneration to the inventor under said Article 35.

ARTICLE 7

1. In consideration of the participation afforded and data received in Phases I and II of the Joint Physics Large Core Critical Experiment Program. PNC shall make a cash contribution of \$500,000 to DOE to be spent in Phases I and II of the joint program.
2. The cash contribution under paragraph 1 above, shall be made in U.S. dollars in the following manner:
 - (a) \$250,000 shall be due and payable upon receipt of an invoice to be issued upon or shortly after the date of signature of this Memorandum of Understanding.
 - (b) \$250,000 shall be due and payable upon receipt of an invoice to be issued upon or shortly after the completion of the large core critical benchmark experiment.
3. Budget planning and financial management of the Joint Physics Large Core Critical Experiment Program shall be the responsibility of DOE.
4. PNC shall continue to share in the information derived from experiments over the life of Phases I and II of the Joint Physics Large Core Critical Experiment Program without any obligation to contribute additional funds beyond the sum designated in paragraph 1 above.

5. Aside from the cash contribution by PNC under paragraph 1 above, each party shall bear all costs of its own participation in Phase I and II of the Joint Physics Large Core Critical Experiment Program.

It is understood aside from the cash contribution under Paragraph 1 above, that the ability of the Parties to carry out their obligation is subject to the availability of appropriated funds.

ARTICLE 8

1. With regard to the attachment of PNC staff to DOE facilities, PNC shall ensure the selection of adequate staff with the skills and competence necessary to conduct the agreed upon cooperation. Each such attachment shall be the subject of a separate attachment agreement between the Parties.
2. PNC shall be responsible for the salaries, insurance and allowances to be paid to its staff.
3. PNC shall pay for the travel and living expenses of its staff when staying at the DOE facility unless otherwise agreed.

4. The DOE shall provide all necessary assistance to PNC staff (and their families) as regards administrative formalities (travel arrangements, etc.).
6. PNC staff 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.

ARTICLE 9

Both Parties agree that the following provisions shall apply concerning compensation for damages incurred during the conduct of joint activities under this Memorandum of Understanding. 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 Memorandum of Understanding, and employees of these contractors and subcontractors performing services under this Memorandum of Understanding.
- b. "Equipment" or "Property" of a Party means the equipment or property owned by the Party, or by the contractor and subcontractors of that Party who perform services in connection with joint projects under this Memorandum of Understanding.

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 shall not bring suit or lodge any other claims against the other Party for damages to its property, except as noted in paragraph 2.b. and 2.c.
- 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 or 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 or 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 paragraph 3.c.

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 Party in whose territory the damages occurred, except as noted in paragraph 3.c.

c. Gross Negligence or Intentional Misconduct

If damages referred to in paragraph 3.a. and 3.b. were due to the 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 of 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 Party. After resolution of the matter, 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 conclusion of the Committee shall be presented to DOE and PNC who will 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 Parties. Compensation for damage caused by such nuclear incident shall be in accordance with the laws of the countries of the Parties.

ARTICLE 10

1. The provisions of this Memorandum of Understanding shall not affect the rights or duties of the Parties hereto under other agreements or arrangements. This Memorandum of Understanding 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 3, paragraphs 4 and 5, of this Memorandum of Understanding. Moreover, it is expected that the present Memorandum of Understanding should facilitate industrial and commercial exchanges in the field of the LMFBR between the firms of the countries of the Parties with a view to mutual benefits from such exchanges for both countries.

2. DOE and PNC shall act as the point of coordination for contracts and arrangements between U.S. and Japanese commercial firms when such firms or enterprises act on behalf of their respective governments under the terms of this Memorandum of Understanding. It is understood that all such contracts and arrangements shall conform with applicable laws and regulations of the Parties.

ARTICLE 11

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

ARTICLE 12

1. This Memorandum of Understanding shall enter into force upon signature and shall continue for a 3-year period, and may be extended by mutual consent. The implementation and progress of the program may be subject to review by the Parties.

2. This Memorandum of Understanding may be terminated at any time at the discretion of either Party, upon 6 months advance notification in writing by the Party seeking to terminate the Memorandum of Understanding. Such termination shall be without prejudice to the rights which may have accrued under this Memorandum of Understanding to either Party up to the date of such termination. In the event of such termination, the settlement of payments from PNC to DOE and the furnishing of information from DOE to PNC shall be negotiated on a pro-rata basis.
3. All joint efforts and experiments not completed at the termination of this Memorandum of Understanding shall be continued until their completion under the terms of this Memorandum of Understanding.
4. The Parties understand that Phase III of The Joint Physics Large Core Critical Experiment Program, if approved, will require a separate Memorandum of Understanding as noted in Article 1.

Done at Tokyo in duplicate, this 3rd day
of August, 1978.

FOR THE UNITED STATES
DEPARTMENT OF ENERGY

FOR THE JAPAN POWER REACTOR
AND NUCLEAR FUEL DEVELOPMENT
CORPORATION, JAPAN

NAME: Willis W. H. H. H. H.

NAME: Masao Segawa

TITLE: Scientific Representative

TITLE: President

Tokyo JUL 18 1978