

ARRANGEMENT  
BETWEEN  
THE UNITED STATES ATOMIC ENERGY COMMISSION  
AND  
THE POWER REACTOR AND  
NUCLEAR FUEL DEVELOPMENT CORPORATION  
ON  
FAST BREEDER REACTORS

1. THE UNITED STATES ATOMIC ENERGY COMMISSION (USAEC), and THE POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION (PNC), having a mutual interest in the development of civilian nuclear power plants using liquid metal cooled fast breeder nuclear reactors, agree to cooperate by exchanging technical information in selected areas of applicable technology and by such other means as may be agreed. PNC has been established by Law 73 of July 20, 1967 enacted by the Government of Japan in order to conduct the development of certain nuclear technology including that related to fast breeder reactors. Pursuant to such legislation, PNC is authorized to enter into technical information exchange arrangements related to fast breeder reactors.
2. This arrangement will be subject to the Agreement for Cooperation in the Civil Uses of Atomic Energy between the Governments of Japan and the United States signed February 26, 1968, and to other terms and conditions set forth herein.
3. It is the intent of this arrangement that a reasonably balanced exchange of technical information be achieved between the parties over the effective period of the arrangement. With this intent in mind, the scope of the arrangement identified in Attachment I has been defined to include topics or sub-topics in which, over the period of the

arrangement, both parties are expected to have reasonably comparable program efforts, or in which information in areas of strength in one party's program are exchanged for comparable information in different areas of strength in the other party's program.

4. The scope of technical information to be exchanged under this arrangement is set forth in Attachment I. This scope is to be amended from time to time by mutual agreement in recognition of changing scopes and progress in the programs of the parties. The initial scope has been defined in more limited terms than is expected to be appropriate for the future in order that implementation of the technical exchange arrangement may begin promptly.
5. It is the intent of the parties to include in this exchange all information within the scope of the selected areas of technology referenced in Attachment I hereto which is developed by or for the parties to this exchange.
6. Information shall be exchanged by reports, letters, drawings, specifications, visits, meetings, assignment of personnel, and such other means as the parties may agree from time to time. Reports and other written communications containing technical information within the scope of this arrangement shall be exchanged promptly in their original language. For technical documents originally provided in the Japanese language, PNC also agrees to provide:
  - (a) English abstracts with the document,

- (b) full English translations of documents containing significant technical results, within two months of transmittal of the original documents, and
- (c) full English translations of other documents as requested.

7. The communication of information under this arrangement will be enhanced to the extent practical by exchange of informal technical reports not suitable for general publication. Such reports will be marked for identification. Reports bearing such a restrictive grading may not be published by the recipient party without the prior written consent of the transmitting party, but the substance of these reports, as well as all other information received under this arrangement, may be used by the recipient party, or any other person or entity (including private commercial companies) designated by the recipient party.
8. The application or use of any information exchanged or transferred between the parties under this arrangement shall be the responsibility of the party receiving it, and the other party does not warrant the accuracy of such information or its suitability for any particular use or application.
9. In addition to exchange of information by means such as described in paragraph 6, the parties will consider other forms of technical cooperation within the scope of this arrangement. Such technical cooperation would be subject to mutual agreement on a case-by-case basis.



10. Arrangements for visits and assignments are subject to approval by the receiving party on a case-by-case basis. While all requests will be given careful consideration, it is recognized that considerations of efficiency, economy, and balance of exchange may require that limitations be placed on the frequency of visits or numbers of personnel on assignment.
11. The parties to this arrangement also recognize that some forms of cooperative activities may be more effectively undertaken on a commercial basis. Nothing in this arrangement is intended to preclude or to discourage such direct commercial arrangements. They are, in fact, encouraged as the best way to take full advantage of private industry capability. Commercial arrangements, of course, are subject to applicable governmental regulations.
12. Inventions resulting from implementation of this technical exchange arrangement will be subject to the patent provisions set forth in Attachment II.
13. This arrangement shall remain in effect for a period of 10 (ten) years from the date of its execution by the parties subject to renewal by mutual consent, and subject to earlier termination in accordance with the provisions of paragraph 14.

14. A review may be requested by either party if it believes that a balance of information exchange is not being achieved. In this event negotiations for adjustments will be carried out in good faith, but if, after reasonable efforts, the parties are not able to resolve the issues involved, either party may terminate the arrangement by giving 1 (one) month advance written notice; also either party can terminate for its own convenience by giving at least 6 (six) months' advance written notice to the other party.
15. This arrangement is herewith executed this 4th day of March, 1969.

POWER REACTOR AND NUCLEAR FUEL  
DEVELOPMENT CORPORATION

By

Goro Inouye  
Goro Inouye, President

UNITED STATES  
ATOMIC ENERGY COMMISSION

By

Francesco Costagliola  
Francesco Costagliola,  
Commissioner

ATTACHMENT I  
TECHNICAL SCOPE

Descriptions of current and planned programs presented in the following documents were used as basic references in initial discussions of the technical scope of information exchanges under this arrangement:

1. PND 68-0040, Technical Information Compiled for Use in Preparation for Japan-U.S. Cooperation Programme on Fast Breeder Reactors, Revised 17 October 1968, prepared by Power Reactor and Nuclear Fuel Development Corporation.

2. WASH 1101 through 1110, Liquid Metal Fast Breeder Reactor Program Plan, August 1968, prepared for the Division of Reactor Development and Technology, USAEC, by LMFBR Program Office, Argonne National Laboratory.

Based on current understandings of program plans the parties agree to exchange information in the following technical areas of fast breeder reactor development in accordance with the terms of this technical exchange arrangement.

I. Reactor Physics

Information in this category is to include results of research and development involving differential and integral data and theoretical methods dealing with the interaction of neutrons and gamma rays with all materials in the reactor system.



The USAEC will provide information including that resulting from base program<sup>1/</sup> work described in WASH 1100, and including results from experiments performed in facilities ZPR III, ZPR VI, ZPR IX, and ZPPR even if related to specific reactor project designs.

The PNC will provide information including that resulting from work described in items 1, 2 and 15 of PND 68-0040 including results from experiments performed in the JAERI Fast Critical Facility (FCA).

## II. Nuclear Safety

Information in this category will supplement that exchanged between the USAEC and the Government of Japan under an existing nuclear safety technical exchange arrangement<sup>2/</sup> which includes earthquake data and antiseismic design and analysis. It is intended to provide a technological base a) to provide realistic and confidence in the understanding and analysis of accident situations, b) to develop and evaluate safety systems for the prevention of accidents and mitigation of their consequences, and c) to develop standards and codes for the safe design, siting, construction, and operation of fast reactors.

The USAEC will provide information including that resulting from base program<sup>1/</sup> work described in WASH 1110.

The PNC will provide information including that resulting from work described in items 5 and 11 of PND 68-0040.

#### III. Fuels and Materials

Information in this category will supplement that exchanged between the USAEC and the Government of Japan under an existing ceramic fuel technical exchange arrangement.<sup>3/</sup> Information exchanged is to include results of research and development on fuels, claddings, and other materials for liquid metal cooled fast breeder reactors. This includes data on intrinsic properties of materials behavior in the LMFBR environment with emphasis on the effects of radiation and excluding the effects of sodium on the materials properties. (See Sodium Technology below.)

The USAEC will provide information including that resulting from basic program<sup>1/</sup> work described in WASH 1107, excluding design, development and proof testing for specific reactor system designs.

The PNC will provide information including that resulting from work described in item 7 of PND 68-0040.

#### IV. Sodium technology

Information in this category is to include results of research and development on the interaction of cladding and structural materials with sodium and its impurities, including effects and behavior of fission products in the coolant sodium. It also includes information on measurement, control and criteria for allowable limits of impurities, including fission products, in the sodium.



The USANEC will provide information including that resulting from base program<sup>1/</sup> work described in WASH 1105.

The PNC will provide information including that resulting from work described in items 3 and 9 of PND 68-0040.

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1/ Base program is defined as including all research and development intended to provide the detailed technological base for design and construction of power reactors, but excluding engineering, development, design, construction, operation and other activities specific to a particular reactor project or major component test facility. (Note: WASH 1100 series referenced above includes both base program activities and those related to specific projects.)

2/ In effect since October 1966.

3/ In effect since July 1962.

## ATTACHMENT II

### PATENT PROVISIONS

1. With respect to any invention or discovery made or conceived during the period of this arrangement in the course of or under any of the programs and activities within the scope of this arrangement,
  - 1) if made or conceived by personnel of one party (the assigning party) or its contractor(s), while assigned to the other party (the recipient party) or its contractor(s):
    - a) The recipient Party shall acquire all right, title and interest in and to any such invention, discovery, patent application or patent in its own country, and in third countries, subject to non-exclusive, irrevocable, royalty-free license to the assigning party, with the right to grant sub-licenses, under any such invention, discovery, patent application, or patent for use in the production or utilization in fast breeder reactor programs and facilities in the respective countries;
    - b) the assigning Party shall acquire all right, title and interest in and to any such invention, discovery, patent application or patent in its own country, subject to a non-exclusive, irrevocable, royalty-free license to the recipient Party, with the right to grant sub-licenses, under any such invention, discovery, patent application, or patent, for use in

the production or utilization in fast breeder reactor programs and facilities in the respective countries.

- 2) if made or conceived by a party, after communication of information by the other party and when employing information which has been communicated under this arrangement:

said Party shall grant to the other Party a royalty-free, non-exclusive, irrevocable license, with the right to grant sub-licenses, in and to any such invention, discovery, patent application or patent, in all countries, for use in the production or utilization in fast breeder reactor programs and facilities in the respective countries;

- 3) neither Party shall discriminate against citizens of the country of the other Party in respect of granting any license or sub-license under any invention under subparagraph (1) and (2) above;
- 4) each Party waives any and all claims against the other Party for compensation, royalty or award as regards any such invention or discovery, patent application or patent, and releases the other party with respect to any and all such claims; and
- 5) in view of the provisions of Article 35 of the Japanese Patents Act of April 13, 1959, the 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 as respects any claim



of the employee for compensation under Article 35 of the Japanese Patent Act as respects any inventions within the scope of paragraph I hereof and INEC will pay any remuneration to the inventor under said Article 35.

12. 1) With respect to any invention or discovery other than those referred to under subparagraphs (1) and (2) of paragraph I hereof, made or conceived during the period of this arrangement in the course of or under the activities specified in Attachment I each Party agrees to grant to the other Party a royalty-free, non-exclusive, irrevocable license for use in fast reactor research and development activities up to and including one power demonstration or prototype fast breeder reactor facility.
- 2) Other activities or facilities under this exchange may be made subject to this paragraph II by mutual agreement.
- 3) In any contract or association arrangement to be brought within the scope of the exchange the Parties will use their best efforts to incorporate patent provisions in order to bring such arrangements under this paragraph II.

- III. The parties agree to establish jointly detailed procedures required to effectuate the patent provisions of this arrangement, and that all situations not specifically covered shall be settled by mutual agreement governed by the basic principle of equivalent benefits to both parties.