

Annex VII to the Implementing Arrangement
between the Japan Atomic Energy Research Institute
and the United States Department of Energy
on Cooperation in Fusion Research and Development
for the
JAERI-DOE Collaborative Program
on the New Tube Test with
the JT-60 ICRF System

1. INTRODUCTION AND TERMS OF REFERENCE

Whereas the United States Department of Energy (hereinafter referred to as "DOE"), and the Japan Atomic Energy Research Institute (hereinafter referred to as "JAERI") have joint planning activities for the development of high power radio frequency plasma heating technology,

Whereas the JT-60, operated by JAERI at its Naka Fusion Research Establishment, is dedicated to achieve and investigate $Q = 1$ hydrogen plasmas and make an integrated test of fusion technologies to develop scientific and technical bases for the next stage of advancement, including a substantial Ion Cyclotron Range of Frequencies (hereinafter referred to as "ICRF") system along with a Neutral Beam system and a Lower Hybrid Range of Frequencies system,

Whereas DOE has developed a new high power ICRF tube with increased grid power dissipation capability for the Compact Ignition Tokamak program,

Whereas JAERI and DOE wish to perform a Collaborative Program of joint experiments and related analyses and evaluations of the new ICRF tube developed by DOE which ultimately can be used in both Japanese and U.S. experiments,

Whereas Article III.2 of the Implementing Arrangement between the JAERI and DOE on Cooperation in Fusion Research and Development of November 8, 1983 (hereinafter referred to as the "Implementing Arrangement"), provides for additional activities through written Annexes to the Implementing Arrangement,

JAERI and DOE (hereinafter referred to as "the Parties") agree in accordance with the provisions of the Implementing Arrangement, as follows:

2. OBJECTIVE

The objective of the Collaborative Program is to conduct a joint test program to evaluate the new ICRF tube. The ICRF tube shall be evaluated for the purpose of using the improved tube for the Compact Ignition Tokamak program of DOE and also for the potential use by the JT-60 ICRF system of JAERI. The joint test will be done in the JT-60 ICRF system at JAERI.

3. PROJECT

3.1 The Collaborative Program shall consist of:

- (a) joint planning and design of the tests on the JT-60 ICRF system, including pre-test analysis,
- (b) preparation for and conduct of tests on the JT-60 ICRF system,
- (c) post-test analysis and evaluation,
- (d) development of testing and calculational techniques needed for (a), (b), and (c) above,
- (e) exchange of personnel and information necessary to carry out the Collaborative Program, and
- (f) exchange of results arising from the Collaborative Program.

3.2 The Collaborative Program is only one part of the overall JAERI research and operation program on the JT-60 ICRF system; the JT-60 ICRF system shall not be dedicated exclusively to the Collaborative Program. JAERI shall be responsible for and have control over all operations of the JT-60 ICRF system and components.

3.3 JAERI shall:

- (a) provide available, conventional equipments and instruments necessary for testing the tube.
- (b) arrange the planning and scheduling of tests under this Collaborative Program, with due consideration given to DOE proposals.
- (c) host the tests and be responsible for the care and maintenance of the JT-60 ICRF systems used in the tests.

3.4 DOE shall:

- (a) provide the tube(s) including standby tube(s) for testing.
- (b) be responsible for transportation of the tube(s) to and from the Naka site of JAERI.
- (c) be responsible for repairs of the tube if the tube requires repair as a result of damage during the conduct of the Collaborative Program.
- (d) provide all instruments which are of a unique nature for those measurements performed by DOE at the JT-60 ICRF system.

- (e) assign one or more persons as mutually agreed upon to JAERI for the duration of testing. The assignee(s) shall aid in the installation and check-out of the tube(s) at the JT-60 ICRF system and be involved in the test of the tube(s). The assignee(s) shall also aid in the clearance of the tube(s) from the JT-60 ICRF system at the end of testing.

3.5 DOE and JAERI shall:

- (a) perform tests of the tube in one of eight High Power Amplifiers at the JT-60 ICRF system.
- (b) share in the performance of tests as mutually agreed upon.
- (c) perform pre-experiment analysis of the tests for the purpose of planning tests and measurements.
- (d) perform post-experiment analysis and evaluation of the tests. The evaluations by each Party shall be shared with the other Party.

3.6 Technical Progress Meetings shall be held as required to exchange technical information and to review technical status and accomplishments of the Collaborative Program, in accordance with Article 4 below.

4. MANAGEMENT

4.1 The management of the Collaborative Program shall be carried out by a Steering Committee.

4.2 The Steering Committee shall be composed of four members, two each to be assigned by JAERI and DOE. The Steering Committee shall have the functions as described in paragraph 4.4 below.

4.2.1 JAERI and DOE shall each identify a person to serve as co-chairman of the Steering Committee. All communications shall be channeled through these co-chairman or their designees.

4.2.2 JAERI and DOE shall designate appropriate alternates who shall serve if the assigned members are unable to do so and each shall inform the other in writing of all such designations. DOE and JAERI shall each have one vote in the Steering Committee and all decisions shall be by unanimity. The Steering Committee shall be chaired by the host country of the Steering Committee meeting.

4.3 The Steering Committee shall meet annually or as required, at JAERI on a date mutually agreed upon. An exchange of letters may serve as a substitute for a meeting of the Steering Committee.

4.4 The function of the Steering Committee shall include:

- (a) planning the Collaborative Program and development of an annual work plan,
- (b) arranging for Technical Progress Meetings,

- (c) reporting to the U.S.-Japan Coordinating Committee on Fusion Energy as described in the exchange of letters between the Science and Technology Agency of Japan and DOE on January 25, 1983, for review of technical progress and for recommendations on future plans,
- (d) arranging for the implementation of personnel exchanges,
- (e) reviewing the technical progress in tests and analyses,
- (f) reviewing plans for publications, and
- (g) discussion of other matters as mutually agreed.

4.5 The Steering Committee shall be responsible for evaluating periodically the Collaborative Program's relevance to both the DOE and JAERI fusion programs and shall report these evaluations as needed to the U.S.-Japan Coordinating Committee on Fusion Energy. The Steering Committee shall take account, as appropriate, of the decisions and policies of the U.S.-Japan Coordinating Committee.

5. FINANCE

Except when otherwise mutually agreed in writing, each Party shall bear the costs of its activities in accordance with its responsibilities as set forth in Article 3 of this Annex. The activities to be conducted under this Annex shall be subject to the availability of appropriated funds.

6. INFORMATION AND PATENTS

- 6.1 The Parties shall exchange information necessary to carry out the Collaborative Program. This information shall be non-proprietary and shall not include detailed manufacturing knowhow. It is understood that there shall normally be no obligation to exchange design and development information such as detailed fabrication drawings, fabrication methods and specifications, and related information. Each Party shall provide promptly to the other Party all information arising from the Collaborative Program.
- 6.2 The application or use of any information provided under or arising from the Collaborative Program shall be the responsibility of the Party receiving it, and the other Party does not warrant the suitability of such information for any particular application or use.
- 6.3 The information provided under and arising from the Collaborative Program may be made available to the public by either Party through customary channels and in accordance with the normal procedures of the Parties, subject to the provisions of paragraphs 6.5-6.8 below.
- 6.4 Article VII of the Implementing Arrangement shall apply to the Collaborative Program.
- 6.5 Proprietary information shall not be accepted for or utilized in the Collaborative Program without the written approval of Transmitting Party. For the purpose of the Collaborative Program, proprietary information shall mean information of a confidential nature such as

trade secrets and know-how (e.g., computer programs, design procedures and techniques, chemical composition of materials or manufacturing methods, processes and treatments) which is appropriately marked, provided such information:

- (a) has been held in confidence by its owner;
- (b) is of a type which is customarily held in confidence by its owner;
- (c) has not been transmitted by the Transmitting Party to other entities, including the Receiving Party except on the basis that it be held in confidence; and
- (d) is not otherwise available to the Receiving Party from another source without restriction on its further dissemination.

It shall be the responsibility of the Party supplying proprietary information to identify the information as such and to ensure that it is appropriately marked.

- 6.6 Inventions or discoveries made or conceived in the course of or under the Collaborative Program (hereinafter referred to as "arising inventions") shall be identified by the Inventing Party and shall be reported promptly to the other Party. Information regarding arising inventions on which patent protection is to be obtained shall not be published or publicly disclosed by the Parties until a patent application has been filed in either country of the Parties provided, however, that this restriction on publication or disclosure shall not extend beyond six months from the date of reporting of the arising inventions. It shall be the responsibility of the Inventing Party to appropriately mark reports which disclose arising inventions that have not been appropriately protected by the filing of a patent application.
- 6.7 Arising inventions shall be owned (a) by JAERI in Japan and third countries subject to a royalty-free, nonexclusive, irrevocable license to DOE, its Government, and the nationals of its country designated by it and (b) by DOE in the United States subject to a royalty-free, nonexclusive, irrevocable license to JAERI, its Government, and the nationals of its countries designated by it.
- 6.8 This Article shall apply mutatis mutandis to the protection of utility models and of design.
- 6.9 Each Party shall, without prejudice to any rights of inventors or authors under its national laws, take all necessary steps to provide the cooperation from its inventors or authors required to carry out the provisions of this Article. Each Party shall assume the responsibility to pay awards or compensation required to be paid to its own nationals according to its own laws.

7. LOAN OF EQUIPMENT AND MATERIALS

Any exchanges, loans or supply of equipments, instruments, materials or spare parts under the Collaborative Program shall be conducted in accordance with Article X of the Implementing Arrangement. DOE shall be responsible for

transportation of all such properties to and from the Naka Fusion Research Establishment of JAERI. For the duration of the Collaborative Program, components, equipments, instruments, and materials provided by DOE shall be considered to be the property of the Government of the United States.

8. PERSONNEL ASSIGNMENT

DOE may assign to JAERI scientific and technical personnel in accordance with Article IX of the Implementing Arrangement. Each such assignment of personnel including the assignment described in 3.4 (e) of this Annex shall be the subject of a separate assignment agreement.

9. REFERENCE

Articles IV, VI, and VIII of the Implementing Arrangement shall apply to this Annex.

10. DURATION AND TERMINATION

The Collaborative Program shall enter into force upon signature of this Annex by JAERI and DOE and shall remain in force for a period of three (3) years or until the termination of the Implementing Arrangement, whichever occurs first. This Annex may be renewed or amended by written agreement between JAERI and DOE. The Collaborative Program may be terminated at the discretion of either JAERI or DOE upon six months advance notice in writing by the side seeking termination. Such termination shall be without prejudice to the rights which may have accrued under the Collaborative Program to either Party up to the date of such termination. Specific activities initiated hereunder but not completed at the termination of this Annex may be continued until their completion under the terms of this Annex.

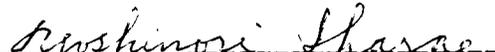
In witness whereof, JAERI and DOE agree to this Annex in duplicate in the English and Japanese languages, both being equally authentic, to be effective upon signatures by both Parties.

for THE UNITED STATES
DEPARTMENT OF ENERGY

for THE JAPAN ATOMIC ENERGY
RESEARCH INSTITUTE



John F. Clarke
Associate Director for Fusion
Energy, Office of Fusion Energy



Yoshinori Ihara
President
Japan Atomic Energy Research
Institute

Date January 9, 1989

Date December 23, 1988
