PROJECT ARRANGEMENT
UNDER THE IMPLEMENTING ARRANGEMENT
BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND
THE MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY OF JAPAN
CONCERNING COOPERATION IN RESEARCH AND DEVELOPMENT IN ENERGY AND RELATED FIELDS
FOR
TECHNOLOGICAL ASSESSMENT OF PLASMA FACING COMPONENTS FOR FUSION DEMO REACTORS

The Department of Energy of the United States of America and the National Institute for Fusion Science, authorized as the implementing agency of the Ministry of Education, Culture, Sports, Science and Technology of Japan, hereinafter collectively referred to as the "Participants" and individually as "Participant":

CONSIDERING that technological assessments of plasma facing components are very important parts of both United States' and Japan's respective fusion programs; and

ACTING under Section 4 of the Implementing Arrangement Between the Department of Energy of the United States of America and the Ministry of Education, Culture, Sports, Science and Technology of Japan Concerning Cooperation in Research and Development in Energy and Related Fields of April 30, 2013 (hereinafter referred to as the "Implementing Arrangement"),

Have decided as follows:

Section 1
Objective

1. The objective of this Project Arrangement is for the Participants to jointly pursue a Collaborative Research Program which focuses on evaluating the feasibility of a helium gas-cooled divertor with tungsten material armor for fusion DEMO reactors by performing experimental studies of heat transfer in helium-cooled systems, response of tungsten materials to steady-state and pulsed heat loads, effects of neutron irradiation on thermo-mechanical properties of tungsten materials, and tritium transport in neutron-irradiated tungsten materials.

2. This Project Arrangement is under the Implementing Arrangement, which is, in turn, subject to and governed by the Agreement Between the Government of the United States of America and the Government of Japan on Cooperation in Research and Development in Science and Technology signed June 20, 1988, as amended and extended (hereinafter referred to as "the Agreement").

Section 2
Technical Scope

1. The Collaborative Research Program supports the development of helium-cooled plasma-facing components with tungsten armor material. Specific objectives include:

a. Understanding and modeling of heat transfer in helium-cooled systems, and improvement of cooling efficiency and system design;

b. Database establishment on response of tungsten materials to steady state and pulsed heat loads;

c. Thermo-mechanical property measurements of tungsten materials after neutron irradiation at elevated temperatures relevant to divertor conditions; and

d. Examination of tritium behavior in neutron-irradiated tungsten materials under high-flux plasma exposure.

2. The Collaborative Research Program includes the exchange of information, personnel and equipment which are required for its implementation; and meetings and workshops to exchange information and discuss implementation of the Collaborative Research Program.

Section 3
Management

1. Each Participant will designate one Representative and one Program Coordinator, to be responsible for working contacts between the Participants.

2. A Steering Committee composed of a Representative and Program Coordinator designated by each Participant will be established for the detailed management of the Collaborative Research Program, including technical progress reviews and discussions of future activities of the cooperation under this Project Arrangement.

3. The Steering Committee should meet annually or as required on dates and at locations mutually decided.

4. The Steering Committee should develop its own procedures to fulfill its functions.

5. The Participants may invite, as appropriate, representatives of relevant government agencies, research centers and other institutions in their respective countries to participate in the Steering Committee meetings and other events conducted by the Participants under this Project Arrangement.

Section 4
Funding

A Participant may make cash contribution(s) to the other Participant to conduct the activities described in this Project Arrangement. The amount of cash contribution(s), if any, between the Participants should be discussed and decided at meetings of the Steering Committee. Each such contribution should be paid as soon as possible when invoiced, and is subject to the availability of funds.

Section 5

Exchange of Personnel

Each Participant may assign its staff to the other Participant. Such exchange of personnel will be on the basis of Section 6 of the Implementing Arrangement.

Section 6

Exchange of Equipment

The Participants may exchange equipment needed for the Collaborative Research Program. Unless the Participants decide otherwise, such exchange of equipment will be on the basis of Section 7 of the Implementing Arrangement.

Section 7

Information Use and Disclosure

Information use and disclosure under this Project Arrangement will be on the basis of Section 8 of the Implementing Arrangement.

Section 8

Intellectual Property Rights

With respect to the protection and distribution of intellectual property rights and other rights of a proprietary nature created or furnished in the course of the cooperative activities under this Project Arrangement and the protection of business-confidential information exchanged under this Project Arrangement, the following paragraphs will apply in addition to the provisions set forth in Annex IV to the Agreement.

1. Inventions

For the purpose of this Project Arrangement, "Invention" means any invention made in the course of the cooperative activities under this Project Arrangement which is or may be patentable or otherwise protectable under the laws of the United States of America, Japan, or any third country.

On the basis of paragraph 3.B.(iii) of Annex IV to the Agreement, rights to an Invention made as a result of joint research conducted under this Project Arrangement, and allocation of benefits derived therefrom, are provided as follows:

- If an Invention is made solely by a Participant or its contractor, the Participant will obtain all right, title and interest in and to such Invention in all countries.
- If an Invention is made jointly by a Participant/contractor of both Participants, each Participant will obtain all right, title and interest in and to such Invention in its own country. In third countries where both Participants intend to obtain the right to the Invention, the Participants will be joint owners of such rights. The Participants may jointly apply to obtain and/or maintain the relevant rights. The Participants should decide on appropriate cost sharing associated with obtaining and/or maintaining such rights.
- In any country where the Participant which is entitled to obtain the rights therein decides not to obtain such rights and interests, the other Participant has the right to do so.
- Each Participant will have, for its own research and development activities in the area envisaged under this Project Arrangement in its own country during the term of this Project Arrangement, a free right of use of Inventions, whether protected or not by intellectual property rights, solely owned by the other Participant and resulting from the joint research performed under this Project Arrangement.

2. Copyright

Allocation of rights to an Invention and benefits derived therefrom stipulated in paragraph 1 above will be applied *mutatis mutandis* to disposition of rights to copyrighted works created in the course of the cooperative activities conducted under this Project Arrangement.

Section 9
Commencement, Modification and Discontinuation

1. Cooperative activities under this Project Arrangement are to commence upon signature and may continue unless discontinued under the procedures described in paragraph 3 of this Section, so long as the Implementing Arrangement remains in operation.

2. This Project Arrangement may be modified by written consent of the Participants, so long as the Implementing Arrangement remains in operation.

3. This Project Arrangement may be discontinued at any time by both Participants in writing, or at the discretion of either Participant, which should provide at least 60 days advance notification in writing to the other Participant.

Signed in duplicate.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

Signature: _____

Edmund J. Synakowski
Title: Associate Director of Science for Fusion Energy Sciences

Date : July 15, 2015
Place: Washington, DC

FOR THE NATIONAL INSTITUTE FOR FUSION SCIENCE:

Signature: _____

Yasuhiko Takeiri
Title: Director General

Date : July 8, 2015
Place: Toki