

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE UNITED STATES DEPARTMENT OF ENERGY
AND
THE MINISTRY OF SCIENCE, ICT, AND FUTURE PLANNING OF
THE REPUBLIC OF KOREA
CONCERNING
COOPERATION ON LOW-ENRICHED URANIUM FUEL FABRICATION

The United States Department of Energy, through its National Nuclear Security Administration (DOE/NNSA), and the Ministry of Science, ICT, and Future Planning (MSIP) (formerly, the Ministry of Education, Science and Technology) of the Republic of Korea, through the Korea Atomic Energy Research Institute (KAERI) (hereinafter jointly referred to as "the Participants"):

NOTING the Memorandum of Understanding Between the United States Department of Energy and the Ministry of Education, Science and Technology of the Republic of Korea Concerning Cooperation on Low-Enriched Uranium Fuel Fabrication signed July 1, 2011 (hereinafter referred to as the "2011 Memorandum"); and

DESIRING to continue their cooperation in the field of low-enriched uranium fuel fabrication,

Have reached the following understanding:

Paragraph 1 - Purpose

The purpose of this Memorandum of Understanding (hereinafter referred to as this "Memorandum") is to further foster the development and production of low-enriched uranium (LEU) fuel in a mutually beneficial manner for each Participant and to promote the principles of nuclear non-proliferation through high-enriched uranium (HEU) minimization. The Participants expect to benefit individually through programmatic cost savings, enhanced development of technology, and increased global recognition for supporting the principles of HEU minimization.

Paragraph 2 - Scope

1. DOE/NNSA intends to continue providing sufficient LEU for KAERI to manufacture the atomized uranium molybdenum (UMo) powder specified in subparagraph 2 below. The Participants intend to ensure that adequate physical protection measures, as set forth in the International Atomic Energy Agency document INFCIRC/225Rev.4 (Corrected), are

maintained with respect to the LEU and any special fissionable material produced through the use of the LEU, including subsequent generations of produced special fissionable material.

2. MSIP intends to permit KAERI to continue manufacturing, free of charge, atomized LEU-Mo alloy powder for DOE/NNSA (or for a third party designated by DOE/NNSA) in support of DOE/NNSA's Global Threat Reduction Initiative (GTRI) Reactor Conversion Program, according to specifications provided by DOE/NNSA's Argonne National Laboratory (ANL). MSIP intends to permit KAERI to provide the atomized UMo powder to a third-party (i.e., French fabricator) for the fabricator's use in the manufacture of any test materials needed to support conversion of European high performance reactors to operation with LEU fuel.
3. Consistent with the 2012 Nuclear Security Summit Joint Statement on Quadrilateral Cooperation on High-density Low-enriched Uranium Fuel Production, MSIP intends to allow KAERI to openly share the powder production technology with interested third-party fabricators.
4. MSIP also intends to allow KAERI to share experimental results of its LEU UMo fuel development efforts.
5. The Participants plan to develop a joint statement highlighting their contributions to this endeavor, for release in the context of the 2014 Nuclear Security Summit to be held at The Hague, the Netherlands.
6. DOE/NNSA intends to permit ANL and Idaho National Laboratory (INL) to share, on a reasonable basis, their experience and non-proprietary data on laboratory-scale fuel fabrication technology, to support KAERI's development of high-density, plate-type research-and-test-reactor fuel fabrication, and to make accessible ANL's and INL's fuels-related expertise, including computer codes, to support KAERI's development of high-density fuel for a new research reactor that KAERI plans to commission in the Republic of Korea. Qualification of this fuel, based on UMo alloy, is expected to benefit the DOE/NNSA's LEU Fuel Development Program.

Paragraph 3 – General Considerations

1. Each Participant is to be responsible for the costs it incurs in participating in the activities contemplated by this Memorandum.
2. This Memorandum does not create any legally binding rights or obligations between the Participants.
3. Cooperation under this Memorandum is subject to the availability of appropriated funds, personnel, and other resources.

4. Each Participant should conduct the activities contemplated by this Memorandum in accordance with the applicable laws and regulations of its respective country, including, without limitation, export control laws and international agreements to which its government is party, including the Agreement for Cooperation Between the Government of the Republic of Korea and the Government of the United States of America Concerning Civil Uses of Atomic Energy, signed on November 24, 1972, as amended.
5. Any differences arising from the interpretation or application of this Memorandum are to be resolved through consultations between the Participants.
6. This Memorandum supersedes and replaces the 2011 Memorandum.

Paragraph 4 – Commencement, Modification, and Discontinuation

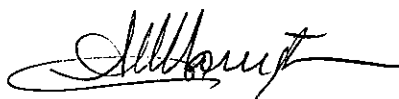
1. Cooperative activities under this Memorandum are expected to commence upon signature by the Participants, and to conclude no later than September 30, 2020.
2. This Memorandum may be modified or extended at any time by mutual consent in writing.
3. The Participants may discontinue this Memorandum at any time by mutual consent in writing. Alternatively, either Participant may discontinue its participation in activities under this Memorandum upon 120 days' written notice to the other Participant.

Signed at Vienna, in duplicate, this 17th day of September 2013.

FOR THE MINISTRY OF SCIENCE, ICT, FOR THE UNITED STATES DEPARTMENT
AND FUTURE PLANNING OF THE OF ENERGY:
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