

AGREEMENT BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES
OF AMERICA AND THE COMMISSARIAT A L'ENERGIE ATOMIQUE OF FRANCE
ON COOPERATION IN THE FIELD OF RESEARCH REACTOR FUEL PERFORMANCE

Whereas the United States Department of Energy, hereinafter "DOE", and the French Commissariat a l'Energie Atomique, hereinafter "CEA", have a mutual interest in developing reduced enrichment research reactor fuels and each party has a significant program in the development of such fuels.

Whereas under the contract DE-SC05-80 LEU 0504 entered into by DOE and the Compagnie pour l'Etude et la Realisation de Combustibles Atomiques, hereinafter "CERCA", with the concurrence of the European Atomic Energy Community Supply Agency, enriched and depleted uranium for manufacturing reduced enrichment nuclear fuel is loaned without charge.

Whereas contract 31-109-38-5406 entered into by DOE's Argonne National Laboratory and CERCA provides for the fabrication of reduced enrichment fuel elements.

Whereas DOE can make available to the CEA for irradiation reduced enrichment fuel elements manufactured at CERCA.

Whereas the CEA at the Grenoble Nuclear Research Center has the means for irradiating lower enrichment uranium fuels in SILOE, a 35-MW materials testing reactor presently fueled with HEU, and DOE has supplied lower enrichment uranium fuel, manufactured by CERCA, pursuant to the aforementioned contract for irradiation tests in such a reactor, and CEA is able to destructively examine the irradiated fuel at the Saclay Nuclear Research Center.

Whereas the CEA agrees to use these means to participate in reactor qualification of the CERCA reduced enrichment nuclear fuel.

IT IS AGREED AS FOLLOWS:

ARTICLE I - DEFINITIONS

a/ "The fuel"

The aluminum alloy or aluminum dispersion plate fuel or parts of fuel element(s) manufactured by CERCA for research and test reactors and put at the disposal of the CEA by DOE.

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b/ "Fuel specifications"

Those which are necessary for the fuel to be considered as acceptable for loading in the SILOE research reactor.

c/ "The program"

An experimental and analytical program, hereinafter referred to as "the program" has been set up by mutual agreement to meet the objective of this agreement.

ARTICLE II

1. The objective of this agreement is for the provision of "the fuel" and to arrange for the evaluation of the performance of "the fuel" in the core of the 35 megawatt SILOE reactor of the Grenoble Nuclear Research Center. The objective will be reached through implementation of "the program".
2. Under "the program", CEA shall irradiate "the fuel", under typical power density conditions in SILOE, and subsequently examine "the fuel".
3. The irradiation of these test fuel elements will:
 - A) provide data for the U.S. Reduced Enrichment Research and Test Reactor Program, hereinafter "RERTR Program" and for CEA on "the fuel" behavior in the reactor.
 - B) assist the Parties, and other potential users, in obtaining information pertinent to the evaluation of "the fuel" behavior in the reactor.

ARTICLE III

Specifically, CEA, through the Grenoble and Saclay Nuclear Research Centers shall:

- 1) obtain all safety approvals needed under the appropriate national regulations in force, for the irradiation of "the fuel".
- 2) irradiate "the fuel" for the length of time needed to achieve the burnup or fluence mutually agreed upon, unless fuel failure shall occur or evidence of impending fuel failure shall be found.

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- 3) perform the agreed upon examination of "the fuel" following termination of the irradiations.
- 4) collect data obtained from examination made by CERCA of plates representative of "the fuel". The data obtained shall provide the basis for determination of irradiation effects.
- 5) perform such flux and reactivity measurements as may be needed to determine "the fuel" behavior and its effect on core performance.

Technical plans for each irradiation, including the specifications of "the fuel" shall be mutually prepared and agreed upon by representatives of the RERTR program at the Argonne National Laboratory, representing DOE, and by representatives of the Grenoble and Saclay Nuclear Research Centers, representing CEA.

ARTICLE IV

CEA shall provide DOE all scientific and technical information obtained through "the program" carried out under this agreement. The Parties shall have the right to such information for any and all purposes and such information shall be freely available.

Each Party shall acknowledge the contribution of the other in any report or publication describing work carried out under this agreement.

ARTICLE V

Any invention or discovery conceived or first actually reduced to practice in the course of the activities undertaken in implementing this agreement shall be owned by DOE in the United States and CEA in France.

Ownership in third countries shall be by agreement between DOE and CEA on an equitable basis. In any event, with regard to third countries, each party shall be given a royalty-free, nonexclusive, irrevocable license in said third countries, with right to sublicense its national industry.

ARTICLE VI

The application or use of any information exchanged or transferred between the parties under this agreement 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.

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ARTICLE VII

CEA shall indemnify and hold harmless the Government of the United States, DOE, its contractors and employees from any and all liability (including third party liability) for any cause whatsoever other than a nuclear incident, arising out of the use of "the fuel" in its own facilities.

ARTICLE VIII

DOE shall:

- 1) deliver "the fuel" at CEA's Grenoble Nuclear Center;
- 2) take back the irradiated fuel according to the following procedure:

Fuel bearing portions of all irradiated or unirradiated fuel elements and plates, and all recoverable pieces thereof, with the exception of certain archival samples agreed to by DOE, shall be returned to the U.S. for disposition after the completion of all work described in article I, II and III.

- 3) where required, DOE shall assist CEA in taking the necessary steps for obtaining permits and licenses required for the import into and transportation inside U.S. territory; and
- 4) bear all shipping charges incurred in returning the fuel transferred under this agreement from CEA's Grenoble Nuclear Research Center to the U.S., based upon a pro rata share of the cost of a regular spent fuel shipment.

CEA shall:

- 1) take receipt of "the fuel" according to existing rules and to "specifications";
- 2) be responsible for: a) making all arrangements for the packaging and shipment of the fabricated fuel elements from CERCA to CEA's Grenoble Nuclear Center; b) making all arrangements for the return shipment; and c) for packing all material for shipment.

The irradiated material shall be returned as part of a regular spent fuel shipment to the U.S.

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ARTICLE IX

Costs shall be borne in the following way:

By DOE (See Article VIII) the costs involved in:

- . providing the new "fuel" to the Grenoble Nuclear Center; and
- . returning the spent "fuel" to the United States.

By CEA the costs involved in:

- . reception of "the fuel" (See Article VIII);
- . irradiation of "the fuel" (See Articles I, II, and III);
- . examination of "the fuel"; and
- . packaging of spent "fuel" for return to the United States.

ARTICLE X

Each Party's activities under this agreement shall be in accordance with its national laws and regulations. All questions arising during its term shall be settled by the Parties by mutual agreement.

Should the Parties be unable to reach such a settlement, the dispute shall be settled finally by the two governments.

ARTICLE XI

The provisions of articles VII, VIII and IX shall have no applicability to damages caused by a nuclear incident as defined by the laws of the Parties. Compensation for damages caused by such a nuclear incident shall be in accordance with the laws of the Parties.

ARTICLE XII

This agreement shall enter into force upon signature, shall continue for a five year period, and shall be extendable by mutual consent.

Expiration or termination of this agreement shall be without prejudice to the rights which may have accrued hereunder to the Parties up to the date of expiration or termination.

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ARTICLE XIII

The present agreement is made in the English and in the French languages,
both texts are deemed to be authentic.

Done at Washington, D. C.

This 19th day of October 1981

For the Department of Energy of
the United States of America

For the Commissariat a l'Energie
Atomique of France

Henry E. Thomas, IV
Assistant Secretary for
International Affairs



Bertrand Barré
Attaché Nucléaire auprès de
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Etats-Unis

