

ARRANGEMENT BETWEEN THE UNITED STATES ATOMIC ENERGY COMMISSION (USAEC)
AND THE KERNFORSCHUNGSANLAGE JÜLICH (KFA) TO EXCHANGE INFORMATION IN
THE FIELD OF HIGH TEMPERATURE REACTOR RESEARCH

1. The United States Atomic Energy Commission (AEC) and the Kernforschungs-anlage Jülich (KFA)⁺, having a mutual interest in the exchange of information in the field of high temperature reactor research, hereby agree as follows:
 - a) The AEC will make available to the KFA information in the field of high temperature reactor research which it has the right to disclose, either in its possession or available to it, pertaining to the research areas listed in Appendix A. (The list can be modified by mutual agreement.)
 - b) The KFA will make available to the AEC information in the field of high temperature reactor research which it has the right to disclose, either in its possession or available to it, pertaining to the research areas listed in Appendix B. (The list can be modified by mutual agreement.)
 - c) The information exchange will be in the form of technical reports, scientific papers, published literature, correspondence, conferences, visits, long-term assignments, and such other means as the parties may agree.
 - d) 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 Reports bearing such a restrictive grading may not be published by the recipient party without the prior written consent of the transmitting party, but the substance of these reports, as well as all other information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,

⁺ KFA is jointly capitalized by the Federal Republic of Germany and the State of North-Rhine Westphalia.

may be used by the recipient party, or any other person or entity (including private commercial companies) designated by the recipient party.

- e) The information exchanged under this arrangement shall be subject to the patent provisions in the Patent Addendum appearing in Appendix C.
- f) 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 suitability of such information for any particular use or application.
- g) The parties will use their best efforts to bring IFA development work conducted with German industry as well as industrial work performed under AEC contract into this collaboration within one year of the effective date of the exchange arrangement. In the event either party is unable to bring industry into the arrangement, that party will notify the other in writing to this effect at the end of the first year of collaboration, and the agreement will thereby be terminated unless mutual agreement is reached to continue the collaboration.
- h) This arrangement shall remain in effect for five years after its effective date. Its term may be extended by mutual consent. Termination at any time can also take place at the discretion of either party by written notice to the other party of the effective date of termination but not earlier than 90 days after the date of the notice.

Washington, D.C.

Jülich, Ger. 5. Februar 1971

US Atomic Energy Commission
Washington

Fernforschungsanlage Jülich
Gesellschaft mit beschränkter Haftung

Myron B. Kratzer

Bertin S.

[Signature]

(Myron B. Kratzer)

(Prof. Dr. Bertin S.)

(Dr. [Name])

APPENDIX A

AREAS IN WHICH THE AEC IS PERFORMING HIGH TEMPERATURE REACTOR RESEARCH *

A. Fuels and Internals

1. Fuel Kernels.
2. Methods for characterizing coatings.
3. Coated particle performance evaluations, including capsule and reactor test results.
4. Fuel matrix development and performance evaluations, including capsule and reactor test results.
5. Graphite research, including capsule and reactor test results, but not to include commercial machining and inspection technology.
6. Fuel element designs and performance evaluations, including irradiation results.
7. Fission product release.
8. Fission product transport.
9. Materials and steels.

B. Reprocessing

1. Head-end unit processes, including laboratory development, pilot plant work and conceptual designs:
 - a) Separation of fuels from graphite.
 - b) Separation of different fuels.
 - c) Graphite disposal.
 - d) Conversion to soluble forms.
2. Dissolution and extraction, including laboratory development, pilot plant work and conceptual design.

* Initially, the laboratory involved in this exchange on the U.S. side will be the ORNL.

AREAS IN WHICH THE IFA IS PERFORMING HIGH TEMPERATURE
REACTOR RESEARCH

A. Fuels and Internals

1. Fuel kernels (sol-gel-Process, U^{VI}-Process)
2. Coatings, deposition studies and methods for characterization.
3. Coated particle performance evaluations, including capsule and reactor test results.
4. Fuel matrix development and performance evaluations, including irradiation test results.
5. Irradiation tests on graphite (physical properties before and after irradiation).
6. Fuel element performance evaluations, including irradiation results. Fuel element design (theoretical studies on temperature distribution and on optimization of fuel element geometries and their influence on cooling system).
7. Fission product transport in fuel elements and release.
8. Plate-out of fission products.

B. Reprocessing

1. Head-end-process for graphite-base HTGR-fuel, including laboratory development, pilot plant work and conceptual design.
Burning
Off-gas cleaning
Dissolution of residues
Chlorination-process as a head-end step.
2. Solvent extraction, including laboratory development, pilot plant work and conceptual design.
High activity waste treatment (solidification) of aqueous waste streams, including final disposal.

PATENT ADDENDUM

1. With respect to any invention or discovery made or conceived during the period of, or in the course of or under, this exchange arrangement in the field of High Temperature Reactor Research between the U.S. Atomic Energy Commission and the Kernforschungsanlage (KFA):
 - a) If made or conceived by personnel of one party (the assigning party) or its contractors while assigned to the other party (recipient party) or its contractors:
 - (1) 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 a non-exclusive, irrevocable, royalty-free license to the assigning party, with the right to grant sublicenses, under any such invention, discovery, patent application or patent for use in the production or utilization of special nuclear material or atomic energy; and
 - (2) 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 sublicenses, under any such invention, discovery, patent application or patent, for use in the production or utilization of special nuclear material or atomic energy.
 - b) If made or conceived while in attendance at meetings or when employing information which has been communicated under this exchange arrangement by one party or its contractors to the other party or its contractors, each party shall grant to the other party a royalty-free,

non-exclusive, irrevocable license, with the right to grant sublicenses, in and to any such invention, discovery, patent application, or patent, in all countries, for use in the production or utilization of special nuclear material or atomic energy.

2. Neither party shall discriminate against citizens of the country of the other party with respect to granting any license or sublicense under any invention under subparagraphs 1.a. and 1.b. above.
3. Each party waives any and all claims against the other party for compensation, royalty or award as regards any such inventions or discovery, patent application, or patent, and releases the other party with respect to any and all such claims, including any claims under the provisions of the United States Atomic Energy Act of 1954, as amended, and the German Labor Law (Arbeitnehmererfindergesetz) of July 1957, as amended, and the KFA assumes the obligation under the said German Law insofar as the United States Atomic Energy Commission and its contractors are concerned.
4. With respect to any invention or discovery, other than those referred to under subparagraphs a. and b. of paragraph 1 hereof, made or conceived in the course of or under the High Temperature Reactor Research programs of the respective parties set forth in Appendixes A and B hereof, each party agrees to grant to the other party, insofar as it has the right to do so, without payment of royalty, an irrevocable, paid-up license in and to any such invention or discovery for use in the KFA and USAREC facilities employed in this exchange arrangement. Other activities or facilities may be made subject to this paragraph by mutual agreement.