Enclosure 1.

DCS/DF02

NRC FORM 7 (1-89) 10 CFR 110

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB 3150-0027 EXPIRES 12-31-90

APPLICATION FOR LICENSE TO EXPORT NUCLEAR MATERIAL AND EQUIPMENT *(See Instructions on Reverse)*

1. APPLICANT'S USE — a. DATE OF APPLICATION: — b. APPLICANT'S REFERENCE: UKAEA-1

2. NRC USE — a. DOCKET NO.: 11004254 — b. LICENSE NO.: XCOM1034

3. APPLICANT'S NAME AND ADDRESS (RIS)
- a. NAME: U. S. Department of Energy
- b. STREET ADDRESS: Office of Nuclear Energy (NE-471, GTN)
- c. CITY: Washington — STATE: DC — ZIP CODE: 20545
- d. TELEPHONE NUMBER (Area Code – Number – Extension): 301-353-4078

4. SUPPLIER'S NAME AND ADDRESS *(Complete if applicant is not supplier of material)* (RIS)

DOE Contractor DE-AC05-84OR2140
- a. NAME: Martin Marietta Energy Systems, Inc.
- b. STREET ADDRESS: Oak Ridge National Laboratory, P.O.Box 2008
- c. CITY: Oak Ridge — STATE: TN — ZIP CODE: 37831

5. FIRST SHIPMENT SCHEDULED	6. FINAL SHIPMENT SCHEDULED	7. APPLICANT'S CONTRACTUAL DELIVERY DATE	8. PROPOSED LICENSE EXPIRATION DATE	9. U.S. DEPARTMENT OF ENERGY CONTRACT NO. *(If Known)*
1989	1992	N/A	12/31/92	DOE/UKAEA Agreements per attachments

10. ULTIMATE CONSIGNEE (RIS)
- a. NAME: Dounreay Nuclear Power Develop. Esablishment
- b. STREET ADDRESS: UKAEA,Thurso,Caithness KW14 7TZ
- c. CITY – STATE – COUNTRY: Scotland, United Kingdom

11. ULTIMATE END USE *(Include plant or facility name)*

Contactors will be used in a testing and analytical program in a specially built cell adjacent to the PFR separations line added for the purpose of carrying out the tests.

11a. EST. DATE OF FIRST USE

12. INTERMEDIATE CONSIGNEE (RIS)
- a. NAME: Same as 10.
- b. STREET ADDRESS:
- c. CITY – STATE – COUNTRY:

13. INTERMEDIATE END USE

Contactors will be used in a plutonium-active rig to test mass transfer performance prior to hot testing as described in Item 11.

13a. EST. DATE OF FIRST USE

14. INTERMEDIATE CONSIGNEE (RIS)
- a. NAME: Atomic Energy Research Establishment
- b. STREET ADDRESS: Harwell,Didcot,OXON OX11 ORA
- c. CITY – STATE – COUNTRY: England, United Kingdom

15. INTERMEDIATE END USE

Contactors will be run cold with depleted uranium to test hydraulic performance prior to testing with active solutions at Dounreay.

15a. EST. DATE OF FIRST USE

16. NRC USE	17. DESCRIPTION *(Include chemical and physical form of nuclear material; give dollar value of nuclear equipment and components)*	18. MAX. ELEMENT WEIGHT	19. MAX. WT. %	20. MAX. ISOTOPE WEIGHT	21. UNIT
	The equipment consists of experimental centrifugal contactors, detailed drawings for interfacing and maintenance, software control algorithms, and spare and replacement parts needed to test the units in non-radioactive and radioactive environments.	N/A	N/A	N/A	N/A

9002020006 900122
PDR XPORT
XCOM-1034 PDC

22. COUNTRY OF ORIGIN-SOURCE MATERIAL	23. COUNTRY OF ORIGIN-SNM WHERE ENRICHED OR PRODUCED	24. COUNTRIES WHICH ATTACH SAFEGUARDS *(If Known)*
N/A	N/A	N/A

25. ADDITIONAL INFORMATION *(Use separate sheet if necessary)*

See other Enclosures to the transmittal letter.

Rec'd 90-Jan 24

26. The applicant certifies that this application is prepared in conformity with Title 10, Code of Federal Regulations, and that all information in this application is correct to the best of his/her knowledge.

27. AUTHORIZED OFFICIAL — a. SIGNATURE: [signature] — b. TITLE: Dir., Div. of Fuels and Reprocessing

NRC FORM 7 (1-89)

1/1

Enclosure 2

United States Government **Department of Energy**

memorandum

DATE: DEC 4 1989

REPLY TO ATTN OF: NE-471, GTN

SUBJECT: US/UK Technology Exchange

TO: Zan Hollander, DP-323.1

Under the subject exchange program, DOE has supplied on loan to the UKAEA four 4-stage banks of centrifugal contactors for testing in an experimental and analytical program in the UK. The contactors are advanced machines currently under development by DOE at ORNL and were not designed for reprocessing; we do not have enough test information to do that. The contactors will be tested in the UK as part of a joint test program under test conditions not available in the U.S. because of funding and other (e.g., facility availability) reasons. The ORNL system used to date only provides capability for tests with depleted uranium. In the UK, three test phases are planned: tests with uranium in the Solvent Extraction Pilot Plant at Harwell, tests with a 'cold' (alpha activity only) mixed uranium-plutonium solution in Building 2670 (Marshall Laboratory) at the Dounreay Nuclear Power Development Establishment, and 'hot' (alpha activity plus beta-gamma activity from fission products) tests with prototypic uranium-plutonium solutions in a specially built test cell adjacent to the PFR separation line in Building D1206 at Dounreay, added for the purpose of carrying out the hot tests.

The objective of the test program is to obtain performance data and operating experience, not otherwise available to DOE, to help determine the feasibility of designing contactors for use in a future FBR reprocessing plant and to develop dynamic and mechanical design information that would be needed for future versions/upgrades. In the nature of a developmental item, scientific and not commercial in character, several cycles of testing, design upgrades, followed by further testing are expected. The contactors in question are clearly not designed or intended for a reprocessing plant, are still under long-term development and not suitable for use in a reprocessing plant. They will be used in test loops/configurations and for the technology development and exchange purposes indicated.

As you can appreciate, it is no simple matter to arrange or simulate prototypic hot test conditions. For this program, the hot tests planned will be in a newly constructed Centrifugal Contactor Facility (cell) at the PFR separations line (see attached). Because of duplicate mixer-settler capabilities in two High Active Cells in the PFR process line, the centrifugal contactors are able to be 'piped-in' in parallel with no impact on PFR-process operations. Feed solution and solvent will be taken from the normal plant first cycle process lines into the cell for the test runs. Should the centrifugal contactors malfunction, the feed and solvent streams can be valved back to the normal mixer-settler banks. The agreement provides for return of the contactors after the test program is completed in the 1993-94 time frame. As you know, recent changes in plans for the UK

breeder program call for shutdown of the PFR in 1994, and other facilities phased out thereafter.

This testing program is carried out under the US/UK LMFBR agreement, the DOE-UKAEA Reprocessing Technology Exchange Agreement, and the Specific Memorandum of Agreement in the Area of Solvent Extraction Centrifugal Contactors (July 5, 1988).

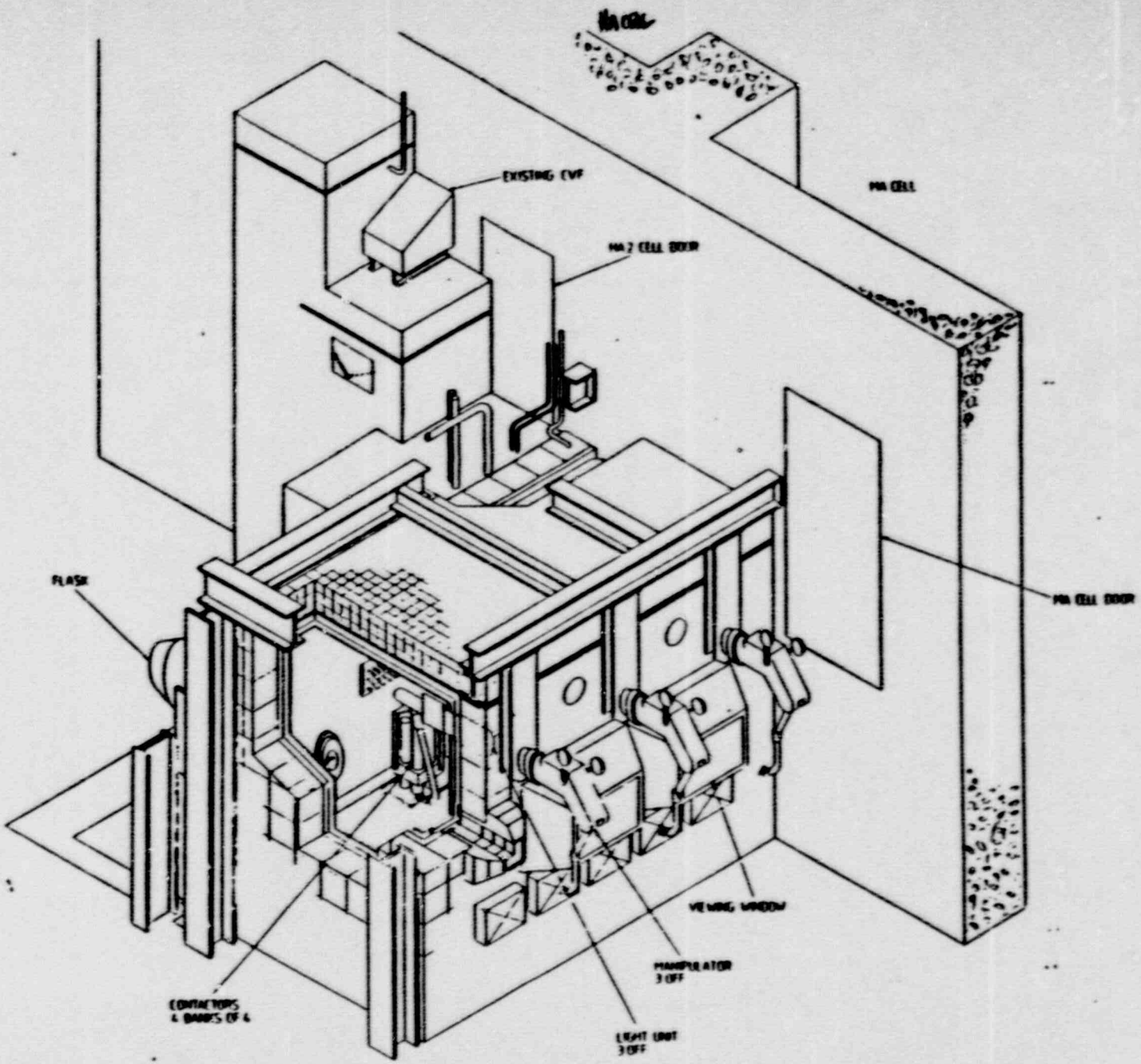
If you need additional clarification or information, please let me know. Please note that three of the attached sheets (Figures 9, 10, 11) are marked "Commercial in Confidence" by the UKAEA and should be treated accordingly.

Dave Bailey

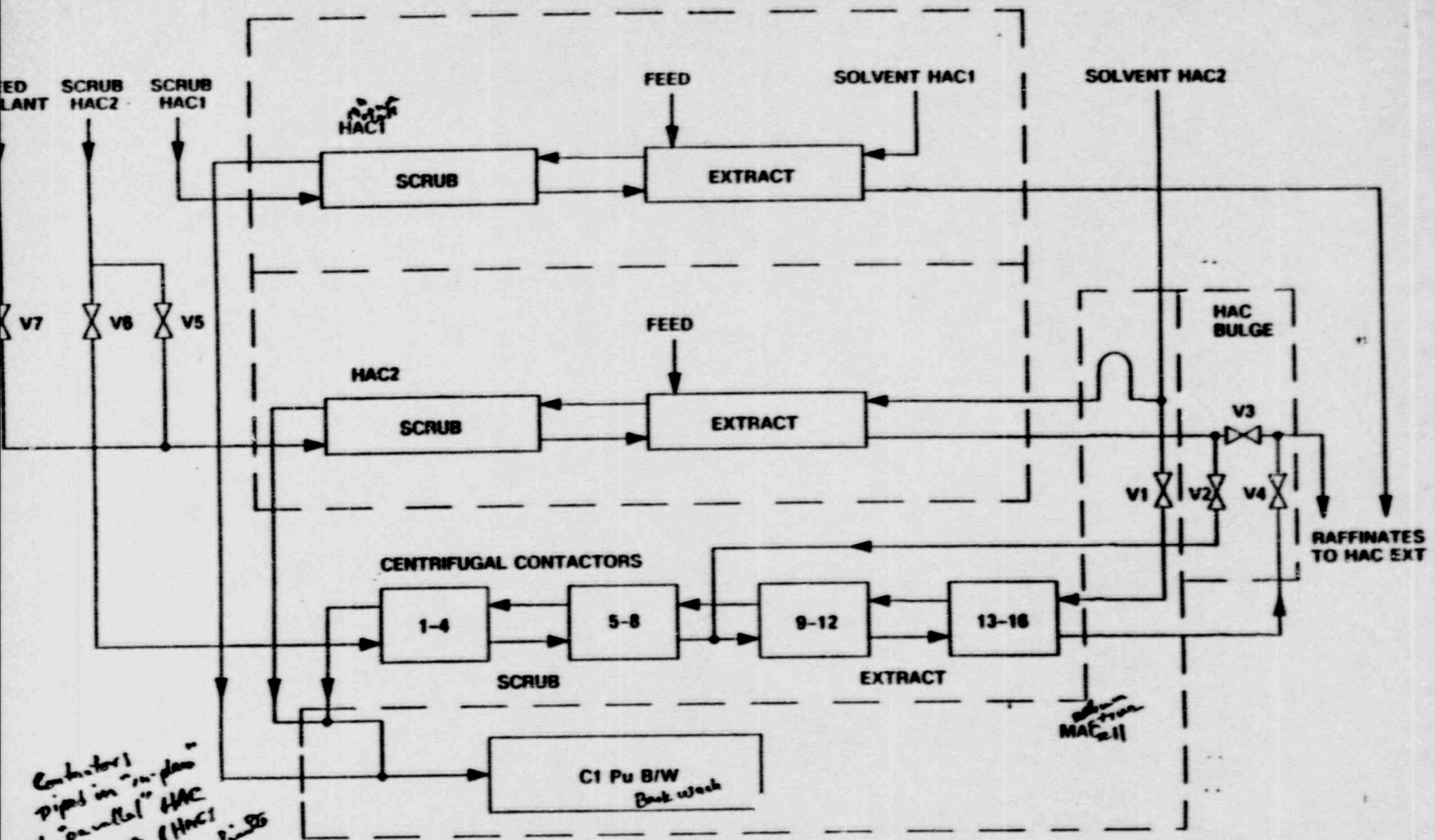
David E. Bailey, Director
Division of Fuels and Reprocessing
Office of Facilities, Fuel Cycle,
and Test Programs
Office of Nuclear Energy

Attachment

cc: w/attachment
J. M. Rooney, DP-323
K. E. Horton, NE-14
R. A. Hunter, NE-47



CENTRIFUGAL CONTACTOR FACILITY DI206



Contactors piped in "in-plane" of "parallel" HAC capability (HAC1 and HAC2 modules to of equal capability).

CENTRIFUGAL CONTACTORS INSTALLATION IN CYCLE 1 SIMPLIFIED LINE DIAGRAM

FIGURE 1

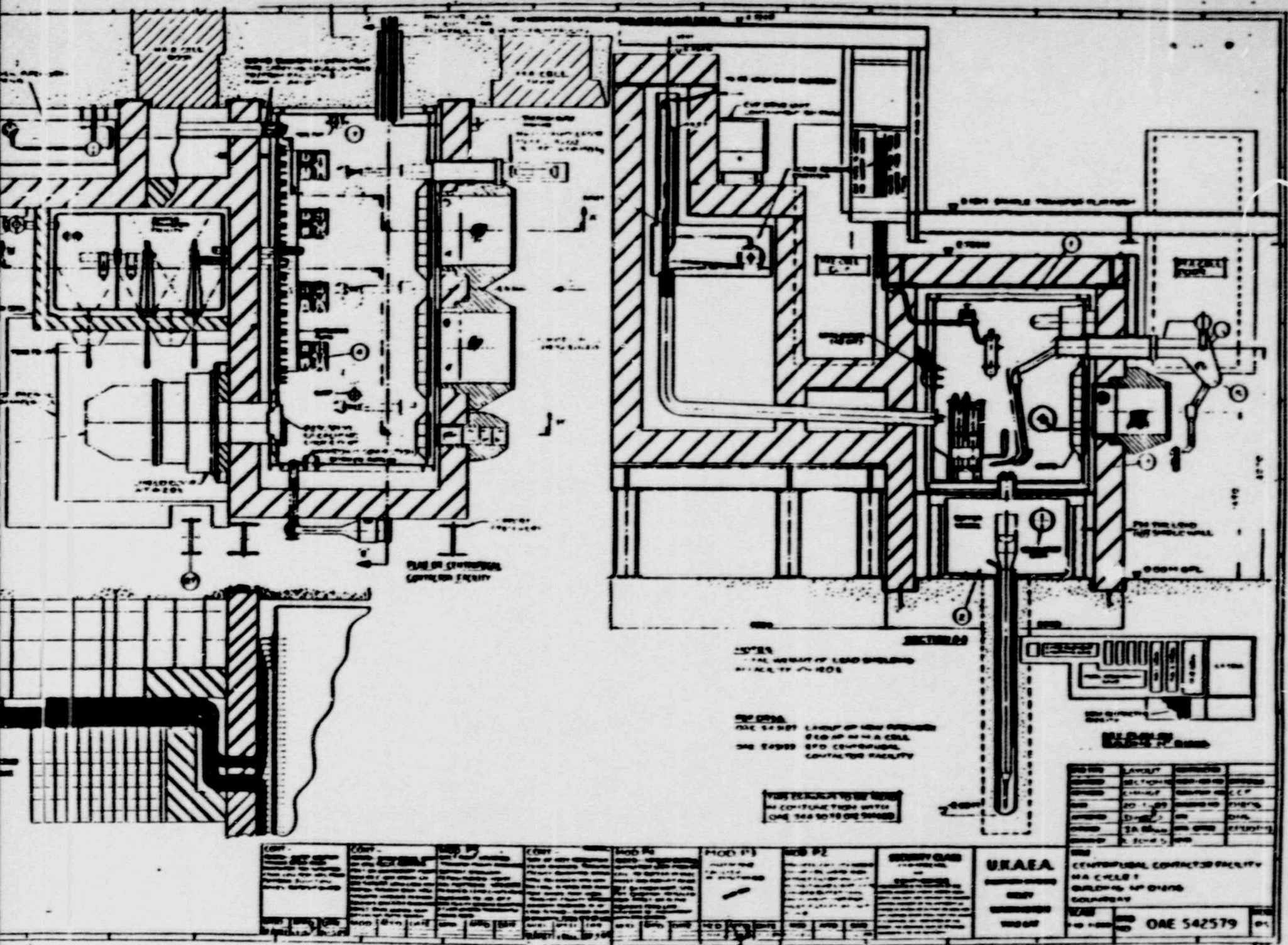


Fig 9

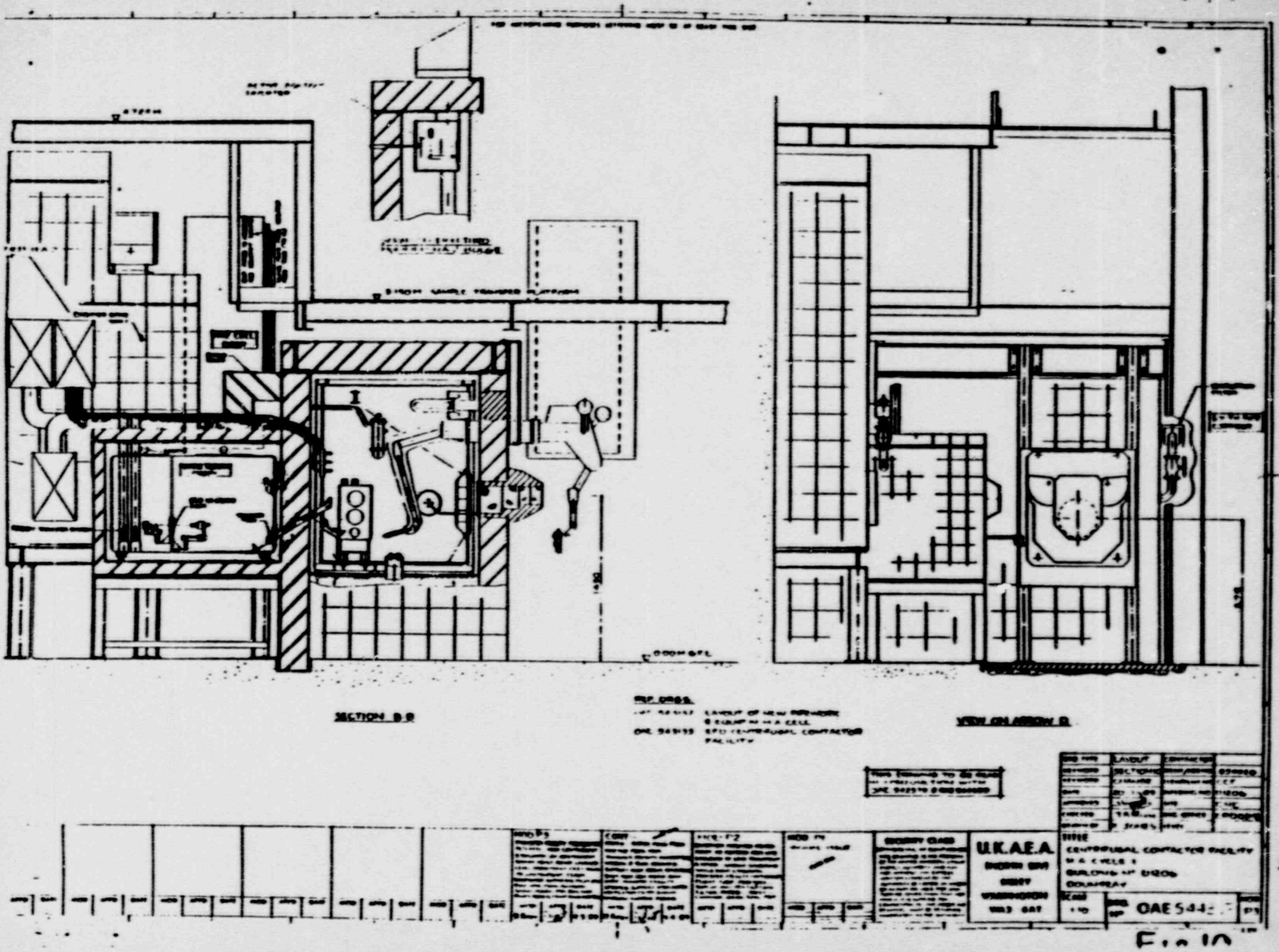

SECTION B-B
VIEW ON ARROW B
U.K.A.E.A.
CENTRIFUGAL CONTACTOR FACILITY
OAE 544

Fig 10

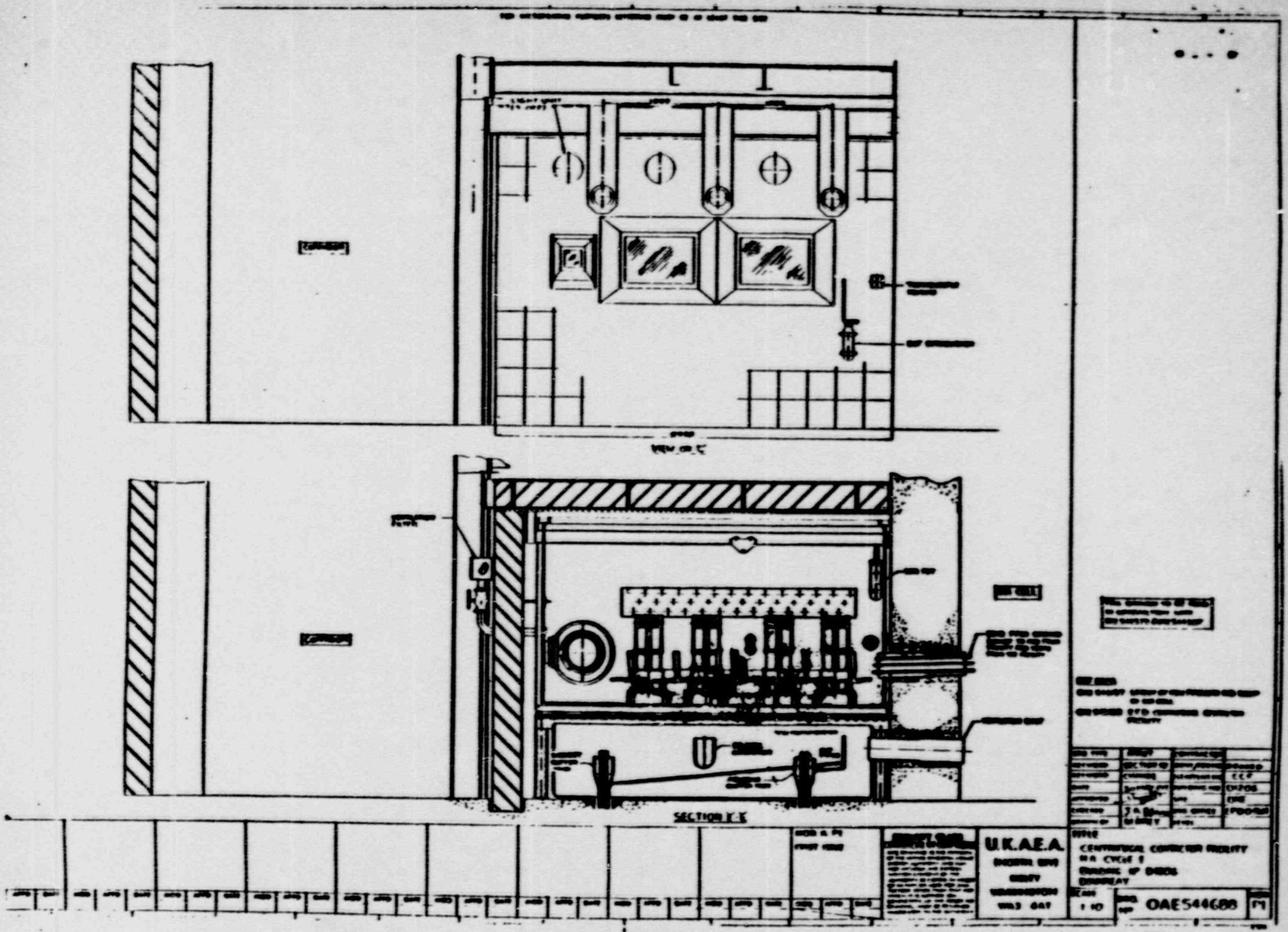


Fig 11

Enclosure 3.

AGREEMENT

between

THE UNITED STATES ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

and the

UNITED KINGDOM ATOMIC ENERGY AUTHORITY

in the field of

LIQUID METAL-COOLED FAST BREEDER REACTORS

September 20, 1976

Extended by letter agreements

AGREEMENT

between

THE UNITED STATES ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

and the

UNITED KINDGOM ATOMIC ENERGY AUTHORITY

in the field of

LIQUID METAL-COOLED FAST BREEDER REACTORS

This Agreement is made as of the 20th day of September, 1976 between the United States Energy Research and Development Administration (hereinafter referred to as "ERDA") having their principal office at 20 Massachusetts Avenue, NW., Washington, D.C. 20545, and the United Kingdom Atomic Energy Authority (hereinafter referred to as "UKAEA") having their principal office at 11 Charles II Street, London SW1Y 4QP, hereinafter called the Parties.

WHEREAS

The United States Atomic Energy Commission (USAEC) and UKAEA have exchanged research and development information in the field of fast reactors under the terms of an "Arrangement" between them that became effective on 11 February 1965.

Certain responsibilities of the USAEC were transferred to ERDA on 18 January 1975, and the exchange of fast reactor information between the USAEC and UKAEA has continued as between ERDA and UKAEA since that date.

The "Arrangement" of 11 February 1965 has been terminated on 20 July 1976, with the expiration of the Agreement between the Governments of the United States and the United Kingdom for Co-operation on the Civil Uses of Atomic Energy signed on 15 June 1955, as amended.

ERDA and UKAEA have a mutual interest in developing the Liquid Metal-cooled Fast Breeder Reactor (LMFBR) and in maintaining important roles in such development.

ERDA and UKAEA wish to continue close and long term co-operation in the field of LMFBR technology which, for purposes of this Agreement, includes research, development and demonstration.

ERDA and UKAEA recognize the need to establish procedures governing the protection of privileged or confidential information in connection with activities under this Agreement.

IT IS AGREED AS FOLLOWS

ARTICLE 1

The objective of cooperation under this Agreement is to establish, for the mutual benefit of the Parties, a reasonably balanced exchange of LMFBR technology. The areas and forms of cooperation are listed under Articles 2 and 3, respectively.

ARTICLE 2

The areas of cooperation in LMFBR technology covered by this Agreement may include:

1. Reactor neutronics analysis and experimentation, to include reactor shielding and nuclear data.

2. Reactor safety.

3. Fuels and materials, to include structural, component, absorber and circuit materials.

4. Fuel cycle including fabrication, reprocessing, waste processing and storage.

5. Reactor and sodium systems and their associated components, to include component and system design, instrumentation and control, thermal hydraulics and structural analysis.

6. Sodium technology, to include detection of impurities, purification, control, component decontamination, sodium leaks and sodium fires.

7. Non-nuclear test facilities which support LMFBR programs.

8. Quality assurance and non-destructive practices.

9. Overall LMFBR programs of the US and UK.

10. Operation of LMFBR's.

11. Economic and environmental considerations.

12. Topics of interest to industry (design, construction experience, quality assurance).

Other areas of cooperation may be added by mutual agreement.

ARTICLE 3

Cooperation in accordance with this Agreement may include but is not limited to the following forms:

1. Exchange of scientists, engineers and other specialists for participation in agreed research, development, analysis, design and experimental activities conducted in scientific centers, laboratories, engineering offices and reactor facilities of each of the Parties or its contractors for agreed periods. Such exchanges of staff shall be in accordance with Article 9 of this Agreement.

2. Exchange of samples, materials, instruments and components for testing.

3. Exchange of scientific and technical information and results and methods of research and development.

4. The organization of seminars and other meetings on specific agreed topics concerning LMFBR technology in the areas listed in Article 2, in a manner agreed by the Joint Coordinating Committee (Article 4). Such seminars shall normally be held alternately in the US and UK for each topic.

5. Short visits by specialist teams or individuals to the LMFBR facilities of the other Party.

6. The use by one Party of the facilities owned or operated by the other Party. Such use of facilities shall be the subject of separate agreements between the Parties, and may be subject to commercial terms and conditions.

7. Joint projects in which the Parties agree to share the work and/or costs. Each such joint project shall be the subject of a separate agreement between the Parties.

Other specific forms of cooperation may be agreed by the Parties and approved by the Joint Coordinating Committee.

ARTICLE 4

1. To supervise the execution of this Agreement, a Joint ERDA/UKAEA Coordinating Committee in the field of Liquid Metal-cooled Fast Breeder Reactors shall be established. This Committee shall meet each year alternately in the US and UK, or at other agreed times and places. The Head of the Delegation of the Receiving Party shall act as Chairman during meetings of the Committee.

2. At its meetings, the Joint Coordinating Committee shall evaluate the status of cooperation under this Agreement. This evaluation shall include a comprehensive review of each Party's LMFBR program status and plans, an assessment of the balance of exchanges in the various areas of cooperation listed in Article 2, and a consideration of measures required to correct any imbalances. In addition, the Joint Coordinating Committee shall consider and act on any major new proposals for cooperation.

3. For periods between meetings of the Joint Coordinating Committee, each Party shall nominate one person to act on its behalf in all matters concerning cooperation under this Agreement.

4. Day to day management of the cooperation under this Agreement shall be carried out by correspondents or others designated by the persons nominated under paragraph 3 of this Article.

ARTICLE 5

1. Where it is decided a cooperative program or project under this Agreement should be subject to a formalized specific memorandum of agreement executed by both Parties, the specific agreement should cover all detailed provisions for implementing that agreement including such matters as patents, exchange of equipment and information disclosure specific to the particular program or project.

ARTICLE 6

1. General

The Parties support the widest possible dissemination of information provided or exchanged under this Agreement, subject to the need to protect proprietary information exchanged hereunder, and to the provisions of Article 8.

2. Use of Proprietary Information

A. Definitions as used in this Agreement:

(i) The term "information" means scientific or technical data, results or methods of research and development, and any other information intended to be provided or exchanged under this Agreement;

(ii) The term "proprietary information" means information which contains trade secrets or commercial or financial information which is privileged or confidential, and may only include such information which:

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.

B. Procedures

(i) A Party receiving proprietary information pursuant to this Agreement shall respect the privileged nature thereof. Any document which contains proprietary information shall be clearly marked with the following (or substantially similar) restrictive legend:

"This document contains proprietary information furnished in confidence under an Agreement dated _____ between the United States Energy Research and Development Administration and the United Kingdom Atomic Energy Authority and shall not be disseminated outside these

organizations, their contractors, licensees and the concerned departments and agencies of the governments of the US and UK without the prior approval of _____.

This notice shall be marked on any reproduction hereof, in whole or in part. These limitations shall automatically terminate when this information is disclosed by the owner without restriction."

(ii) Proprietary information received in confidence under this Agreement may be disseminated by the receiving Party to:

a) persons within or employed by the receiving Party, and concerned Government departments and Government agencies in the country of the receiving Party;

b) prime or subcontractors of the receiving Party located within the geographical limits of the receiving Party's nation, for use only within the framework of their contracts with the receiving Party in work relating to the subject matter of the proprietary information;

c) organizations licensed by the receiving Party in the field of development, design and construction of LMFBR's and their fuel for use only within the terms of such licenses.

provided that any proprietary information so disseminated shall be pursuant to an agreement of confidentiality and shall be marked with a restrictive legend substantially identical to that appearing in subparagraph 2.B(i) above.

(iii) With the prior written consent of the Party providing proprietary information under this Agreement, the receiving Party may disseminate such proprietary information more widely than otherwise permitted in the foregoing subsection (ii). The Parties shall cooperate with each other in developing procedures for requesting and obtaining approval for such wider dissemination, and each Party will grant such approval to the extent permitted by its national policies, regulations and laws.

C. Each Party shall exercise its best efforts to ensure that proprietary information received by it under this Agreement is controlled as provided herein. If one of the Parties becomes aware that it will be, or may reasonably be expected to become, unable to meet the non-dissemination provisions of this Article, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

D. Information arising from seminars and other meetings arranged under this Agreement and information arising from the attachments of staff, use of facilities and joint projects shall be treated by the Parties according to the principles specified in this Article; provided, however, no proprietary information orally communicated shall be subject to the limited disclosure requirements of this Agreement

unless the individual communicating such information places the recipient on notice as to the proprietary character of the information communicated.

E. Nothing contained in this Agreement shall preclude the use or dissemination of information received by a Party other than pursuant to this Agreement.

ARTICLE 7

Information transmitted by one Party to the other Party under this Agreement shall be accurate to the best knowledge and belief of the Transmitting Party, but the Transmitting Party does not warrant the suitability of the information transmitted for any particular use or application by the Receiving Party or by any third Party. Information developed jointly by the Parties shall be accurate to the best knowledge and belief of both Parties. Neither Party warrants the accuracy of the jointly developed information or its suitability for any particular use or application by either Party or by any third Party.

ARTICLE 8

1. With respect to any invention or discovery made or conceived in the course of or under this Agreement:

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, in connection with exchanges of scientists, engineers and other specialists;

(1) The Recipient Party shall acquire all right, title and interest in and to any such invention or discovery in its own country and in third countries, subject to a non-exclusive, irrevocable, royalty-free license in all such countries to the Assigning Party, with the right to grant sublicenses, under any such invention or discovery and any patent application, patent or other protection relating thereto, for use in the production or utilization of special nuclear material or atomic energy.

(2) The Assigning Party shall acquire all right, title and interest in and to any such invention or discovery 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 or discovery and any patent application, patent or other protection relating thereto, for use in the production or utilization of special nuclear material or atomic energy.

b. If made or conceived by a Party or its contractors as a direct result of employing information which has been communicated to it under this Agreement by the other Party or its contractors or communicated during seminars or other joint meetings, the Party making the invention shall acquire all right, title and interest in and to such invention or discovery in all countries, subject to a grant to the other Party of a royalty-free, non-exclusive, irrevocable license with the right to grant sublicenses in and to any such invention or discovery and any patent application, patent or other protection relating thereto, in all countries for use in the production or utilization of special nuclear materials or atomic energy.

c. With regard to other specific forms of cooperation, including loans or exchanges of materials, instruments and equipment for special joint research projects, the Parties shall provide for appropriate distribution of rights to inventions or discoveries resulting from such cooperation. In general, however, each Party should normally own the rights to such inventions or discoveries in its own country with a non-exclusive, irrevocable, royalty-free license to the other Party, and the rights to such inventions or discoveries in other countries should be agreed by the Parties on an equitable basis.

d. It is understood that after the European Patent Conventions have come into force, either Party may request a modification of this paragraph 1 for the purpose of according equivalent rights as provided in subparagraphs 1a.-c. above under the European Patent Conventions.

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 or discovery pursuant to paragraph 1 above. It is understood that the licensing policies and practices of each Party may be affected because of the rights of both Parties to grant licenses within a single jurisdiction. Accordingly, either Party may request, in regard to a single invention or discovery or class of inventions or discoveries, that the Parties consult in an effort to lessen or eliminate any detrimental effect that the parallel licensing authorities may have on the policies and practices of the Parties.

3. Each Party shall assume the responsibility to pay awards or compensation required to be paid to its own nationals according to its own laws.

ARTICLE 9

1. Whenever an exchange of staff is contemplated under this Agreement, each Party shall ensure that qualified staff are selected for attachment to the other Party.

2. Each such attachment of staff shall be the subject of a separate attachment agreement between the Parties.

3. Each Party shall be responsible for the salaries, insurance and allowances to be paid to its personnel.

4. Each Party shall pay for the travel and living expenses of its personnel while on attachment to the host Party unless otherwise agreed.

5. The host establishment shall arrange for comparable accommodations for the other Party's personnel and their families on a mutually agreeable reciprocal basis.

6. Each Party shall provide all necessary assistance to the attached staff (and their families) of the other Party as regards administrative formalities (travel arrangements, etc.).

7. The personnel of each Party shall conform to the general and special rules of work and safety regulations in force at the host establishment, or as agreed in separate attachment of staff agreements.

8. Liabilities incurred during attachment of staff shall be covered in separate attachment of staff agreements.

ARTICLE 10

The provisions of this Agreement shall not affect the rights or duties of the Parties hereto under other agreements or arrangements. This

Agreement also in no way precludes commercial firms or other legally constituted enterprises in each of the two countries from engaging in commercial dealings in accordance with the applicable laws of each country; nor does it preclude the Parties from engaging in activities with other Governments or persons. Moreover, it is expected that the present Agreement should facilitate industrial and commercial exchanges in the field of LMFBR between the firms of the countries of the Parties with a view to mutual benefits from such exchanges for both countries. UKAEA has funded and expects to continue to fund substantial development work on fast reactor technology. Use of the results of such technology by industrial organizations in the UK is governed by appropriate regulations and agreements involving UKAEA. Accordingly, UKAEA will seek to coordinate arrangements with UK industrial organizations involving such technology. ERDA shall act as the point of coordination for contracts and arrangements involving US commercial firms when such firms or enterprises act on behalf of the US Government under the terms of this Agreement. It is understood that all such contracts and arrangements shall conform with applicable laws and regulations under which each Party operates.

ARTICLE 11

Cooperation under this Agreement shall be in accordance with laws of the respective countries and the regulations of the respective Parties. All questions related to the Agreement arising during its term shall be settled by the Parties by mutual agreement.

ARTICLE 12

Except when otherwise specifically agreed at the time, all costs resulting from cooperation under this Agreement shall be borne by the Party that incurs them. It is understood that the ability of the Parties to carry out their obligations is subject to the availability of appropriated funds.

ARTICLE 13

1. This Agreement shall enter into force upon signature and, subject to paragraph 2 of this Article, shall continue for a five (5)-year period. This Agreement may be extended subject to agreement by the Parties following a review of accomplishments under the Agreement.

2. This Agreement may be terminated at any time at the discretion of either Party, upon six (6) months advance notification in writing by the Party seeking to terminate the Agreement. Such termination shall be without prejudice to the rights which may have accrued under this Agreement to either Party up to the date of such termination.

3. The Parties agree that all discussions, meetings, exchanges of documents or other acts of cooperation between them since the termination of the "Arrangement" of 11 February 1965, and prior to signature of this Agreement which, if they had occurred subsequent to the signature of this Agreement, would have been subject to this Agreement, shall be subject to the terms hereof.

4. In the event that, during the period of this Agreement, the nature of either party's LMFBR program should change substantially whether this be by substantial expansion, reduction, transformation or amalgamation of major elements with the LMFBR program of a third party, either Party shall have the right to request revisions in the scope and/or terms of this Agreement.

5. All joint efforts and experiments not completed at the termination of this Agreement shall be continued until their completion under the terms of this Agreement.

Done at Washington, D.C. this 20th day of September 1976.

FOR THE UNITED STATES
ENERGY RESEARCH AND
DEVELOPMENT ADMINISTRATION

NAME: Wm S. Burchfield

TITLE: Director
Division of Reactor Development
and Demonstration

FOR THE UNITED KINGDOM
ATOMIC ENERGY AUTHORITY

NAME: T. N. Marsham

TITLE: Deputy Managing Director
The Reactor Group

Department of Energy
Washington, DC 20585

DEC 28 1987

Dr. G. A. Welch
Commercial Director
United Kingdom Atomic Energy
Authority
Rinsley, Warrington
Cheshire WA3 6AT
United Kingdom

Dear Dr. Welch:

On behalf of the Department of Energy, I want to thank you for your letter of November 25, 1987, in which you proposed the extension of the Agreement between the United States Department of Energy and the United Kingdom Atomic Energy Authority in the field of Liquid Metal-Cooled Fast Breeder Reactors until December 31, 1988.

The Department agrees with the Atomic Energy Authority that the efforts which our organizations have expended over the past twelve years have been of mutual benefit and, therefore, can only continue to enhance our program.

It is therefore with pleasure that I accept, on behalf of the Department of Energy, your proposal to extend the Agreement in the field of Liquid Metal-Cooled Fast Breeder Reactors until December 31, 1988, or until such time as an agreement is signed between the Department and the Joint European R&D Organizations, whichever is earlier.

Sincerely,

David E. Walter
Assistant Secretary for
International Affairs and
Energy Emergencies

RISLEY
UK ATOMIC ENERGY AUTHORITY

Corporate Headquarters Outstation Unit
United Kingdom Atomic Energy Authority
Risley
Warrington
Cheshire WA3 6AT

Telex 629301 Fax (0925) 32804
Telephone Warrington (0925) 31244

25 November 1987

Mr D B Waller
Assistant Secretary for
International Affairs & Energy Emergencies
USDOE
Washington DC 20545
USA

Dear Mr Waller

The Agreement between the United States Department of Energy (formerly the Energy Research and Development Administration) and the United Kingdom Atomic Energy Authority in the field of Liquid Metal-Cooled Fast Breeder Reactors, which entered into force on September 20, 1976, is due to expire on December 31, 1987.

We in the UKAEA believe that this Agreement has been of considerable mutual benefit to our two organisations.

I am, therefore, pleased to propose on behalf of the United Kingdom Atomic Energy Authority that this letter and your favourable reply on behalf of the United States Department of Energy shall have the effect of extending the Agreement between our organisations in the field of Liquid Metal-Cooled Fast Breeder Reactors until December 31, 1988, or until such time as an agreement is signed between the United States Department of Energy and the joint European R&D Organisations, whichever is the earlier.

Yours sincerely

G A Welch

RISLEY
UK ATOMIC ENERGY AUTHORITY

14 December 1988

Corporate Headquarters Outstation Unit
United Kingdom Atomic Energy Authority
Risley
Warrington
Cheshire WA3 6AT

Telex 629301 Fax (0925) 32804
Telephone Warrington (0925) 31244

Mr David B Waller
Assistant Secretary of Energy for
International Affairs and Energy Emergencies
US Department of Energy
Washington DC 20545
USA

Dear Mr Waller

Thank you for your letter, addressed to my predecessor, Dr Welch, and dated 1 November 1988, in which you propose that the Agreement on cooperation in the field of LMFBRs between the US Department of Energy (USDOE) and the United Kingdom Atomic Energy Authority (UKAEA), dated 20 September 1976, should be extended by a further two years, until 31 December 1990.

The United Kingdom Atomic Energy Authority highly values the technical discussions which its specialists have been able to have with colleagues in the USA, and the collaborative work we have been able to carry out, under the terms of this Agreement, and also wishes to keep the Agreement in force until such time as it is superseded by the proposed US/European cooperation agreement. After discussion with our associates in the Commissariat à l'Energie Atomique and in the Bundesministerium für Forschung und Technologie, we therefore agree with your proposal of a two year extension of our Agreement - subject to the proviso that, if the US/European agreement is signed before 31 December 1990, our Agreement shall be terminated as from the date on which the new agreement enters into force.

On behalf of the United Kingdom Atomic Energy Authority, I therefore agree to your proposal of an extension of the USDOE/UKAEA Agreement until 31 December 1990, or until such time as an agreement between the European grouping of fast reactor R&D organisations and US Department of Energy (and, if appropriate, other R&D organisations in the USA) enters into force, whichever is the earlier.

Yours sincerely

J I Bramman
Head of International Collaboration Branch
Central Services

cc Dr B L Eyre
Mr M A W Baker
Mr A M Broomfield
Mr J R Bretherton
File ICB USA/220

Department of Energy
Washington, DC 20585

NOV 1 1988

Dr. G. A. Welch
Commercial Director
United Kingdom Atomic Energy Authority
Rinsley, Warrington
Cheshire WA3 6AT
United Kingdom

Dear Dr. Welch:

The U.S. Department of Energy (DOE) and the United Kingdom Atomic Energy Authority (UKAEA) have had an agreement for cooperation in the field of liquid metal fast breeder reactors since September 20, 1976. It is our belief that significant cooperation has resulted from this arrangement.

As you know, after the formation of the European fast reactor "Club of Five" arrangement in 1984, we agreed to pursue the idea of a U.S.-European two party agreement among the United States, the United Kingdom (UK), the Federal Republic of Germany (FRG), France, Italy and Belgium. Initial drafts of a two party, multinational agreement were exchanged, and it is our understanding that the Bundesministerium für Forschung und Technologie (BMFT) of the FRG now has the assignment of developing a new draft.

Recent events in Europe have, from our perspective, raised new issues concerning this two party agreement which undoubtedly will take time to resolve. Therefore, we recommend postponing further dialogue on this matter and instead agree again to extend our bilateral agreement. We are making a similar proposal to the BMFT and the French Commissariat a l'Energie Atomique.

If the above is acceptable to you, I am pleased to propose on behalf of the Department of Energy that this letter, and your favorable reply, shall have the effect of extending the LMFBR agreement for another two years until December 31, 1990.

We look forward to continuing our arrangements with the UKAEA in the liquid metal reactor program.

Sincerely,

David S. Waller
Assistant Secretary of Energy
for International Affairs and
Energy Emergencies