

## A G R E E M E N T

between

COMMISSARIAT A L'ENERGIE ATOMIQUE, FRANCE  
(hereinafter called "CEA")

ELECTRICITE DE FRANCE, FRANCE  
(hereinafter called "EdF")

ELECTRIC POWER RESEARCH INSTITUTE, USA  
(hereinafter called "EPRI")

UNITED STATES NUCLEAR REGULATORY COMMISSION, USA  
(hereinafter called "NRC")

FORSØGSANLAEG RISØ, DENMARK  
(hereinafter called "RISØ")

TECHNICAL RESEARCH CENTRE OF FINLAND, FINLAND  
(hereinafter called "VTT")

INSTITUTT FOR ATOMENERGI, NORWAY  
(hereinafter called "AEN")

AKTIEBOLAGET ATOMENERGI, SWEDEN  
(hereinafter called "AES") and

N.V. TOT KEURING VAN ELECTROTECHNISCHE MATERIALEN THE NETHERLANDS  
(hereinafter called "KEMA")

hereinafter jointly called "the contracting parties"  
concerning

A JOINT PROJECT FOR PLANNING, DESIGN, EXPERIMENT PREPARATION,  
PERFORMANCE AND REPORTING OF REACTOR SAFETY EXPERIMENTS CON-  
CERNING CRITICAL FLOW (hereinafter called "the project")

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PREAMBLE

Considering

- the generally acknowledged need for large scale experimental safety studies related to critical flow conditions pertaining to light water reactors
- the possibilities offered by the Marviken facility for such large scale experiments, already demonstrated in international projects concerning full scale containment tests performed since 1972,

the contracting parties have this day agreed as follows:

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## PURPOSE OF THE AGREEMENT

The purpose of this Agreement is to establish cooperation between the contracting parties in a project using jointly the Marviken reactor for certain safety experiments. The project covered by this Agreement comprises a joint programme for planning, design, experiment preparation, performance and reporting of reactor safety experiments concerning large scale critical flow tests.

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### III SCOPE OF THE PROJECT

The scope of the project is to plan, design, prepare, perform and report a series of tests on critical discharge flow for light water reactor safety at Marviken within the framework of an international cooperation.

The project will be performed according to Appendices A - F and will aim at providing the contracting parties with further information on critical flow through short tubes of large diameter.

The framework of the project is laid down in the appendices to this Agreement:

<u>Appendix A</u>	Description of programmes
<u>Appendix B</u>	Instrumentation
<u>Appendix C</u>	Organization
<u>Appendix D</u>	Budget
<u>Appendix E</u>	Time schedule
<u>Appendix F</u>	Reports

The project consists of four kinds of activities defined as phases below:

Phase A	Planning and design
Phase B	Experiment preparation
Phase C	Performance of the test programme. Data collection reduction and reporting of data and interpretation of results
Phase D	Final reporting of results

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#### IV ORGANIZATION OF THE PROJECT

- 1 The project shall be directed by a project board. The board shall decide on all matters concerning the project within the framework of this Agreement.

Each contracting party shall appoint one member of the board. The member appointed by AES will be the chairman of the board. Each member of the board may be assisted at the board meeting by one specialist who shall not have a voting right. The board shall meet at least 3 times a year. Additional board meetings shall be convened at the request of one member of the board.

The decisions of the project board shall normally be made by mutual agreement. Should it be necessary to vote on any decision, each member of the board shall have a number of votes in proportion to the financial commitment of the contracting party concerned according to Article VI below. Every member shall be given the opportunity to cast his vote. 51 % of the votes cast are required for a decision. An opportunity will be provided for voting in absentia and/or through designated alternate upon proper and timely notification of the matter to be voted on. Should it be necessary to revise the programme, the board should be prepared to meet at short notice.

AES has an absolute veto right against decisions involving the safety of the plant or conflicts with Swedish laws and regulations.

- 2 AES shall appoint a project manager. The appointment requires the approval of the project board. The project manager shall be responsible to the project board for the execution and management of the agreed project. His duties include the drawing up of detailed programmes of work, including cost and time schedules.

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The project manager shall be present at the meetings of the project board and shall have the right to participate in the deliberations. He shall report at each meeting on the progress of the work of the project.

- 3 A committee, called the Technical Review and Advisory Committee (TRACE), shall be established. The committee shall be composed of senior technical experts preferably those assisting the Board members as mentioned under Article IV:1. Each original signatory shall have the right to designate one member to the TRACE. The committee shall from time to time review the technical status of the project and advise the Project Board and the Project manager on technical matters.

AES shall appoint the chairman of the TRACE. The committee shall meet at least three times a year. The project manager shall be in attendance at the meetings of the committee.

- 4 In the performance of his duties, the project manager shall be assisted by a project staff as exemplified in Appendix C.
- 5 AES undertakes to render the necessary technical and administrative services and to procure the material for implementation of the project. Legal acts relating to the carrying out of the project shall be performed by AES on behalf of the contracting parties.
- 6 For the financial management of the project AES shall arrange an adequate book-keeping and reporting system according to the needs of this Agreement. Additional reporting that may be required for specific national reasons is not the responsibility of the project. The auditing shall be performed by the auditors of AES, and if so requested by any of the other parties, by auditors elected by them.

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TIME SCHEDULE

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The project has started as of July 1, 1976 and shall be carried out in accordance with the time schedule in Appendix E.

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At the end of each of the phases defined in Article III above and indicated in Appendix E the Board shall review the outcome of the work performed. The formal approval of the Board is required for the start of the next phase.

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Expenditure relating to the carrying out of the project shall be borne by the contracting parties under the conditions specified in the present Article.

The project budget as presented in Appendix D amounts to Skr 27.9 Million. This amount includes all foreseen wage and price increases for the programme planned to be carried out and specified in Appendix A - F.

As a reserve to cover

- a project management operational reserve fund,
- additional costs due to alterations in the technical programme during the planning and design phase,
- other unforeseen cost increases and
- unforeseen inflationary cost increases,

the parties undertake jointly to make available an amount of Skr 2.1 Million, thereby constituting a total budget of Skr 30 Million. Including the reserve funds the program budget is Skr 28 Million. The balance of Skr 2 Million, asked for by the Swedish Ministry of Industry, does not require any additional funding from the contracting parties to this agreement.

The utilization of the reserve funds requires specific decisions by the project board.

The project costs and the relevant reserve stated in this Article are calculated on the basis of a current station availability during the period indicated in the time schedule in Appendix E. Cost increase due to interrupted availability of the Marviken plant shall be borne by the AES, provided that the interruptions are not caused by the performance of the experiments.

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The contracting parties undertake to contribute to the total budget as follows:



		Skr Million	voting %	
a)	USNRC	3.5	12.5	} the program budget
b)	EPRI	3.5	12.5	
c)	EDF	2.8	10.0	
d)	CEA	2.8	10.0	
e)	KEMA	1.4	5.0	
f)	THE NORDIC PARTIES (Including AES)	7.0	25.0	
g)	AES	<u>7.0</u>	<u>25.0</u>	
		28.0	100.0	
h)	AES (balance)	<u>2.0</u>		
		30.0		

The sum of Skr 9 Million (g and h) at the present time covered by AES, is designated for future participants as yet unidentified. The financing of those contributions (g and h) still constitutes 25 % of the voting strength only.

The particular future parties can be selected by AES without consultations with the contracting parties.

The funds to be provided are subject to annual appropriations according to the rules given in Article XI:3.

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The project shall be debited with the cost of the personnel of the project staff supplied by the contracting parties under the conditions specified in Article VII and in Appendix D, where all personnel costs are given according to nominal AES wage codes, inclusive of statutory social dues, multiplied by 1.90. When project personnel are working outside their home organizations the project shall be debited with an additional per diem cost according to AES's rules. Costs for travels to and from the permanent residence of the personnel are paid by the respective home organization.

For services rendered by the parties upon order from the project using personnel not classified as project personnel and for material provided, the party shall be reimbursed for its full costs. Thus neither profit nor gain shall be included except in case of commercial products already on the market.

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4 When paying their financial contributions according to this Article VI the parties shall be entitled to deduct the costs for wages and per diem of project personnel according to Article VI:3.

5 Within four weeks after the end of each quarter of a year, the project manager shall present accounts for the project to the parties in summarized figures as to the costs incurred during the preceding quarter, and shall at the same time give a cost estimate for the current quarter.

The total actual cost for the project shall be accounted for within three months after the termination of the project.

6 Payments of contributions shall be made to AES and made available to the project in quarterly instalments on the basis of cost estimates and accounts as outlined under this Article VI:5, and quarterly reports.

The first advance payment shall be due within four weeks after the signing of this Agreement by all the parties and shall cover all the costs accounted for in the budget incurred up to the date of signature as well as the costs calculated for the rest of the current quarter. The subsequent advance payments are due within two weeks upon receipt of the quarterly cost accounts/ cost estimates.

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## VII SUPPLY OF PERSONNEL

- 1 During the project, the contracting parties shall, within the total budget, contribute to the project staff by supplying project personnel, as specified in Appendix D:3.

The project staff shall be appointed and seconded to the project by the contracting parties with the agreement of the project manager. The project manager shall be responsible for the duly qualified composition and efficiency of the project staff and shall have the right to take the appropriate measures to that effect. The project personnel will remain in the employment of their respective employers. The project staff, during their participation in the project, work under the authority of the project manager and shall be subject to the general working rules of AES such as ordinary working hours, vacation periods, etc.

- 2 The parties shall, if considered necessary by the board, maintain at the disposal of the project their project personnel for a period not more than three months in excess of the period stated in Appendix E. Such prolongation shall fall within the total budget and be credited according to the same rules as set out in Article VI:3.

VIII INFORMATION AND USE OF RESULTS, INCLUSIVE OF INVENTIONS

- 1 The results of the project shall be presented in the form of appropriate progress and final reports as specified in Appendix F.
- 2 All information derived from the execution of the project shall be made available to the contracting parties.
- 3 Prior to approval by the parties for publication, the information will be freely available to government authorities, organizations and companies in the country of each contracting party for their own use but not for publication by discretion of the respective parties. When required by administrative procedure in its country, each party may on its own responsibility disseminate or otherwise make use of information from the experiments.

The project will not bear any responsibility for such information as is not approved by the project board and which is not contained in the project reports as specified in Article VIII:1. In such cases the party should carefully consider the possible necessity of due reservations regarding the validity of the information with respect to the final total evaluation of the project results. During the period covered by the Agreement the parties may not without the consent of the project board supply information on project progress and results to organizations and companies outside the countries of the contracting parties.

- 4 Prior to the termination of the project, the project board must decide upon such results that may not be published.
- 5 Patentable or not patentable inventions made in the course of the project work shall be made available to the project, the party responsible for any such invention undertakes to give the right of use to the project, free of cost charge.

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- 6 Patentable inventions made in the course of the project work shall be considered made by the inventor as member of his home organization and patent matters shall be settled by the respective party according to the laws and regulations in the respective country, provided, however, if a party decides to file patent applications for an invention in one or several countries, the other parties shall be granted non-exclusive royalty-free licences to use the invention in such countries, including the right to grant sublicences to organizations and companies of their own country.
- 7 Each party waives any and all claims against the other parties for compensation, royalty or award, as regards any inventions or discoveries, made in the course of, or under this Agreement and releases the other parties with respect to any and all such claims, including any claim under the provisions of the applicable employer-employee invention legislation of the participating countries.
- 8 When one party has previously been granted or has applied for patents on an invention which could have significance for carrying out the project, the right of use this invention shall be granted the project free cost charge by the respective party.
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LIABILITY

- 1 AES undertakes to maintain during the whole project period the following insurance protection.
  - Insurance of the equipment procured for the experimental work against fire, explosion, water pipe damage and/or damage to machinery, amounting to a total coverage of Skr 10 Million
  - Insurance of the data records against loss through fire, theft, and transport accidents, amounting to a coverage of Skr 1 Million
  - Liability insurance covering personal injury and damage to property which befall the project personnel or third parties and for which a party to this Agreement or its personnel is responsible according to the applicable general rules. This insurance shall amount to a total coverage of Skr 3 Million for personal injury and a total coverage of Skr 1 Million for damage to property.
- 2 The cost for the above insurances shall be paid by the project as a part of the project cost.
- 3 The non-Swedish parties shall not be liable for any indemnification in excess of the amounts stated above. In case of excess AES shall be liable for any indemnification whatsoever.
- 4 This Agreement shall not limit any right to compensation on the basis of the general rules which are applicable in each case for the indemnification of personal injury or damage to property.

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## ACCEPTANCE OF FURTHER PARTICIPANTS

If other interested parties wish to join the project, the project board will examine the economic and other conditions of such participation and prepare a recommendation to the original contracting parties. Acceptance of further participants requires unanimous agreement by the project board. This paragraph applies to program participation beyond the present budgeted funding level.

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XI UNFORESEEN OCCURRENCES AND RIGHT TO WITHDRAW

- 1 Should unforeseen occurrences put in doubt the achievement of the project objectives within the agreed time, budget or cost schedule, the project manager shall immediately report to the project board, which shall decide on the continuation. A decision to continue shall require the unanimous agreement of the parties, and must include necessary amendments of the time, budget or cost schedule as the case may be.
- 2 If a decision to continue the project cannot be reached then any party to this Agreement shall have the right to withdraw from the Agreement. In such a case the withdrawing party is under an obligation to fulfil its share of project commitments which originate prior to the date of the withdrawal. The withdrawing party has the right to all information produced by the project up to the date of withdrawal. The information will be supplied in the form existing at the date of withdrawal without processing of the data.
- 3 In case that governmental or board of director approval is not obtained for a certain party to commit the succeeding years financial contribution, that party shall notify the project board as soon as possible, but not later than 30 days prior to the end of the fiscal year of that party. The project board shall meet on short notice to consider the situation, and in the event a decision is made to terminate the project, cancellation costs, not to exceed the total budget costs shall be shared by all parties, including the terminating party, proportionally to the funding distribution in VI:2.

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## ARRANGEMENTS FOR TERMINATION OF THE PROJECT

Equipment purchased within the project budget is regarded as being the property of the parties, each having a share in the percentage proportion to the financial contribution as given in Article VI:2.

After the termination of the project such equipment which can still be utilized for other purposes will be evaluated under consideration of normal depreciation. AES will make up a list of such equipment and its value for approval by the project board.

If AES with the approval of the project board decides to retain such equipment, the other parties will be credited in proportion to their financial grants.

The project board shall decide upon the disposal of such remaining equipment as is not retained by AES.

When selling equipment after the termination of the experiments, the costs for dismantling of such equipment and associated restoration shall be paid from the income of the sale of such equipment. The estimated economic net result shall be approved by the board before any action is taken in such matters.

In case of a decision to terminate the project prior to its fulfilment, under the circumstances described in Article XI, AES undertakes to cancel the remaining delivery contracts and other remaining commitments for the project as soon as possible.

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## XIII CONVENANT AGAINST CONTINGENT FEES


The parties warrant that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the parties for the purpose of securing business. In case of any breach or violation of this warranty, the parties shall have the right to annul this contract without liability or at their discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

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## XIV OFFICIALS NOT TO BENEFIT

No member of or delegate to the US Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.



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## DISPUTES

Any disputes between the parties involving other than NRC concerning the application or interpretation of this Agreement, that are not satisfactorily settled through consultation, shall be submitted to Swedish court or, if so requested by one of the parties concerned, be referred for final settlement by arbitration in Stockholm according to the Swedish Act on arbitrators. With regard to any such dispute to which NRC is a party that are not satisfactorily settled through consultation, such disputes shall be decided by a court rather than by arbitration.

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This agreement has been signed in nine copies, one for each party.

*Paris, May 2nd* 1977

For COMMISSARIAT A L'ENERGIE  
ATOMIQUE  
FRANCE

*André Sarrus*

..... 1977

For ELECTRICITE DE FRANCE  
FRANCE

.....

*June 17* 1977

For ELECTRIC POWER RESEARCH  
INSTITUTE  
USA

*Chas. E. Sten*

*June 17* 1977

For UNITED STATES NUCLEAR  
REGULATORY COMMISSION  
USA

*John L. Smith*

..... 1977

For FORSØGSANLÆG RISØ  
DENMARK

.....

..... 1977

For TECHNICAL RESEARCH CENTRE OF FINLAND  
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SWEDEN

.....  
*Raymond*

..... 1977  
For N.V TOT KEURING VAN ELECTRO-  
TECHNISCHE MATERIALEN  
THE NETHERLANDS  
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