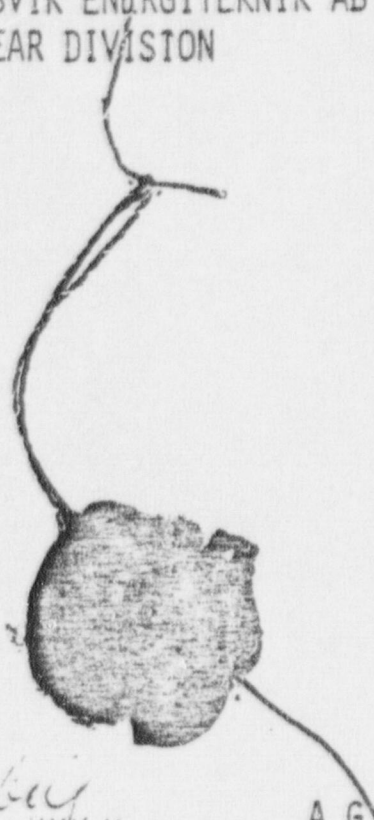


MARVIKEN
STUDSVIK ENERGI TEKNIK AB
NUCLEAR DIVISION



Handwritten signature or initials, possibly 'L. R. R. R.'

A G R E E M E N T

THE MARVIKEN AEROSOL TRANSPORT TESTS (MX-V-ATT)

1982-12-08



Handwritten text: A1154

A G R E E M E N T

between

ONTARIO HYDRO, CANADA
(hereinafter called "OH")

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

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

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

COMITATO NAZIONALE PER LA RICERCA E PER LO SVILUPPO
DELL'ENERGIA NUCLEARE E DELLA ENERGIE ALTERNATIVE, ITALY
(hereinafter called "ENEA")

JAPANESE GROUP, Japan
(hereinafter called "JG")

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

STATENS KÄRNKRAFTINSPEKTION, SWEDEN
(THE SWEDISH NUCLEAR POWER INSPECTORATE)
(hereinafter called "SKI")

UNITED KINGDOM ATOMIC ENERGY AUTHORITY, UNITED KINGDOM
(hereinafter called "UKAEA")

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

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

STUDSVIK ENERGITEKNIK AB, SWEDEN
(hereinafter called "STUDSVIK")

hereinafter jointly called "the contracting parties"

concerning

A JOINT PROJECT FOR PLANNING, DESIGN, EXPERIMENT PREPARATION
PERFORMANCE AND REPORTING OF REACTOR SAFETY EXPERIMENTS CONCERNING
TRANSPORT OF VAPORS AND AEROSOLS THROUGH REACTOR SYSTEMS
(hereinafter called "the project")

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PREAMBLE

Considering

- the generally acknowledged need for large scale experimental safety studies related to the transport behaviour of vapors and aerosols produced from overheated core materials within typical water reactor systems,
- the possibilities offered by the Marviken facility for such large scale experiments, already demonstrated in international projects concerning full scale containment tests, critical flow tests and jet impingement tests performed since 1972,

the contracting parties have this day agreed as follows:

The purpose of this Agreement is to establish cooperation between the contracting parties in a project using jointly the Marviken facility for certain safety experiments. The project covered by this Agreement comprises a joint program for planning, design, experiment preparation, performance and reporting of large scale reactor safety experiments concerning the transport of vapors and aerosols through water reactor systems.

SCOPE OF THE PROJECT

The scope of the project is to plan, design, prepare, perform and report a series of tests on vapor and aerosol transport behaviour for water reactor safety at Marviken within the framework of an international cooperation.

The project will be performed according to Appendices A - G being part of the Agreement and will aim at providing the contracting parties a data base on the transport of vapors and aerosols through reactor systems on a large scale.

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

<u>Appendix A</u>	Program description
<u>Appendix B</u>	Instrumentation description
<u>Appendix C</u>	Organization of the project
<u>Appendix D</u>	Budget
<u>Appendix E</u>	Time schedule
<u>Appendix F</u>	Reporting
<u>Appendix G</u>	Contribution of funds

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

Phase A	Preplanning
Phase B	Fission and corium experiment preparations
Phase C	Performance of fission tests. Data collection and reduction, reporting of data and interpretation of results. Corium experiment preparations
Phase D	Performance of corium tests. Data collection and reduction, reporting of data and interpretation of results
Phase E	Final reporting of results

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 STUDSVIK 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 two 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 deputies upon proper and timely notification of the matter to be voted on. Should it be necessary to revise the program, the board should be prepared to meet at short notice.

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

2

STUDSVIK shall appoint the 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 programs of work, including cost and time schedules.

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 Advisory Committee (TAC), 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 TAC. 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.

STUDSVIK shall appoint the chairman of the TAC. 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 STUDSVIK undertakes to render the necessary technical and administrative services and to produce the material for implementation of the project. Legal acts relating to the carrying out of the project shall be performed by STUDSVIK on behalf of the contracting parties.

- 6 For the financial management of the project STUDSVIK 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 STUDSVIK, and if so requested by any of the other parties, by auditors elected by them.

V

TIME SCHEDULE

1

The project start is set to July 1, 1982 and it shall be carried out in accordance with the time schedule in Appendix E.

2

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.

Expenditures 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 SEK 43.5 million. This amount includes all foreseen wage and price increases for the programs planned to be carried out and specified in Appendices A - F.

As a reserve fund to cover

- a project management operational reserve fund,
- additional costs due to alterations in the technical program,
- other unforeseen cost increases and
- unforeseen inflationary cost increases,

the parties undertake jointly to make available an amount of SEK 9.5 million, thereby constituting a total budget of SEK 53.0 million.

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

Funds obtained through the acceptance of further participants according to Article X are considered to be ordinary funds and shall be consumed before the reserve funds are utilized.

The project costs and the relevant reserve specified 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 increases due to interrupted availability of the Marviken plant shall be borne by STUDEVIK, provided that the interruptions are not caused by the performance of the experiments.

2

The contracting parties undertake to contribute to the project as specified in Appendix G, which also shows the votes and the Agreement copy number certified by the Notary Public.

Any funds committed to the project prior to the completion of this Agreement are included in the funds given above.

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

3

The project shall be debited 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 STUDSVIK wage codes, inclusive of statutory social dues, multiplied by 1.85. When project personnel are working outside their home organizations, the project shall be debited an additional per diem cost according to STUDSVIK'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.

4

When paying their financial contributions according to Article VI:2 the parties shall be entitled to deduct the costs for wages and per diem cost 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 STUDSVIK and be made available to the project in quarterly instalments on the basis of cost estimates as outlined under Article VI:5, and quarterly reports.

The first occasion for the invoicing of the individual contributions shall occur when Contracting Parties representing at least 85 % of the budgeted contributions have signed the present Agreement.

The first advance payment 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.

All invoices shall be paid net within 60 days. Late payment will be assessed interest at the commercially available rate to STUDSVIK (Swedish primary discount rate plus 4 %, currently 1.75 % monthly).

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:4.

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 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 STUDEVIK 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 may be made available to government authorities, organizations and companies in the country of each contracting party for their own use but not for publication at the 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 contracting parties may, within their countries when consistent with their requirements, publish information derived from the project at the completion of the project. Prior to any such publication the contracting parties shall submit the information to the project board for review and comment and allow sixty days for response.

The project will not bear any responsibility for information which 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 shall decide upon the principles of publishing the results.

5 Patentable or not patentable inventions made as part 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.

6 Patentable inventions made as part of the project work shall be considered to be made by the inventor as a 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. However, if a party decides to seek a patent in one or several countries for an invention made within the project, the other parties shall be granted non-exclusive royalty-free licenses under such patents including the right to grant sub-licenses to organizations and companies of their own country.

Patent matters arising from any such invention made jointly by inventors of different home organizations shall be settled by the organizations concerned consistent with the rights and obligations required by this agreement.

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 using this invention shall be granted to the project free of cost charge by the respective party.

1

STUDSVIK 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 SEK 10 million
- Insurance of the data records against loss through fire, theft, and transport accidents, amounting to a coverage of SEK 1 million
- Liability insurance covering personal injury, including injury resulting in death, 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 per incident/accident case of SEK 5 million for personal injury and a total coverage per incident/accident case of SEK 2 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 STUDSVIK 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.

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.

- 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 on how 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 unanimous 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 of data existing at the date of withdrawal without processing of the data.
- 3 Should a party fail to obtain the necessary approval from that party's government or board of directors to pledge the following year's financial contribution, then the 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 at short notice to consider the situation, and if a decision is made to terminate the project then cancellation costs, not exceeding the total budget costs, shall be shared by all parties, including the terminating party, proportionally to the funding distribution in Article VI:2.

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 that is proportional to the financial contribution as given in Appendix G.

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

If STUDSVIK 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 that is not retained by STUDSVIK.

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 decision by the project board to terminate the project prior to its fulfilment, under the circumstances described in Article XI, STUDSVIK undertakes to cancel the remaining delivery contracts and other remaining commitments for the project as soon as possible.

The parties warrant that no person or selling agency has been employed or retained to solicit or secure 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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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.

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 a 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 disputes 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.

SIGNING PROCEDURE

The procedure of signing the present Agreement shall be as follows:

1. Each Contracting Party shall sign the Agreement copy, which is assigned to the Contracting Party as of Appendix G. Adequate assurance that all copies, which are provided with number 1 - 20 are identical in wording is given hereunder by the signature of the Notary Public at Nyköping, Sweden.
2. After signing, each copy shall be sent back to the Project Manager, who collects the signed copies and brings them to the Notary Public for provision of adequate assurance that all copies have been duly signed by all Contracting Parties as listed hereabove on page 1.
3. Following the due notification by the Notary Public to confirm the completion of the signing procedure, Contracting Parties' individual copies are promptly to be sent back to the Contracting Parties for their own filing.

END OF ARTICLES

SIGNATURE PAGE

The present Agreement is number . of 20 numbered copies as listed in Appendix G. The copies are identical in wording, which is hereby assured. (Name and seal of Notary Public, Nyköping, Sweden).

Date

For

Agreement Document copies - identical in wording - have been signed by all Parties listed on page 1 and in Appendix G of the present Agreement, which is hereby assured. (Name and seal of Notary Public, Nyköping, Sweden).

Date: March 4, 1983

For: U.S. Nuclear Regulatory Commission



William J. Dircks
Executive Director for Operations