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AGREEMENT
ON RESEARCH PARTICIPATION AND TECHNICAL EXCHANGE
BETWEEN
THE UNITED STATES NUCLEAR REGULATORY COMMISSION (USNRC)
AND
THE FEDERAL MINISTER FOR RESEARCH AND TECHNOLOGY OF THE
FEDERAL REPUBLIC OF GERMANY (BMFT)
IN
USNRC THERMAL HYDRAULIC RESEARCH PROGRAMS
AND BMFT THERMAL HYDRAULIC RESEARCH PROGRAMS
COVERING A FIVE-YEAR PERIOD

The Contracting Parties

Considering that the United States Nuclear Regulatory Commission (USNRC) and the Federal Minister for Research and Technology of the Federal Republic of Germany (BMFT):

1. Have a mutual interest in cooperation in the field of reactor safety research;
2. Have as a mutual objective improving and thus ensuring the safety of reactors on an international basis;
3. Have as a mutual objective the achievement of full reciprocity in the exchange of technical information in the field of reactor safety research;
4. Have entered into a Technical Exchange and Cooperation Arrangement in the Field of Research and Development on Reactor Safety, dated the thirtieth day of April 1981;
5. Have expressed their intention to participate cooperatively in the USNRC-funded code development, assessment and application programs at Los Alamos National Laboratory, Idaho National Engineering Laboratory, Brookhaven National Laboratory and Sandia National Laboratory, and the BMFT authorized and supported and/or funded programs at Kraftwerk Union (KWU) and Gesellschaft fuer Reaktorsicherheit (GRS) where these programs include thermal and hydraulic code assessment and application programs and analysis of plant transient test data;

Have AGREED as follows:

ARTICLE I - PROGRAM COOPERATION

The USNRC and the BMFT, in accordance with the provisions of this Agreement and subject to applicable laws and regulations in force in their respective Countries, will join together for cooperative research in thermal-hydraulic programs funded by the USNRC and programs supported by BMFT and conducted at KWU and GRS as stated above.

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ARTICLE II - SCOPE OF AGREEMENT

A. Scope of Responsibility - USNRC

1. The USNRC will provide KWU and GRS, the designated agents of the BMFT, access to TRAC-PF1/MOD1, TRAC-BD1/MOD1, TRAC-BF1 and RELAP5/MOD2 codes. These codes are described in Appendix I. Upon receipt of an official request from KWU and GRS for a specific version of a code, the USNRC will authorize the transmittal of the tape and available documentation by its appropriate contractor. It is understood that only major versions of the above codes are fully documented and will be assessed.
2. Upon request to the USNRC by the BMFT, other BMFT contractors, as mutually agreed, on a case-by-case basis, may have access to computer code versions in this program required by the BMFT to carry out nuclear reactor safety research evaluations that may require the use of these codes. These codes are described in Appendix I. The USNRC will have access to all research results, though they may be conducted under different programs, obtained through the use of these codes and will have the right of publishing BMFT or BMFT contractor reports describing these research results as NUREG/CR reports, so long as they do not contain proprietary or other confidential or privileged information, giving proper credit to the BMFT and its contractors. Proprietary or other confidential or privileged information will be treated in accordance with the provisions of Article IV. Reports will be translated by the USNRC, except for those reports under paragraph B.2 below, and reviewed by the BMFT or its contractor for their accuracy before their publication.
3. The USNRC codes discussed in paragraph A.1 above, will be assessed at U.S. laboratories as well as by various foreign organizations through bilateral agreements. Based on the assessment results and funding availability, the USNRC may improve these codes and may create new improved versions. The USNRC will provide KWU and GRS access to these improved versions of TRAC-PWR, TRAC-BWR and RELAP5 upon official KWU and GRS request. These interim and developmental versions may not have all necessary documentation and their usefulness may be limited.
4. The USNRC will invite KWU, GRS and other BMFT contractors or agents, as requested by the BMFT, to participate in code assessment meetings sponsored by the USNRC.

B. Scope of Responsibility - BMFT

The BMFT designates KWU and GRS (and/or other BMFT contractor, as mutually agreed, on a case-by-case basis) as its agents in undertaking the following programs:

1. KWU will perform ten code assessment studies per year (fifty for duration of this Agreement) as mutually determined by the USNRC and KWU.

Three calculations per year (fifteen for duration of this Agreement) will be performed simulating KWU plant transients for PWRs and BWRs. The remaining calculations will be performed for tests performed in integral and separate effects test facilities. Most of these facilities will be German facilities but a limited number of calculations will also be performed for other test facilities. The selection of code versions, tests, scope, and schedule for performing the assessment work will be mutually determined.

2. KWU will publish code assessment reports in English. Code assessment reports will contain comparisons of code calculations and test data, explanations of reasons for differences between predictions and test data, sensitivity studies (when needed, as mutually agreed upon, with different nodalizations and/or code updates as suggested and implemented by KWU), comparisons showing the accuracy of predictions of selected key parameters (as mutually agreed upon for a specific transient), suggestions for user guidelines for accurate and fast calculations, suggestions for further code improvements, input listings, and conclusions on capabilities of the code. Most of the code assessment reports will be available in open literature. If a report contains proprietary or other confidential or privileged information, KWU will restrict the report as per classifications described in Appendix II. The USNRC will have nonexclusive rights of publishing these assessment reports containing nonproprietary information as NUREG/CR reports with proper reference to KWU. Formats for abstracts will be specified by the USNRC.
3. KWU group (KWU, Siemens, Interatom and RBU), GRS and other BMFT contractors will keep the USNRC codes in confidence and not disseminate them even though they may contain KWU and GRS updates, except in accordance with provisions of Article IV.C. The part of the code manual containing a description of the models and results of developmental assessment need not be held in confidence. KWU and GRS group may use these codes to address licensing and safety issues in plant calculations and may publish results of these calculations. If KWU or GRS performs plant calculations:
 - a. KWU and GRS respectively will supply the USNRC with selected reports describing the experience gained in application of the codes;
 - b. KWU and GRS respectively will inform the USNRC of new safety issues addressed through application of the codes;
 - c. Upon USNRC request, KWU and GRS respectively will supply the USNRC with relevant reports addressing special safety issues of mutual interest gained in application of the codes.
4. KWU will provide the USNRC with reports listed in Appendix III. These reports describe results of code assessment and application work performed by KWU. The reports, after being translated into English by the USNRC, will be transmitted to KWU for review of their correctness. The USNRC will have the nonexclusive right of publishing these reports as NUREG/CR reports with proper reference to KWU.

5. If KWU, GRS or any other BMFT contractor make changes in Fortran statements in the codes described in Appendix I, the USNRC will have the right of access to these statements. These statements may have been changed under this program or another program and may describe error corrections and improved models or may constitute new code versions. The USNRC will have the right of updating the original codes based on these statements and will have the exclusive right of disseminating any new versions of these codes to other parties. Sufficient information (in English) on these changes will be provided by KWU, GRS or any other BMFT contractor making changes. The statements will be transmitted in a convenient format (machine-readable format if needed) as mutually agreed upon.
6. KWU will transmit code updates on check valve dynamics (added to TRAC-PF1) and updates on extension of fluid properties at high pressures to the selected USNRC contractor.
7. Although the USNRC in general does not foresee the need for obtaining experimental data used in calculations in paragraph B.1, the USNRC will have the option to request specific test data on a case-by-case basis. In these cases, KWU will provide data in reports and in machine-readable format as mutually agreed. Proprietary or other confidential or privileged information will be treated in accordance with the provisions of Article IV. The data reports should contain:
 - a. Description of facility or plant;
 - b. Test results;
 - c. Instrumentation description, location and accuracies; and
 - d. Interpretation of test results.

The USNRC will have nonexclusive rights of publishing these data reports containing nonproprietary information as NUREG/CR reports with proper reference to KWU.

ARTICLE III - PATENTS

- A. With respect to any invention or discovery made or conceived during the period of and in the course of or under this Agreement for BMFT participation in the thermal-hydraulic programs, the USNRC on behalf of the United States Government as the Recipient Party and the BMFT as the Assigning Party, and for USNRC participation in the thermal-hydraulic programs, the BMFT as the Recipient Party and the USNRC as the Assigning Party, hereby agree that:
 1. If made or conceived by personnel of one party (the Assigning Party) or its contractors while assigned to the other party (the Recipient Party) or its contractors:
 - a. 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

- b. 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.

- 2. If made or conceived other than by personnel in subparagraph 1 above and while in attendance at meetings or when employing information which has been communicated under this Agreement by one party or its contractors to the other party or its contractors, the party making the invention shall acquire all right, title and interest in and to any such invention, discovery, patent application or patent in all countries, subject to the grant to the other party of a royalty-free, non-exclusive, irrevocable license, with the right to grant sublicenses in and to any such inventions, discovery, patent application or patent in all countries, for use in the production or utilization of special nuclear material or atomic energy.

- B. Neither party shall discriminate against citizens of the country of the other party with respect to granting any license or sublicense under any invention pursuant to paragraph A above.
- C. Each party waives any and all claims against the other party for compensation, royalty or award as regards any such invention 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 U.S. Atomic Energy Act of 1954, as amended, and the German Labor Law (Arbeitnehmererfindergesetz) of July 25, 1957.

ARTICLE IV - EXCHANGE OF SCIENTIFIC INFORMATION AND USE OF RESULTS OF PROGRAM

- A. Both parties agree that, pending the grant by the transmitting party of approval to publish, information developed or transmitted under this Agreement will be freely available to governmental authorities and organizations cooperating with the parties. Such information, except as noted below in paragraphs B and C, may, as required by the administrative procedure in its own country, also be made available to the public by either party through customary channels and in accordance with the normal procedures of the parties.
- B. It is recognized by both parties that in the process of exchanging information, or in the process of executing this Agreement, the parties will provide to each other proprietary or other confidential or privileged information. Such information, including trade secrets, inventions, patent

information, and know-how, made available hereunder and which bears a restrictive designation, or stated in an official document as being proprietary, confidential, or privileged, shall be respected by receiving parties and shall not be used for commercial purposes or made public without the consent of the transmitting party. Such information is defined as:

1. Of a type customarily held in confidence by commercial firms;
2. Not generally known or publicly available from other sources;
3. Not having been made available previously by the transmitting party or others without an agreement concerning its confidentiality;
4. Not already in the possession of the receiving party or its contractors; and
5. Held in confidence by the owner.

C. Recognizing that proprietary or other confidential or privileged information as defined above will be necessary for the execution of this Agreement, such information shall be clearly marked or stated by the transmitting party and be used only in the furtherance of nuclear safety programs by the receiving party in its own country. Its dissemination will, unless otherwise mutually agreed, be limited as follows:

1. To persons within or employed by the receiving party or designated receiving party and to other concerned government agencies of the receiving party;
2. To prime or subcontractors of the receiving party, for use only within the country of the receiving party and within the framework of its contract(s) related to nuclear safety;
3. On an as-needed, case-by-case basis, to organizations licensed by the USNRC if the USNRC is the receiving party, to construct or operate nuclear reactors, provided that such information is used only within the terms of the license and in work relating to the subject matter of the information so disseminated;
4. To contractors of licensed organizations in subparagraph 3 receiving such information, for use only in work within the scope of the license; and
5. To the Electric Power Research Institute (EPRI) if the USNRC is the receiving party of the KWU information, on a case-by-case basis, as jointly agreed among the USNRC, KWU and EPRI.

PROVIDED that the information disseminated to any person under subparagraphs C.2, C.3, C.4, and C.5 above shall be pursuant to an agreement of confidentiality.

D. The application or use of any information exchanged or transferred between the parties under this Agreement shall be the responsibility of the party receiving the information, and the transmitting party does not warrant the suitability of the information for any particular use or application.

- E. The BMFT and BMFT contractors will have the right of access to the technical reports developed under this Agreement as long as the reports do not contain proprietary or other confidential or privileged information. If BMFT needs reports containing proprietary or other confidential or privileged information that belongs to KWU, BMFT will make a separate arrangement with KWU outside of this Agreement.

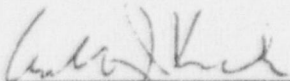
ARTICLE V - ADMINISTRATIVE UNDERSTANDINGS

- A. The BMFT designates KWU, GRS and other contractors, as mutually agreed, on a case-by-case basis, as its agents in executing this Agreement.
- B. Under special circumstances the BMFT or BMFT designated agents and the USNRC may desire to send one or more technical personnel for a short period of time to review or investigate a specific technical problem under this program. Short term visits of technical personnel may be arranged by mutual agreement on a case-by-case basis. These may include meetings for programmatic discussions and may involve parties from different countries. The USNRC and the BMFT or BMFT designated agents will provide the technical personnel making such visits with data and documents (excluding proprietary or other confidential or privileged information) concerning the technical problem to the best of their ability within the constraints of available manpower and minimum interference with the program.
- C. The Agreement specifies computer codes (Appendix I), proprietary categories (Appendix II) and current documents (Appendix III) that are to be made available to the USNRC and the BMFT and/or BMFT designated agents.
- D. The BMFT and BMFT designated agents and the USNRC will endeavor to select technical personnel for assignment in the program who can contribute positively to the program. The technical personnel assigned to the program for extended periods will be considered visiting scientists (nonsalaried) within the program and will be expected to participate in the conduct of the analysis and experiments of the program as mutually agreed.
- E. Travel expenses, salaries and living expenses of the visiting technical personnel under paragraphs B and D above shall be provided by their respective organizations. Computer costs, if any, will be negotiated on a case-by-case basis.
- F. Both partners will have access to all reports written by their partner's technical personnel assigned to the respective projects which derive from their participation in those projects.
- G. Administrative details concerning questions such as security, indemnity and liability related to the assignees will be negotiated and will appear in personnel assignment agreements between USNRC contractors and BMFT contractors.

ARTICLE VI - FINAL PROVISIONS

- A. Any dispute between the parties concerning the interpretation or application of this Agreement shall be settled by negotiation.
- B. This Agreement shall also apply to Land Berlin, provided that the Government of the Federal Republic of Germany has not made a contrary declaration to the Government of the United States within three months from the date of entry into force of this Agreement.
- C. This Agreement shall enter into force upon the last signature of the parties and shall remain in force for a period of five years. However, provisions of Article II.B.3 and Article IV will remain in force indefinitely unless changed by mutual agreement.
- D. Either party may withdraw from the present Agreement after providing the other party written notice at least six months prior to its intended date of withdrawal. However, the USNRC is providing the most advanced code technology to KWU, an agent of the BMFT, at the beginning of this cooperative program with the understanding that KWU will perform fifty code assessment studies over a period of five years. If the BMFT (and its agent KWU) withdraws from this Agreement, the BMFT agrees to indemnify the USNRC for the unfinished code assessment work. The average cost of a code assessment calculation and its analysis is approximately 50,000 U.S. dollars. The total indemnification will not exceed 1,000,000 U.S. dollars.
- E. The USNRC may, at its option, participate in a continuation of this program beyond the five-year period of this Agreement under mutually acceptable terms and conditions.
- F. The BMFT may, at its option, participate in a continuation of this program beyond the five-year period of this Agreement under mutually acceptable terms and conditions.

FOR THE UNITED STATES
NUCLEAR REGULATORY COMMISSION

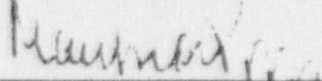
BY: 

TITLE: Executive Director for
Operations

DATE: January 22, 1985

PLACE: Bethesda, MD, USA

FOR THE FEDERAL MINISTER FOR
RESEARCH AND TECHNOLOGY OF
THE FEDERAL REPUBLIC OF GERMANY

BY: 

Deputy Director General
TITLE: Energy and Safety

DATE: February 6, 1985

PLACE: Bonn, FRG