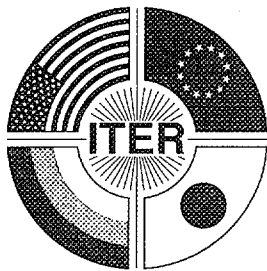




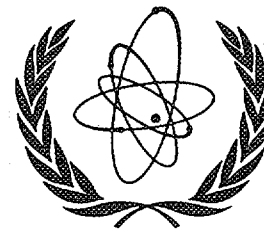
## INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR



## ITER EDA NEWSLETTER

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**PARTIES WORKING ON CONTINUATION OF ITER EDA**

by Dr. M. Roberts, Chair, CPs



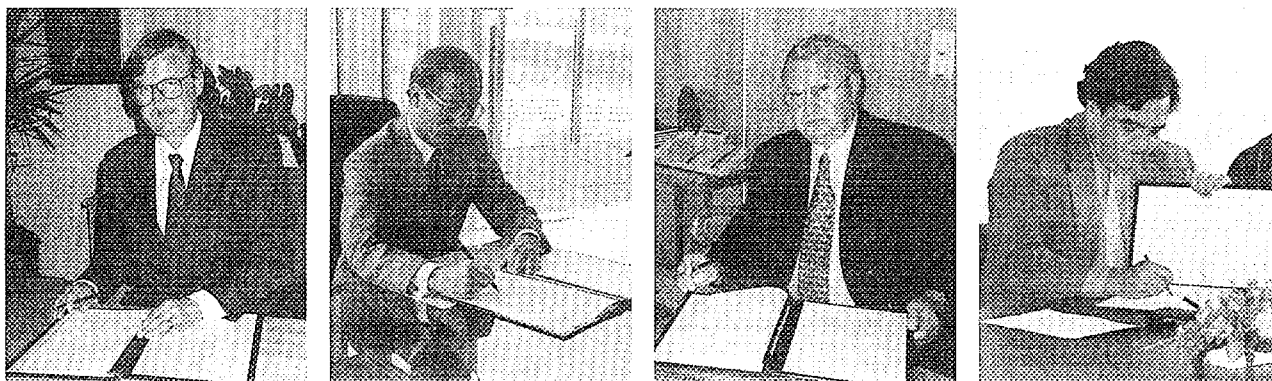
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The outcome of the Parties' Explorations, begun last year and completed in February, 1998, was a proposed text of the Amendment to the ITER EDA Agreement extending the EDA for three years, and a set of Understandings to aid in the implementation of the extended work. Following the negotiation at the end of the Explorations, each Party sought permission to sign the Amendment. Box 1 contains the text of the Amendment, while Box 2 contains the associated Understandings accepted by the Parties during the negotiation. Before 21 July 1998, the original termination date of the EDA Agreement, each of the four Parties had authority to sign the Amendment and was prepared to sign it. By 21 July 1998, RF, EU and JA had signed the Amendment. With regard to the US, the Executive Branch of the US Government was strongly advised by the US Congress (the US Government's Legislative Branch) not to sign the Amendment.

Following consultations between these Branches of the US Government, two actions were taken by the US. First, USDOE Secretary Bill Richardson signed a unilateral agreement on continued US participation for one year in the process established by the ITER EDA Agreement, subject to the availability of appropriated funds. This agreement, signed in the presence of the IAEA Director General, the DG of the EC Directorate General for Energy Benavides, JA Ambassador Ikeda and RF Minister Adamov, is shown in Box 3.

Shortly after this agreement was signed, the US Congress acted on the USFY99 budget request, which had proposed continuation of US participation in the ITER EDA, requiring the US to complete its R&D tasks, particularly the Central Solenoid Model Coil, while providing for an orderly closeout of ITER activities. Consequently, the USDOE took actions to comply with Congress directions and the limited funding allowed for the completion and closeout. Box 4 contains the text of a letter from USDOE Director of Energy Research, Martha Krebs, to the other Parties and the IAEA Director General explaining the situation and actions being taken.

Based on these four documents, together with the ITER EDA Agreement, and the Record of Meeting from the ITER Meeting in Yokohama, the Parties are working together, at the appropriate level, to reach a consensus concerning continuation of the joint efforts in a manner respecting the constraints of each Party.



From the left: Ambassador Lundin (for EU), Ambassador Ikeda (for JA), Ambassador Sokolov (for RF) signing the amendment extending the EDA Agreement, and US Secretary of Energy Richardson signing the unilateral Agreement

AMENDMENT EXTENDING THE AGREEMENT AMONG THE EUROPEAN  
ATOMIC ENERGY COMMUNITY, THE GOVERNMENT OF JAPAN, THE  
GOVERNMENT OF THE RUSSIAN FEDERATION, AND THE GOVERNMENT OF  
THE UNITED STATES OF AMERICA ON COOPERATION IN THE ENGINEERING  
DESIGN ACTIVITIES FOR THE INTERNATIONAL THERMONUCLEAR  
EXPERIMENTAL REACTOR

The European Atomic Energy Community, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America ("the Parties"),

HAVING REGARD to the Agreement among the Parties on Cooperation in the Engineering Design Activities for the International Thermonuclear Experimental Reactor (ITER), concluded on 21 July 1992 ("the Agreement"), and the Protocol 2 to the Agreement concluded on 21 March 1994,

NOTING the progress achieved and the proposals made on approaches to continued joint implementation, all within the framework of the Agreement,

DESIRING to continue to work jointly within the framework of the Agreement to enable future decisions on construction and operation of ITER in accordance with Article 1 of the Agreement, and

ACTING in accordance with Articles 22 and 25 (2) of the Agreement,

HAVE AGREED to amend the Agreement AS FOLLOWS:

Replace "six years" in Article 25(1) by "nine years".

This Amendment shall enter into force upon signature of the Parties.

Done at Vienna on 16 June, 1998 in quadruplicate.

FOR THE EUROPEAN  
ATOMIC ENERGY COMMUNITY:

DATE: 30 JUNE 1998

FOR THE GOVERNMENT  
OF JAPAN:

DATE: 14 July 1998

FOR THE GOVERNMENT  
OF THE RUSSIAN FEDERATION:

DATE: 16 June 1998

FOR THE GOVERNMENT OF THE  
UNITED STATES OF AMERICA:

DATE:

## **UNDERSTANDINGS CONCERNING THE EXTENSION OF THE DURATION OF THE ITER EDA AGREEMENT**

### **I. Scope of Joint Technical Activities**

- 1) Site(s)-Specific Activities:
  - Site(s)-specific design adaptations and their cost estimates
  - Safety analysis and technical support for preparation of license applications
- 2) Prototype testing, design and R&D, including physics studies
- 3) Preparation of documentation for future procurement incorporating results of items 1) and 2) noted above

### **II. Parties' Support of the Joint Activities**

- 1) Site(s)-Specific Activities:

Every Party will have an interest and involvement in the work to be based on all site characteristics provided. The work, therefore, will be undertaken jointly and managed accordingly under the responsibility of the ITER Director within the EDA framework with the exception of the preparation by native speakers of documents required in the Host Party's/Country's language and formats.

The interested Parties will:

- provide by the time of IC-14 (July, 1998) site characteristics in line with the Site Requirements and Site Design Assumptions Document;
- enable on a timely basis informal dialogue with regulators for the purpose of preparing applications for licenses to build and operate ITER.

The Director and the concerned HTLs will start informal consultation so that, in light of the site characteristics provided by the interested Parties, tasks of I.1) above can appear in the Work Program to be submitted to IC-14 via the appropriate MAC meeting.

The design adaptations will be carried out with due emphasis on the control of the project's estimated cost.

- 2) General Support  
The Parties will:
  - maintain the JCT and undertake assigned tasks;
  - provide voluntary contribution in various areas, including consolidating the scientific basis for ITER operation, e.g., by taking advantage of the existing voluntary arrangements;
  - continue to provide JWSs and support enhanced interconnection.
- 3) Estimated Resources  
The estimated resources for the intended scope of work noted in I. above (beyond those already committed through Task Agreements) from the Director's proposals as supported by the Council (IC-12 ROD 6.1.1, Attachment 9) are the following:

JCT personnel	about 396 ppy	Joint Fund	about \$ 2.5 M/y
HT design effort	about 370 ppy	Technology R&D	about 175 kIUA (ITER units of Account)
CAD support	1 for each 4 designers		

Each Party will make its best efforts to provide its share of the resources (Articles 12 and 14) in fulfillment of its obligation in accordance with Article 17(1) of the Agreement.

### **III. Other Enabling Activities**

The Parties will also:

- 1) develop proposals and all necessary supporting information for the complete realization of ITER including a draft agreement for construction and operation and associated draft implementing arrangements;
- 2) adapt the structures and modes of JCT/HTs' operation with a view to launching an efficient start of future construction, if and when so decided;
- 3) near the end of the second year, jointly review the licensing preparations, cost estimates, organizational evolution, construction preparations and domestic situations and, thereupon, prepare a Joint Assessment for use by each Party.

### **IV. Arrangements in Force**

- 1) These Understandings will be in force during the extended period along with the previous sets of understandings, reached at the times of signing the Agreement and Protocol 2, unless otherwise determined among the Parties in writing.
- \*[2] The current arrangements involving Other Countries pursuant to Article 19 of the Agreement will continue to be in force.]  
\*[3] The IAEA will continue providing facilitations and assistance pursuant to Article 20 of the Agreement.]

### **V. Concluding Understanding**

The Parties will undertake the joint activities with a general intent to enable an efficient start of possible, future ITER construction, and do recognize the importance in this regard of pursuing preparatory efforts in all relevant domains.

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\* Pending confirmation by those concerned

**AGREEMENT ON CONTINUED UNITED STATES PARTICIPATION IN  
THE PROCESS ESTABLISHED BY THE AGREEMENT AMONG THE  
EUROPEAN ATOMIC ENERGY COMMUNITY, THE GOVERNMENT OF  
JAPAN, THE GOVERNMENT OF THE RUSSIAN FEDERATION, AND THE  
GOVERNMENT OF THE UNITED STATES OF AMERICA ON  
COOPERATION IN THE ENGINEERING DESIGN ACTIVITIES FOR THE  
INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR**

The Government of the United States of America,

Recognizing the desire of the European Atomic Energy Community, the Government of Japan and the Government of the Russian Federation to continue cooperation in the engineering design activities for the International Thermonuclear Experimental Reactor;

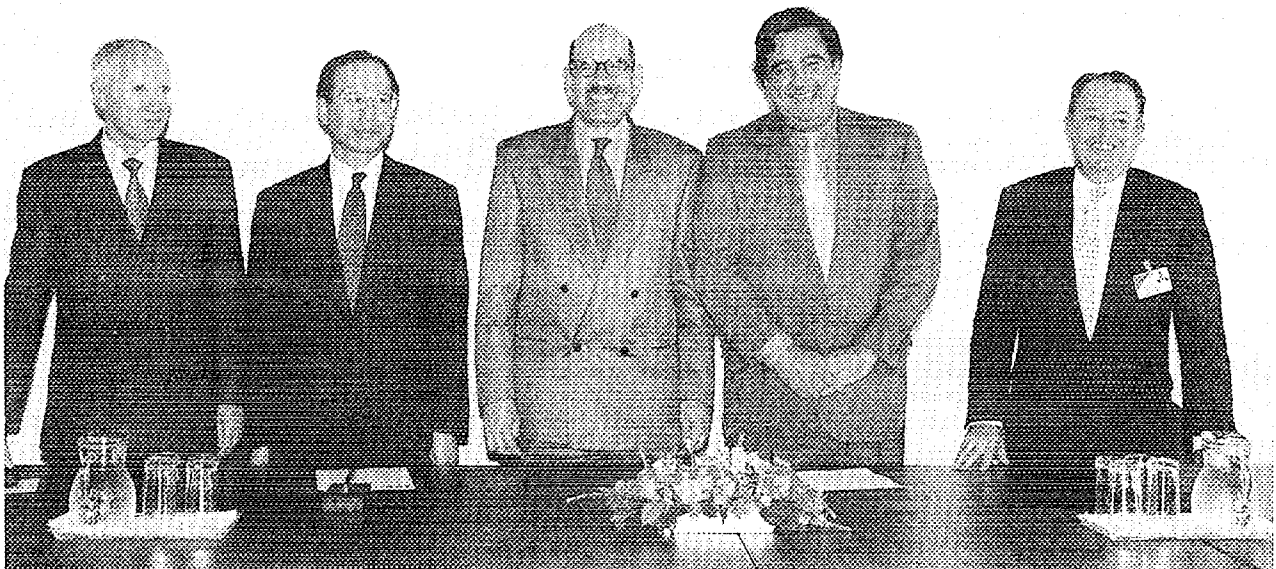
Desiring to complete ongoing activities and to negotiate a new agreement on international collaboration on fusion science;

Has agreed to continue participation in the ongoing process established by the Agreement for a period of one year from July 22, 1998.

Participation in this process will be subject to the availability of appropriated funds and is not a commitment to construct a device.

Done at Vienna on 22 September, 1998.

  
FOR THE UNITED STATES OF AMERICA



*Representatives of the ITER Parties with IAEA Director General at the IAEA General Conference. From the left: Minister Adamov (RF), Ambassador Ikeda (JA), IAEA DG ElBaradei, DOE Secretary Richardson (US) and DG Benavides, Directorate General for Energy, European Commission (EU)*



Department of Energy  
Washington, DC 20585

October 7, 1998

To: ITER Council Members and IAEA Director-General

The Department of Energy recognizes the success of the collaborative activities under the International Thermonuclear Experimental Reactor (ITER) Engineering Design Activities (EDA) Agreement, and wishes to ensure that the United States and its partners continue to benefit from these activities. For that reason, on September 22, 1998, Secretary of Energy Richardson signed the

“Agreement on Continued United States Participation in the Process Established by the Agreement Among the European Atomic Energy Community, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America on Cooperation in the Engineering Design Activities for the International Thermonuclear Experimental Reactor”

which applies for the one year period beginning July 22, 1998, with the qualifications that this US participation will be subject to the availability of appropriated funds and is not a commitment to construct a device.

This agreement noted the desire of the Government of the United States of America to complete ongoing activities and to negotiate a new arrangement for international collaboration on fusion science.

Since that time, a committee of conference, representing both Houses of the United States Congress, has recommended an appropriations bill which has been passed by both Houses of the Congress and is now with the President for his signature. Consistent with the Agreement signed by the Secretary, this bill includes provisions that direct the Department to complete ITER-related activities including research and development in the base technology program, particularly the central solenoid magnet coil. It also provides limited funding for an orderly closeout of our design activities.

We believe this bill will become law and are taking the following actions to begin implementation:

1. To complete our ongoing activities, we are working toward completing our principal R&D obligations, in particular the Central Solenoid Model Coil, by the end of FY99.
2. To provide for an orderly closeout of ITER design activities within the constraints of appropriated funds, we have acted to suspend participation of US secondees at the Joint Work Sites and have instructed them to complete their current activities in the next few weeks. As appropriate for the professional completion and transfer of these activities, those US Joint Central Team members who were being relied upon to make presentations at the IAEA Fusion Energy Conference later this month will do so. Over the next three months, we will explore the opportunities for using the ITER Joint Work Site for other international cooperative activities. The Joint Work Site will remain open to minimize the disruption to the work of the Joint Central Team.
3. We also want to work with you to develop a new arrangement which will provide a basis for international collaboration on fusion science. We anticipate this process will begin immediately with a draft available by March 1999.

Concurrent with these actions, we plan to share with you the results of our base science and technology program wherever the work is relevant to ITER objectives. Our scientific personnel will plan to participate in the international experts group meetings that have proven to be so beneficial to our science programs. Further, we have modest funding available in our base program to carry out advanced design work aimed generically at low-cost approaches to burning plasma physics. This work would benefit from the effort begun under the Special Working Group's Task 2 charter. We want to continue this effort toward low-cost approaches to burning plasma physics with you as we work jointly toward a new international arrangement encompassing this and other fusion science areas.

We believe that a strong program of international collaboration is essential to the continued progress of fusion research. This collaborative program will contribute to our fusion energy sciences mission - establishment of the knowledge base needed for an economically and environmentally attractive fusion energy source. We look forward to working with you toward that end.

Sincerely,

Martha A. Krebs  
Director  
Office of Energy Research



## ITER EXHIBIT AT THE AUSTRIA CENTRE, VIENNA

by Drs. F. Casci and W. Spears, ITER Garching JWS

The IAEA Secretariat, on the occasion of the 42<sup>nd</sup> General Conference of the IAEA from 21<sup>st</sup> to 25<sup>th</sup> September 1998, arranged for the display of an exhibit featuring ITER.

It was decided to incorporate the ITER model, special displays on ITER Machine Parameters and R&D, especially on the large projects, and other material from the well-travelled "Fusion Expo", which provided the background to the project, and fusion in general, in the world energy development scene. The exhibit was augmented with a computer displaying the "Fusion CD" produced by CRPP Lausanne, as well as a video corner which was used to display the JET "Energy for the Next Millennium" and ITER assembly sequence video. Thanks are due to the dedication of E. Mayer of Max Planck IPP, who ferried and setup the model and display material from the SOFT conference in Marseilles to Vienna, and to H. Desmedt of CEC-DGXII who helped in the set-up, all was ready early Monday morning in time for the 1<sup>st</sup> plenary meeting of the Conference. The exhibit was alongside others on nuclear medicine and human health, and presentations from the Agency's Personnel and Information Services.

The exhibit was helped by its location: directly adjacent to the main conference cafeteria, next to the mailboxes and copy distribution point, and in the area where mobile telephones obtained the best reception. Initial interest in the exhibit was light due to the distraction of the opening session of the conference, with its controversies about the debate on nuclear testing in the Indian subcontinent, but after an extensive leafletting campaign, interest increased as the conference went on.

The Conference attendees were largely ambassador-level members of the 128 nations involved. The clientele visiting the exhibit ranged from the developing countries interested in understanding fusion's place in the world energy scene more in its educational sense, to the developed countries participating directly in ITER through the partnership. Many attendees had a background in fission reactors, or represented countries contributing in some way to the fission nuclear fuel cycle, so a particular focus of interest was in understanding the differences between fusion and fission. A few visitors, however, were relatively well-informed about ITER and fusion, and wanted rather to know what progress had been made in siting and funding the construction, to which questions we tried to be as encouraging as possible. Leaflets and handouts on ITER and its current progress, the Fusion Expo, JET and general public information on fusion were also made available and enjoyed great popularity.



*At the ITER Exhibit. From the left: M. Ryzhov, RF Governor to the IAEA; E. Adamov, RF Minister of Atomic Energy; W. Spears and F. Casci, Co-Authors of the Article*



*US Secretary of Energy W. Richardson with W. Spears and F. Casci at the Exhibition*

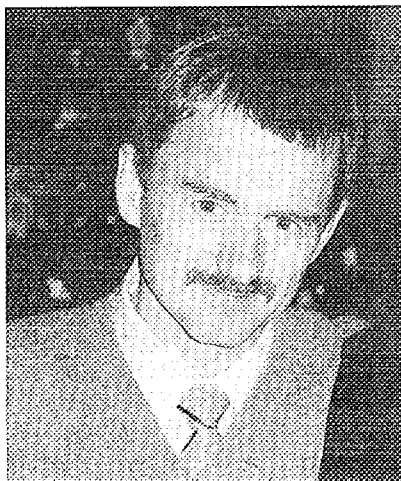
During the Conference, the US was able to sign an agreement on extension, which was understood at the time by the authors and others at the exhibit to complete the Parties' signature round and to allow all those associated with ITER inside and outside the project to breath a temporary sigh of relief (for details see lead article in this issue). The announcement of this signature stimulated more interest amongst the Conference delegates and Secretary of Energy Richardson visited the exhibit immediately after the signature. Of course, senior delegates of the other main Parties of ITER, among others, also visited the exhibition.

Considering the weighty matters under discussion in the General Conference, the exhibit was well attended, and considerable interest and enthusiasm for all our efforts were shown by the visitors. It was surprising and thought provoking to see the interest from countries not known for their previous involvement in ITER, in

particular those in Africa and South America, showing a breadth of interest from all parts of the world in the potential of fusion as a future energy source, and the wish for those more directly involved to pursue its development, also to secure their futures.

Last but not least, we would like to thank Mr. L. Kardos of the IAEA Conference Services Section for his valuable help in getting the exhibit installed at the Vienna Austria Center, as well as the ITER Office Vienna for the logistics.

**ALEXANDER V. KASHIRSKI**  
*in memoriam*



Alexander Vasilievich Kashirski, Senior Researcher of the Institute of Nuclear Fusion at the Russian Research Center "Kurchatov Institute", seconded to the ITER Joint Central Team in 1994, passed away on 29 September in San Diego, California, after fighting a severe illness. The following is the note by the ITER Director on this very sad occasion:

*It is with deep sorrow that I am conveying to you the sad news that one of our colleagues, Alexander Kashirski, has passed away this morning. Alexander arrived at the ITER San Diego Joint Work Site in March 1994 and made great contributions to the ITER Project in his position in the Safety Division. He was a valued colleague who will be sadly missed. Our deepest sympathy goes to his family.*

*Robert Aymar*

Undoubtedly, the feelings of all of Alexander's colleagues at the Joint Central Team, in Moscow and elsewhere, are clearly expressed in this Note.

Items to be considered for inclusion in the ITER Newsletter should be submitted to B. Kouychinnikov, ITER Office, IAEA, Wagramer Strasse 5, P.O. Box 100, A-1400 Vienna, Austria, or Facsimile: +43 1 2633832, or e-mail: [c.basaldella@iaea.org](mailto:c.basaldella@iaea.org) (phone +43 1 260026392).

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