

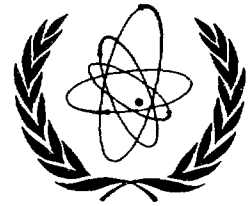
## INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR



## ITER EDA NEWSLETTER

VOL.3, NO. 4

APRIL 1994



INTERNATIONAL ATOMIC ENERGY AGENCY, VIENNA, AUSTRIA

**FIFTH MEETING OF THE ITER MANAGEMENT ADVISORY COMMITTEE (MAC)**

by Dr. M. Yoshikawa, MAC Chair

The fifth meeting of the ITER Management Advisory Committee (MAC-5) was held at the ITER Joint Work Site, Naka, Japan, on 27 and 28 April 1994. Mr. Hideo Yoshikawa (JA) and Dr. Nikolai P. Kornev (RF) were announced as new MAC Members replacing Mr. E. Imai and Dr. Yu. Balasanov, respectively. The MAC invited Administrative Officer, Dr. R. Sheldon, and Mr. M. Drew as experts of the JCT. Dr. D. Gambier was also invited to explain the proposed ITER Process Management System (IPMS). The Head of the Naka Joint Work Site, Dr. M. Huguet, was invited as expert for MAC as a whole.

MAC-5 was held as a meeting focusing on Task Agreements with some additional topics in order to complete the Task Agreements to the greatest possible extent.

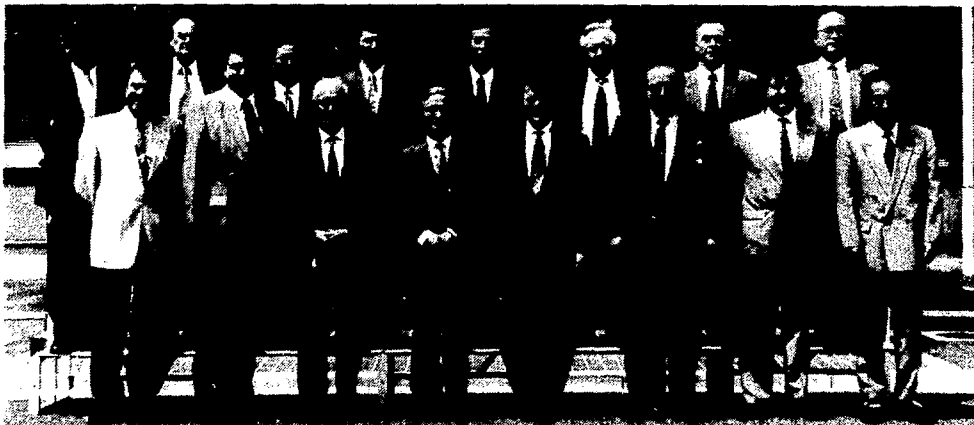
**Proposals for Task Agreements**

MAC reviewed and supported the Director's proposals for Task Agreements for:

- ◆ Irradiation and Test of insulation Samples at 5k with the EU Party
- ◆ Irradiation and Test of Insulation Samples at 77k with the RF Party
- ◆ Reallocation of and Increase in Total Credit concerning Task Agreements of Cabling and Jacketing of ITER Model Coil Conductors with the four Parties

MAC reviewed the Director's proposal for second release of tasks under the 1994 comprehensive Task Agreements. Some modifications were proposed by the Home Team Leaders. Subject to these modifications, MAC supported the Director's proposals with overall limits of ITER Units of Account (IUA) and Professional Man Years (PMY) credits proposed.

In accordance with IC-5 decision, MAC's support constitutes IC endorsement.



Participants in the Meeting

## **Material Transfer Issues**

The MAC intends to discuss at its sixth meeting, whether each Party can accept the principles of "Certain Interface Issues" proposed by the Director at MAC-4, taking into consideration more comprehensive information related to superconducting magnet material transfers to be provided soon by the JCT. It is MAC's understanding that Task Agreements shall include sufficient credit allocations to account for material transfer costs (including shipping, tax fee and tariff). The Parties should make every effort to arrange minimization of such material transfer costs.

## **Involvement of the Republic of Kazakhstan through RF contribution to the ITER EDA**

MAC supports the participation of the Republic of Kazakhstan in ITER through the RF. The text of the agreement, recently received, is being examined by the relevant authorities of the Parties. It is anticipated that MAC will be able, at its next meeting (6-7 July 1994), to make a recommendation to the Council.

## **SUMMARY OF MAGNET AND SAFETY TECHNICAL MEETING**

**by R. Thome, Division Head, Superconducting Coils and Structures Division, ITER JCT**

A Magnet and Safety Technical Meeting was held at the Naka Joint Work Site on February 22-25, 1994. Representatives from the four Parties attended; the attendees are identified on the following page.

The meeting began with a plenary session in which a representative from each Party summarized the homework done since the October 1993 meeting. In addition, a series of presentations was given to initiate discussions regarding magnet safety and the organization of future work in this area.

After the plenary sessions, the attendees divided into two groups for parallel working sessions; one, oriented toward structural analyses of the full scale coil systems and components; the other, oriented toward safety issues. The groups discussed the homework results in more detail, the design alternatives, and developed homework topics for the next meeting. The meeting closed with a plenary session in which the parallel session chairmen summarized the group conclusions and the proposed homework tasks. The JCT will review the proposed homework and come to a mutual agreement with the Home Teams on assignments.

The next Magnet Technical Meeting has been scheduled to be held on June 27-30, 1994 in Naka.

An overview of some of the meeting activities is given in the balance of this section.

## **Conductor Group Status**

The Conductor Group did not meet formally at this meeting; however, the status of recent meetings and task progress were summarized by the JCT (N. Mitchell). Three subgroups have been formed to discuss and coordinate Conductor R&D activity. Subgroup meetings have been scheduled over the past year to occur at the time of conferences when the group members would naturally be present. Conductor analyses and joint design are expected to be a major topic at the June Magnet Meeting.

## **Model Coil Status**

The status of the Model Coil activities was summarized by the JCT (K. Okuno). Design Description Documents and draft Technical Specifications were issued by the JCT in December 1993. A response was received from the US/JA Team for the Central Solenoid (CS) Model Coil, and a preliminary response was received from the EC/RF Team for the Toroidal Field (TF) Model Coil. The teaming arrangements for the detailed design and fabrication for the coils as well as the ITER credits involved have been approved by MAC. Task Agreements are expected to be completed in June 1994. It was noted that the completion of the Model Coils is a major milestone for the ITER Project and that every effort should be made to maintain the schedules.

## Full Scale Coil Analyses

Representatives from all Parties presented results of Group 3 design and structural analyses, as well as the status of manufacturing studies for the Mechanical Structure and the Bucking Cylinder.

The US manufacturing study has been completed and the RF study has been essentially completed. Both studies include material on manufacturing procedures, tooling requirements, schedule and cost estimates. The JA study will be completed in a few weeks, and the EC study has been started. When all results are received, the JCT will compare the output and prepare a summary.

Discussions were held concerning the homework from the last meeting to compare results and review possible design modifications. A tentative homework list was prepared by the group. This will be reviewed by the JCT, and homework tasks will be determined with the Parties by mutual agreement by March 14, 1994. The homework will be prioritized for each Party and be divided into (1) tasks for which results are desired by April 10, and (2) tasks for which the response time is longer, by the Magnet Meeting in June. The JCT plans to communicate with the Home Teams on the early results and to adjust the homework on, or about, May 1 to account for developments.

A new reference scenario for the Poloidal Field (PF) coil currents versus time was distributed for use by both the Magnet Division and the Magnet Meeting contributors for conductor, structural and design calculations. The new reference includes locations of PF coils as well as winding pack sizes.

## Safety Group

Discussions with Safety representatives from the Parties and the JCT were held with Magnet Division staff at Naka and with some of the magnet design oriented participants from the Parties. This led to an identification of the particular concerns to be considered by the Magnet Division. A list of homework items was identified to allow studies in this area to begin. An agreement was reached on the general division of responsibilities and means of interaction between the Magnet and Safety Divisions.

Homework results will be reviewed within the Magnet Division and at the Magnet Meeting in June. The next meeting with the Safety group, other than staff at Naka, will probably occur in the fall of 1994.

## LIST OF PARTICIPANTS

### EC:

P. Komarek, KfK  
R. Meyder, KfK  
A. Torossian, CEA

### RF:

A. Alexeev, Efremov  
E. Bondartchouk, "  
V. Yakubovsky, "

### US:

L. Cadwallader, INEL  
B. Montgomery, MIT  
P. Titus, MIT

### JA:

T. Ando, JAERI  
H. Nakajima, JAERI  
M. Sugimoto, JAERI

### JCT:

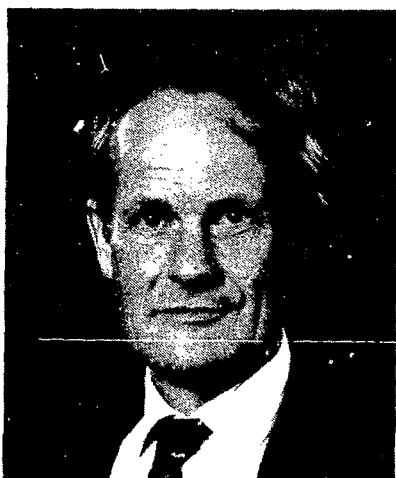
P. Barabschi, San Diego  
B. Bessette, CEA/VHTP  
P.-L. Bruzzone, NET/VHTP  
C.W. Bushnell, Naka  
B.J. Green, Naka  
D. Holland, Naka  
M. Huguet, Naka

F. Iida, Naka  
N. Mitchell, Naka  
K. Okuno, Naka  
Z. Piec, Naka  
A. Poucet, San Diego  
G. Saji, San Diego  
C. Sborchia, Naka

M. Shimada, Naka  
J. Stoner, Naka  
R.J. Thome, Naka  
R. Viera, Naka  
R.M.G. Wong, Naka  
K. Yoshida, JAERI/VHTP

## NEWS IN BRIEF

FRS for Derek Robinson, EC Member of the TAC



*Dr. Derek Robinson has been elected fellow of The Royal Society for his contribution to fusion research. He is a member of the ITER Technical Advisory Committee (TAC).*

*The Royal Society is an independent, self-governing learned society founded in 1660 for the promotion of the natural sciences. It encourages both national and international activities.*

*Dr. Robinson has contributed particularly to both the theory and practice of stable confinement of high temperature plasmas. He worked on joint experiments in Russia which, in 1968-69, obtained the first measurement of temperatures exceeding 10 million degrees.*

## FORTHCOMING EVENTS <sup>1)</sup>

- Technical Meeting on Power Supply, Naka, Japan, 10-13 May
- 2nd Sensitivity Study Meeting, San Diego, USA, 12-13 May
- RF Technical Meeting (Working Group on Gyrotrons and Windows), Garching, Germany, 16-18 May
- Kickoff Meeting for ITER Task Agreements on Generic Access Routes for Diagnostics, Garching, Germany, 6-10 June
- Divertor Design and Materials Technical Meeting, Garching, Germany, 8-10 June
- Magnets Technical Meeting, Naka, Japan, 6-7 July
- MAC-6, St. Petersburg, Russia, 6-7 July
- TAC-6, St. Petersburg, Russia, 12-14 July
- IC-6, Moscow, Russia, 27-28 July

<sup>1)</sup> Attendance at all ITER Meetings by invitation only.

Items to be considered for inclusion in the ITER Newsletter should be submitted to B. Kouychinnikov, ITER Office, IAEA, Wagramerstrasse 5, P.O. Box 100, A-1400 Vienna, Austria, or Facsimile: 43 1 237762 (phone 23606392).

Printed by the IAEA in Austria  
May 1994