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# ITER EDA NEWSLETTER

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## ITER MANAGEMENT ADVISORY COMMITTEE MEETING

**by Dr. M. Yoshikawa, MAC Chairman**

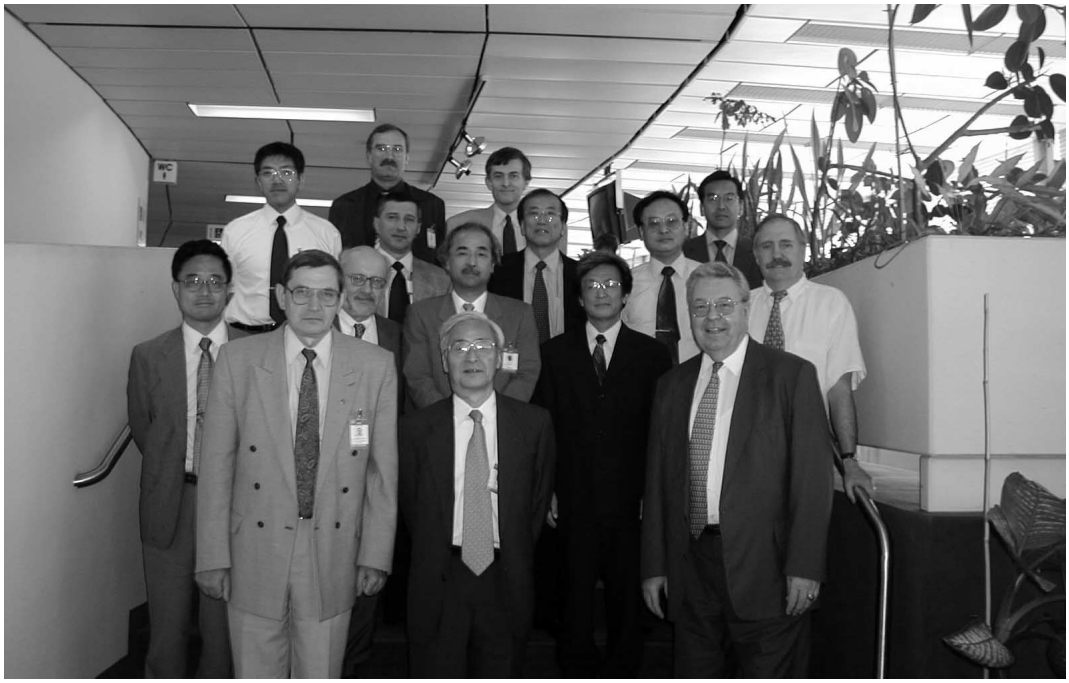
The ITER Management Advisory Committee (MAC) Meeting was held on 16 July at the IAEA in Vienna.

It was the last MAC Meeting and the main topics were consideration of the report by the Director on the ITER EDA Status, review of the Work Programme, review of the Joint Fund and arrangements for termination and wind-up of the EDA.

### ITER EDA Status

MAC noted the Status Report presented by the Director in the period between the ITER Meeting in Toronto (February 2001) and July 2001. It also noted that the procedure to discharge SAIC from its responsibilities as ITER Joint Fund Agent in the USA has been completed.

MAC expressed its great appreciation to the Director and the members of the JCT and Home Teams for their continuous efforts to render the ITER Engineering Design Activities smooth and successful.



*Participants in the Meeting*

**Task Status Summary and Work Programme**

Considering the modifications of the Task Agreements since the MAC Meeting at Garching (February 2001) MAC reviewed and supported the modifications of the Agreements for which credit changes are more than 500 IUA or 2.5 PPY, or more than 20%, and took note of the modifications of the Agreements for which credit changes are not more than 500 IUA or 2.5 PPY, or not more than 20%.

MAC reviewed and supported the modifications of the 2000-2001 CTA for Design to the EU, JA and RF.

MAC took note of the status and summary of Task Agreements, reviewed and supported the cancellation of some of them and compiled a list of Task Agreements per Party.

MAC noted with pleasure the publication of an article on ITER Technology R&D in the Fusion Engineering and Design journal issue of July 2001 (ref. ITER Technology R&D, ITER JCT and Home Teams, Fusion Engineering and Design Vol. 55, 2001, pages 97-358) and commended those involved in preparing the documents for timely publication.

**Joint Fund**

MAC reviewed consolidated accounts for the ITER Joint Fund Budget of 2000 as presented by the Director with supporting detailed information.

On the basis of the information provided, MAC recommended that the ITER Council should approve the consolidated annual accounts of the ITER Joint Fund for 2000, as well as the utilization of unspent funds from the 1999 budget against Joint fund expenditure in 2001.

MAC noted that each Party has exercised appropriate oversight of the funds provided to the Joint Fund Agent in its territory.

**Arrangements for termination and wind-up of the EDA**

**Final Reporting of Task Agreements**

MAC recommended the ITER Council to approve the final reporting procedure to apply to the specific Tasks for which a final report is not available before the end date of the EDA.

MAC recommended to the ITER Council to request the Parties to complete and distribute the outstanding final reports. For this purpose, MAC recommended the ITER Council to take note of the designation by each Party of a person who is responsible for ensuring the preparation and distribution of final reports for the specific Task Agreements. The names of the responsible persons are set out in the section "Responsible for the final reports for the Task Agreements" of the table on page 3.

**R&D hardware and facilities**

MAC took note of the revised tables on disposition and associated cost sharing for R&D hardware and facilities.

MAC proposed to the ITER Council to ask the Parties to confirm their intention to make available the assets and facilities established under ITER EDA Task Agreements. Any decision on disposal or other use shall be taken only after consultation with the other Parties.

MAC recommended the ITER Council to take note of the designation by the Parties of persons who are responsible for the supervision of both disposition and utilization of the R&D hardware and facilities. The names of the responsible persons are set out in the section "Responsible for the supervision of both disposition and utilization of the R&D hardware and facilities" of the table.

**Joint Fund Assets**

MAC recommended the ITER Council to approve the estimate of the depreciated values at each Joint Work Site of items of ITER Joint Fund property procured before the end of 2000.

MAC recommended the ITER Council to take note of the provisional status of the ITER Joint Fund at the end of the ITER EDA.

MAC recommended the ITER Council to propose the establishment by the Parties of an ad hoc group for the exercise of continuing joint responsibilities for the winding-up of the ITER EDA Joint Fund. It also recommended the ITER Council to endorse the proposed specific responsibilities for the ad hoc group with respect to the charge.

The names of the member of the ad hoc group are set out in the section "Ad hoc group for the exercise of continuing joint responsibilities for the winding-up of the ITER Joint Fund" of the table.

MAC recommended the ITER Council to initiate the procedure in line with the Attachment 12 to the R&A of the MAC Meeting at Garching (February 2001).

**List of designated persons and members of Ad Hoc Group for termination and wind-up of the EDA**

| | | |
|---|---|---|
| Responsible for the final reports for the Task Agreements | EU | R. Andreani |
| | JA | T. Tsunematsu |
| | RF | O.G. Filatov |
| Responsible for the supervision of both disposition and utilization of the R&D hardware and facilities | EU | W. Dänner |
| | JA | M. Seki |
| | RF | V.A. Belyakov |
| | US | W. Marton |
| Ad hoc group for the exercise of continuing joint responsibilities for the winding-up of the ITER Joint Fund | EU | J.P.M. Spoor |
| | JA | T. Kimura |
| | RF | V.M. Korzhavin |

**Other Matters**

MAC recommended to the ITER Council to propose to the Parties to establish a mechanism for jointly addressing other matters as and when they arise in the course of orderly termination.

**Acknowledgements**

At the time of the closing of the last MAC Meeting, MAC expressed its appreciation for the guidance of the ITER Council and for the contributions of the Director and the members of the Joint Central Team in facilitating the successful performance of MAC tasks. The members of MAC also expressed their appreciation to the Chairman, Dr. Y. Yoshikawa, and to the successive secretaries, Dr. T. Hirayama and Dr. Y. Miura, for the organization and conduct of MAC meetings during the EDA.

## NINTH ITER TECHNICAL MEETING ON SAFETY AND ENVIRONMENT

**by Drs. J. Raeder and C. Gordon**

The work for ITER has always included extended safety and environmental (S&E) assessments to ensure the attractiveness of ITER in particular and of fusion in general. The associated safety guidelines for the project have been based on internationally recognized principles and criteria, most notably ICRP and IAEA recommendations. Starting from this basis, ITER is now being assessed with regard to S&E impact and this comprehensive assessment is being documented in the Generic Site Safety Report (GSSR).

The Ninth Technical Meeting on Safety and Environment, the last in the course of the ITER Engineering Design Activities (EDA), was held at the ITER Garching Joint Work Site, 8 to 10 May, 2001. At this meeting, safety experts from the Home Teams worked together with the members of the Safety, Environment and Health Group (SEHG) of the ITER Joint Central Team (JCT) in the following areas:

- finalization of the GSSR which is considered to be the most important objective of the present work;
- summary of the safety related R&D work done by the Home Teams for ITER during the EDA;
- review of verification and validation (V&V) work done on computer codes being applied for S&E analyses;
- outline of the work considered necessary for improving the S&E data base, quantifying uncertainties of the code results and preparing the adaptation of ITER to a specific site.

**Issues presented and discussed**

The participants heard a concise presentation of the ITER project status in terms of important meetings held in the recent past, the IAEA letter of invitation to the governments of the ITER partner countries, and the terms of reference for the future Co-ordinated Technical Activities (CTA).

The GSSR editors presented all the volumes whose titles are as follows:

| | | | |
|---|---|---|---|
| Volume I | Safety Approach | Volume VI | Occupational Safety |
| Volume II | Safety Design | Volume VII | Analysis of Reference Events |
| Volume III | Radiological and Energy Source Terms | Volume VIII | Ultimate Safety Margins |
| Volume IV | Normal Operation | Volume IX | External Hazards Assessment |
| Volume V | Radioactive Materials, Decommissioning and Waste | Volume X | Sequence Analysis |
| | | Volume XI | Safety Models and Codes |

The presentations were focused on the comments received from the Home Team safety experts and on the response to them. Comments and responses referred also to the representation of ITER safety in general and of the GSSR in particular in high level project documents such as the Plant Design Description (PDD), Plant Design Specification (PDS) and Plant Safety Requirements (PSR).

The Home Teams presented the overall summaries, status and results associated with the R&D tasks in the course of the ITER EDA. This work had been orientated by previous planning towards the provision of basic safety data and analyses, and towards benchmarking, verification and validation of computer codes for the safety analyses.

The main areas of work were:

- hydrogen isotope behaviour (accumulation, desorption, permeation) in plasma-facing armour materials (beryllium, carbon-fibre composite and tungsten);
- plasma-facing component erosion product (dust) formation, characterization, mobilization, transport, removal and monitoring under conditions simulating ITER modes of operation;
- chemical interaction of plasma-facing component materials (especially beryllium) with steam and air;
- activation product volatility;
- corrosion product generation and transport;
- decay heat measurement of plasma-facing component materials;
- transient thermal hydraulic phenomena.

This part of the meeting also included a presentation by JCT safety staff of important safety-related R&D results contributed in the past by the US Home Team, in particular in the areas of beryllium-steam chemical reactions, mobilization by steam of hot tungsten and of alloying elements from hot steel, metallic tokamak dust, disruption-induced particles, tritium saturation effect, and safety analyses.

Both Home Team and JCT presenters discussed basic issues with regard to data needs, uncertainty assessments and, in particular, regulatory requirements expected to be imposed on code quality assurance, code validation, and the scope and depth of the safety analyses.

**Summary and conclusions**

The GSSR together with the elaboration of further design detail will support siting and help in preparing regulatory applications. The computer codes used for the safety analyses are quite well understood and documented. The necessary future work on their benchmarking, validation and verification has been identified in substantial detail, and areas for continued international co-operation to further improve ITER's safety assessments were discussed.

Overall, the meeting provided an important forum for the finalization of the GSSR which, if prepared as discussed, is expected to assist the Home Teams and experts from potential host countries in preparing regulatory submissions. It is understood that the way to ensure ITER safety which is described in the GSSR is not the only acceptable approach but could be flexibly interpreted in the context of siting if kept in line with the safety design principles. The results from the assessments documented in the GSSR can therefore be regarded as providing sufficient technical information for supporting a construction decision and regulatory approval activities in a host country.

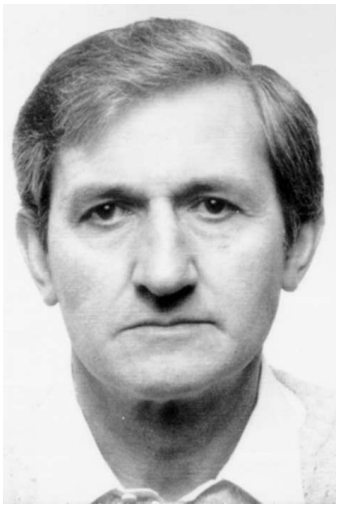
*Participants in the meeting in front of the ITER building at the Garching JWS*

**List of Participants**

**EU Home Team:** J. Collen, W. Gulden, R. Meyder, M.-T. Porfiri, P. Sardain, M. Stewart (ITER Canada), N. Taylor (GSSR editor)
**JA Home Team:** K. Hada, Y. Neyatani, S. O'hira, K. Takase
**RF Home Team:** D. Davydov, B. Kolbasov, M. Krivosheev
**JCT:** H. Bartels, V. Chuyanov, C. Gordon, T. Honda, M. Iseli, K. Moshonas (VHTP), J. Raeder, L. Topilski

## DR. CHARLES MAISONNIER

**in memoriam**



At the time when this Newsletter went to press, we were saddened to learn of the death of Charles Maisonnier, retired Director of the European Fusion Programme, on 27 July 2001.

Charles Maisonnier was born on 8 October 1931 in Lyon, France. He had a distinguished academic background. He was Ingénieur de l'Ecole Centrale Lyonnaise, Ingénieur Civil des Télécommunications and Docteur des Sciences.He received the J. Thibaud award of the Academie de Lyon in 1968.

He worked successively at the University of Lyon, the University of California at Berkeley and the Brookhaven National Laboratory, with a Fulbright Fellowship. His professional life was thereafter devo-ted entirely to fusion. After a brief period of working at CEA (Saclay) and CERN (Geneva), he was among the very first young scientists to be recruited by Euratom in 1960. He started his work in Rome, moving shortly thereafter to Frascati, where the Laboratorio Gas Ionizzati of the then recently created Euratom-CNEN Association was finally established. Charles Maisonnier worked as an experimental physicist involved in fast plasma compression in the division headed by J.G. Linhart. He became afterwards the leader of the group responsible for research on plasma focus devices and the first Director of the Laboratorio "Plasma Focus". He was a prime mover in the development of Plasma Focus devices and one of the major exponents in this field of research at the world level, through his work on the 100 kj "Mirapi" device and then on the 1 MJ plasma focus device that he conceived and realized with his staff.

In 1977, he was invited by the Director of the European Fusion Programme, Donato Palumbo, to join the Fusion Headquarters in Brussels in the European Commission's Directorate General XII. In his new function, he masterminded the strengthening and expansion of this programme in Europe and the development of worldwide collaboration on fusion. He became Director of the European Fusion Programme shortly after Donato Palumbo's retirement, a position he kept until his retirement in 1996 at the age of 65. He was one of the founding fathers of the ITER Project, for which he was a vigorous driving force up to his retirement, and beyond when he became special adviser to Commissioner Cresson. He was an active member in all key committees of the European Fusion Programme and a member of the ITER Council. He was also a member of the Board of Editors of the Nuclear Fusion journal.

Charles Maisonnier will also be remembered for his high sense of hospitality, marvellously supported by his wife Marie-Françoise. Second to his passion for fusion was his passion for the sea. He found time over the years to sail with family and close friends through the seas of the Mediterranean basin.

Sadly, with his passing, a formidable actor in the development of fusion at the world level disappears.

Items to be considered for inclusion in the ITER Newsletter should be submitted to B. Kuvshinnikov, 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 (phone +43 1 260026392).

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