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Table 2. Workshop and a technical meeting

Date	Title	Location
12 - 16 March 2001	Workshop on Materials for In-vessel Components	Garching
7 - 11 May 2001	Technical Meeting on Safety and Environment	Garching

Arrangements for termination and wind-up of the EDA

Completion of Task Agreements. MAC recommended that Parties should undertake to complete EDA Task Agreements and to share the results in accordance with normal EDA practice. For specific Tasks that might not be completed before the end-date of the EDA, each Party concerned should designate a person responsible for pursuing its Tasks to completion following normal EDA practice. MAC recommended to the ITER Council to endorse this approach as a proposal to the Parties for appropriate action under Section 5 of Protocol 2 to the EDA Agreement.

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

Initial discussions on ways to handle data produced on facilities constructed during the ITER EDA and that would be operated beyond the end of the EDA. MAC recommended to the ITER Council to support the proposal on ways to handle data produced on facilities constructed during the ITER EDA and that would be operated beyond the end of the EDA and, accordingly, recommended to the ITER Council to ask each of the Parties, by the next MAC meeting, to designate a person who is to be responsible for the supervision of both disposition and utilization of the R&D hardware and facilities.

Joint Fund Assets. MAC recommended to the ITER Council to approve valuation procedures for ITER Joint Fund property at the end of the EDA.

MAC also recommended to the ITER Council:

1) to endorse the proposals towards disposition of the ITER Joint Fund, including the establishment, according to Section 5 of Protocol 2 to the EDA Agreement, of an ad hoc body for the exercise of continuing joint responsibilities for the winding-up of the EDA which cannot be completed within the duration of the EDA;
2) to request the Parties, assisted by the Director and acting through the MAC-CPs, to make necessary preparations to implement the above proposals, including preparation of specific actions/documents to be approved/adopted, following MAC review, at the final meeting of the ITER Council.

TEST BLANKET WORKING GROUP'S RECENT ACTIVITIES

by Dr. J.E. Vetter, TBWG Chair

The ITER Test Blanket Working Group (TBWG) has continued its activities during the period of extension of the EDA with a revised charter on the co-ordination of the development work performed by the Parties and by the JCT leading to a co-ordinated test programme on ITER for a DEMO-relevant tritium breeding blanket. This follows earlier work carried out until July 1998, which formed part of the ITER Final Design Report (FDR), completed in 1998.

Whilst the machine parameters for ITER-FEAT have been significantly revised compared to the FDR, testing of breeding blanket modules remains a main objective of the test programme and the development of a reactor-relevant breeding blanket to ensure tritium fuel self-sufficiency is recognized as a key issue for fusion. Design work and R&D on breeding blanket concepts, including co-operation with the other Contracting Parties of the ITER-EDA for testing these concepts in ITER, are included in the work plans of the Parties.

During the second half of 2000 there was one meeting of the TBWG (18-19 October 2000 at Garching) which was preceded by a two day working meeting of Experts, in which interface issues between the blanket test modules and the ITER machine were addressed, covering remote handling, port interface, ITER services, integration in the pit, tritium plant and tokamak cooling water systems (TCWS) vault.

The key focus for the October meeting and the key action addressed during the period was the completion of the TBWG Report for the period of extension of the EDA, in which the work performed by the Parties and by the JCT, related to blanket R&D and to the test programme, is described. A first working draft was completed before the end of the year 2000. The boundary conditions for testing and the requirements imposed on the test blanket modules (TBMs) have been determined by the ITER JCT.

Three adjacent main horizontal ports have been allocated for blanket testing, numbers 1, 2 and 18. A Design Description Document (DDD) has been produced for each of the ports to be used. All common features, including frame details and a remote handling description, are included in the DDD for port 1. Features specific to a particular port are described in the port specific DDD. A co-ordinated blanket test programme has been developed and is described. Each of the Parties has provided detailed descriptions of the TBMs. Interface issues, auxiliary systems and safety considerations are also described in the report.

It is concluded in the report that for the blanket test programme, the three ports allocated offer adequate space for testing of up to six different types of breeding blanket. Most of the important breeding blanket functions can be investigated with the parameters of ITER-FEAT and the machine operational scenario offers a stepwise increase in performance, to which the overall blanket test programme can be synchronized. The test strategies differ for the different blanket concepts, resulting in sequential testing involving different test modules, which may be optimized for single or combined effects testing. The main effects to be studied relate to electro-magnetics, neutronics, thermo-hydraulics, thermo-mechanics and tritium breeding/extraction/migration.

Key aims of the tests are code validation and verification of design assumptions based on calculations and out-of-pile or in-pile fission reactor experiments. However, for some testing parameters considerable extrapolations have to be made from the ITER conditions to those of a potential fusion reactor. This is in particular the case for the first wall heat load and for the pulse length. It is desirable to obtain the longest possible single pulse length. Furthermore, due to the limited neutron fluence available in ITER, materials studies related to neutron irradiation will have to be conducted in fission reactors and in an accelerator based intense 14 MeV neutron source, such as IFMIF.

The ITER remote handling and maintenance scheme will permit the exchange and servicing of the blanket test modules. Space available in the hot cell is limited and must be taken into consideration for operations of longer duration. Finally, operational safety during blanket testing can be assured at all times on the basis of the safety principles adopted for ITER. Accident hazards are generally minimized by material inventories.

Overall, the Report concludes that, from the data presented, a high level of confidence in a successful test programme on the ITER-FEAT machine for a DEMO-relevant tritium-breeding blanket is justified. It is recommended that effort be maintained on this area of R&D in the future.

The Report, together with revised DDD's for the blanket concepts will be completed during the first half of 2001. A final TBWG Meeting is scheduled for mid May 2001 in Moscow.

LIST OF PARTICIPANTS IN TBWG AND EXPERTS' MEETINGS

EU: L. Boccaccini, S. Booth (Secretary), M. Gasparotto, L. Giancarli*, S. Malang, Y. Portevin, S. Paidassi*, J. Vetter* (Chair)
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