IFERC Newsletter

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International Fusion Energy Research Centre, Rokkasho, Aomori 039-3212, Japan

Meeting

24th IFERC Project Committee (IFERC PC-24) meeting

The 24th International Fusion Energy Research Centre (IFERC) Project Committee (IFERC PC-24) meeting was held at vision center, Tokyo on 7th March, following the 10th DEMO Design Activity (DDA) Technical Coordination Meeting (TCM) at QST Naka site on 5th-6th March. Twenty-four participants attended the IFERC PC-24 in person. Among these were 5 committee members, including the PC chair, David Maisonnier, 6 project team members, including the Project Leader, Noriyoshi Nakajima, 1 secretary, 1 PC invited experts, and 11 experts from the EU and JA Implementing Agencies.

IFERC project proceeds as originally planned except for minor delay of reports. The recent status of DEMO Design Activity (DDA), of DEMO R&D Activity: Analysis of JET tile and dust, and of REC Activity were reported together with information from IFERC-HPC follow-up working group, which was established in IFERC PC-20. Activities in 2018 were summarized as Annual Report 2018 for IFERC Project, and PC members recommended this document to Broader Approach (BA) Steering Committee (SC) in the upcoming 24th BA SC meeting to be held in Rokkasho on 10th–11th April for approval.

The most important issue in this meeting was to revise the draft IFERC Project Plan in BA Phase II from April 2020 to March 2025, which was originally presented in IFERC PC-23. Responding to the IFERC PC members' suggestions in the last IFERC PC-23, the plans for DEMO Design, DEMO R&D, CSC, REC and Site activities were revised especially in timeline with milestones and decision points. In the case of DEMO Design and DEMO R&D, revised plans were extensively discussed in the preceding 10th DDA TCM meeting. The revised draft IFERC Project Plan in BA Phase II, as the integration of each revised plan, was recommended by the IFERC PC members to BA SC in the upcoming 24th BA SC meeting for consideration.

Hereafter, the recent topics are described. Regarding DDA, the activities continue to investigate key issues, which will impact the selection of main machine parameters and technical specifications for pre-conceptual designs of DEMO. In addition, new joint activities started in several topics in order to share and improve physics results and engineering designs, which were developed previously by either side or under the different conditions. For example, a comparative study between a systems code with a simple divertor model and the JA large scale divertor simulation code: SONIC was done. Some discrepancies in the target plasma parameters were seen, and it suggested the importance of considering the impurity transport, i.e. distribution of the impurity concentration, in the simple model.

As for DEMO R&D, the compilation of Material Properties Handbook is ongoing in the framework of DDA, and the analysis of JET tile and dust continues in accordance with Work Programme 2018 for new specimens such as bulk Be limiter tiles and a new set of sample materials. Three shipments of samples have taken place in July and September, 2018: (1) Be first wall and limiter tiles (ILW-1), (2) W-Lamella divertor tiles (ILW-1), (3) divertor tiles of W-coated CFC (JET-ILW 3rd campaign: ILW-3), and (4) dust (collected after ILW-3). The aims of research carried out in 2018 were threefold: 1) to conclude studies of the divertor and dust specimens from the 2011-2012 operation in ILW-1; 2) to begin studies of divertor cores and dust from ILW-3 in order to gather data for detailed comparisons of two campaigns ILW-1 and ILW-3; and 3) to develop a methodology and define a programme for analyses of beryllium limiters and to prepare for analyses of bulk tungsten tiles.

As shown in the newsletter (IFERC-N-2019-01), the remote participation in WEST experiment from Rokkasho REC was successfully implemented.

As to activity of IFERC-HPC follow-up working group will be presented in a separate newsletter.

(IFERC Project Leader: Noriyoshi Nakajima)