JT-60SA Newsletter
No.28, 27 April 2012

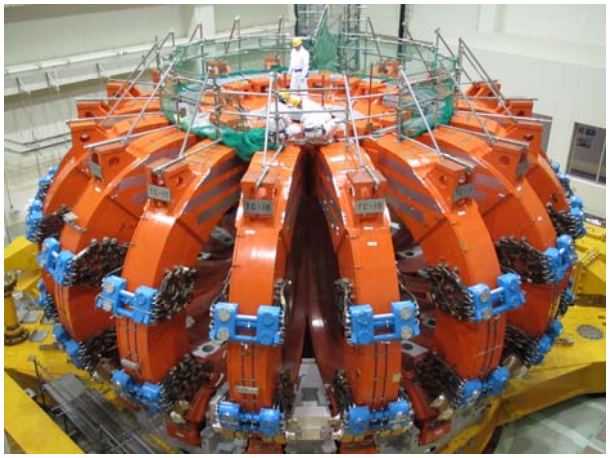
Headline

Disassembly of toroidal field coils completed

Current state of disassembly

Disassembly of the 18 toroidal field coils (TFCs) (90 t/per coil) and their arrangement in a doughnut shape, one of the important events for disassembly of the JT-60U, was completed in March with due ceremony. All the TFCs were successfully stored in the storage building along with the overturning force supports.

Group photo at ceremony



TFCs stored in the storage building

News

Cryostat base manufacturing process

IDESA (Ingeniería y Diseño Europeo S.A.), manufacturer of the JT-60SA cryostat base (CB), is progressing well with the fabrication. The final delivery date remains unchanged and, although some activities started later than planned manufacturing schedules in the past, now the progress in the fabrication is in order.

The state of manufacture of the three sectors of the CB lower structure is as follows: the first sector (figure 1) is assembled and welded within tolerances. This sector is now in ASTURFEITO´s workshop for machining. The second sector (figure 2) is almost assembled and welded and in 2-3 weeks will be ready for machining. The radial beams of the third sector are waiting for their assembly and welding to the outer/inner ring and in 5-6 weeks will be ready for machining.

The three double ring sectors are in an advanced stage of manufacture with regard to the work plan. They are assembled and one of them already has roots welds at the ribs/reinforcements connecting the upper and lower horizontal plates (figures 3 and 4). The manufacture of these sectors is at the critical stage in terms of deformation by welding.

Figure 1: Dimensional inspection of lower structure sector

Figure 2: Welding of lower structure sector

Figure 3: Welding of a double ring sector

Figure 4: Detail of ribs welding in a double ring sector

Figure 5: Inner cylinder

The inner cylinder has been manufactured (figure 5) and only the two ports are under fabrication.

The forged TFC supports, made in Italy by Special Flanges SpA, are completely manufactured and machined. The fasteners are already ordered and will be available for the initial phase of the CB assembly, expected at the end of May.

News

Winding of equilibrium field coil No.4 completed

Equilibrium field coil No.4 completed (before hardening)

Winding of the equilibrium field coil No.4 (EF4) was completed at the factory. Leak and pressure tests were carried out based on the High Pressure Gas Safety Law in Japan, and already passed. Also, the Nb_3Sn strand (466m long) for the central solenoid (CS) and the NbTi strand (157m long) for the CS coil feeder were delivered to Naka. It was confirmed that the welding base material of CS jacket can endure the load, with a margin of a factor of thirty on the number of load cycles (36,000) required in full operation.

News

Fabrication of third 40° sector of vacuum vessel completed at Naka

The inboard and outboard segments for third 40° sector of the vacuum vessel (VV) were delivered to Naka. After being assembled and welded in the VV sector-assembly building, the vessel passed all the necessary inspections and tests. Up to now, three 40°sectors and 18 ports have been completed. The three 40° sectors of the VV are now stored in the VV sector-assembly building. Two sectors are visible in the picture.

Meetings

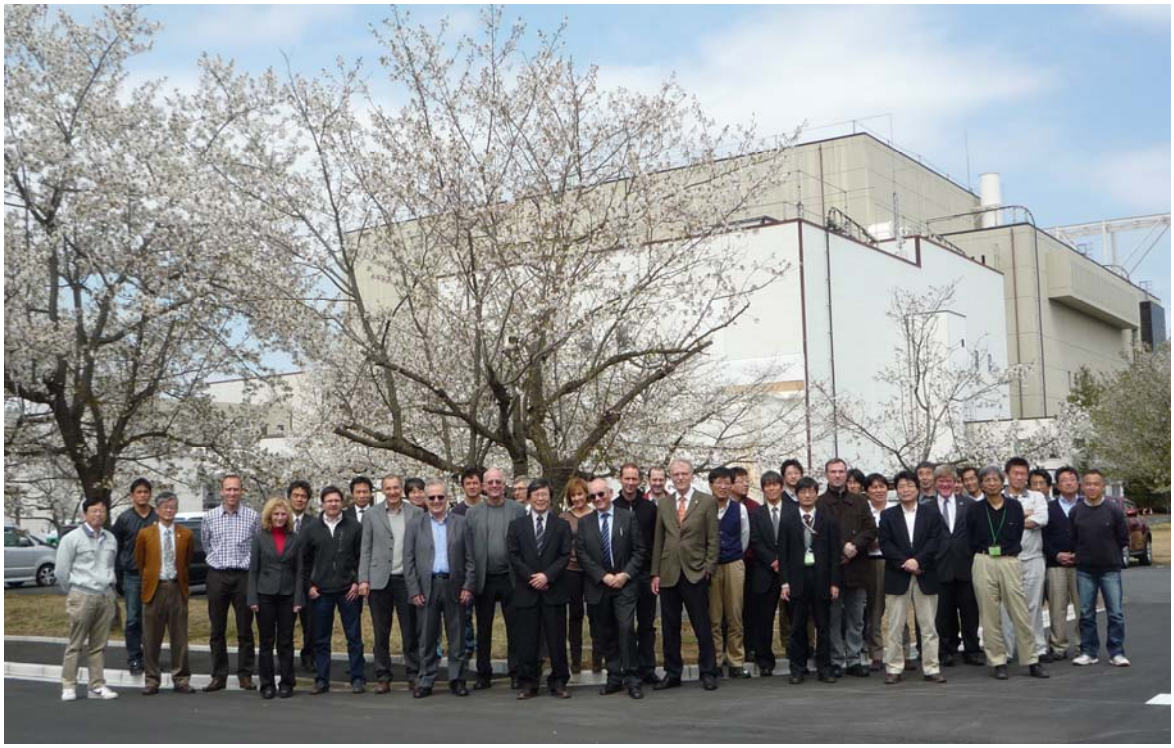
10th meeting of the STP Project Committee

On 28 March, the 10th meeting of the Satellite Tokamak Programme Project Committee (PC-10) was held by videoconference between EU and Japan. 40 participants in total joined the meeting, 6 members from the Project Committee, the Project Leader, 6 experts from the Project Team, and 27 experts from the EU and JA Home Teams.

A new Chair, F. Romanelli, coordinated the meeting. He thanked the former Chair, J.Pamela, for all the work done. At the meeting, the Project Leader (PL) reported on the Annual Report 2011, JT-60SA TF Spare Coil Need Assessment, JT-60SA Schedule Rebaselining, and the Project Plan to be submitted to the Steering Committee, and the current status and progress of the project were also reported in detail by the PL and Project Managers. The Chair and the PC members took note of the status and steady progress, and recommended the Steering Committee to approve the Project Plan and related documents.

Meetings

14th Technical Coordination Meeting held in Naka



The 14th Technical Coordination Meeting (TCM-14) was held at the JAEA Naka Fusion Institute on 18 and 19 April, and 76 experts in total (29 from the JA Home Team, 36 from the EU Home Team, 5 from the Project Team, and 6 invited attendees) participated in the meeting including some experts from Italy, Germany, France, and Spain via videoconference.

Progress on each component was reported in detail, such as the manufacturing of the toroidal field (TF) coil, the poloidal field (PF) coil and quench protection circuits (QPC) power supply. The final design of the thermal shield, the progress of the assembly procedure of vacuum vessel and the pre-assembly process of the TF coil were also reported. The process for the configuration control models management was updated and that for design basis documentation management was introduced. Updates were agreed to the Action List and Plant Integration Document at the end of the meeting.

The date of the next TCM (TCM-15) was confirmed as 19 and 20 of September 2012 at Consorzio RFX in Padua, Italy. The TCM-16 will be held in December 2012 at Naka.

Meetings

10th meeting of the BA Steering Committee held in Naka

On 24 April 2012, representatives of the EU and Japan on the occasion of the 10th Meeting of the Broader Approach (BA) Steering Committee at the Naka Fusion Institute of the JAEA in Japan, confirmed the remarkable progress achieved despite the difficulties caused by the Great East Japan Earthquake, and approved the 2011 Annual Reports and the Project Plans for the three BA projects of IFMIF/EVEDA, IFERC and STP.

For the Satellite Tokamak Programme (JT-60SA) the SC approved a revised baseline schedule with the first plasma in March 2019. The JT-60SA Research Plan, developed with the cooperation of more than 330 researchers from the European and the Japanese fusion research communities, is in place to ensure a successful joint exploitation of JT-60SA by Europe and Japan.

The next BA Steering Committee meeting will be held in Brussels (Belgium) on 6 November 2012.

Calendar

May 6-10, 2012
19th Topical Conference High-Temperature Plasma Diagnostics
Monterey, USA

May 7-10, 2012
17th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating
Deurne, Netherlands

May 14-18, 2012
International Cryogenic Engineering Conference 24-International Cryogenic Materials Conference 2012
(CEC 24 - ICMC 2012)
Fukuoka, Japan

July 2-6, 2012
39th European Physical Society Conference on Plasma Physics & 16th International Congress on Plasma Physics
(EPS/ICPP)
Stockholm, Sweden

July 30-August 3,2012
20th International Conference Nuclear Engineering/ASME 2012Power Conference
Anaheim, USA

September 19-20, 2012
15th Technical Coordination Meeting (TCM15)
Padua, Italy

Contact Us

The JT-60SA Newsletter is released monthly by the JT-60SA Project Team.
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For more information please visit the website: http://www.jt60sa.org/