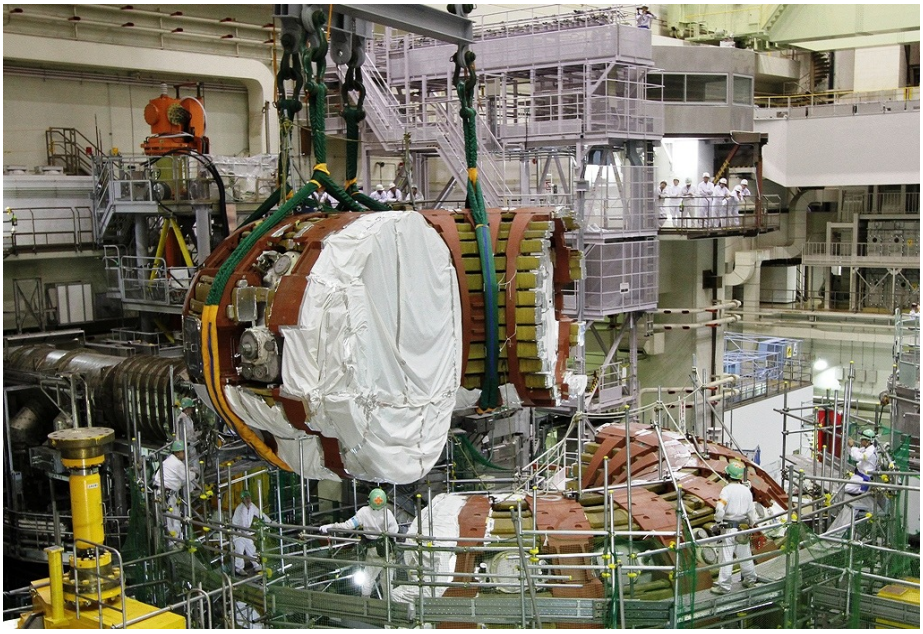
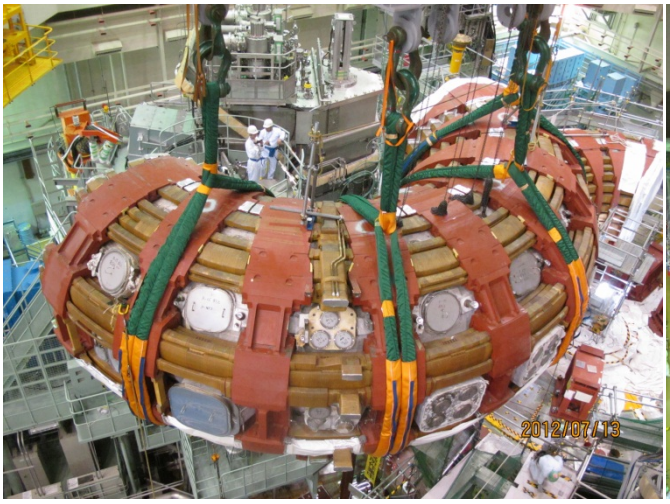
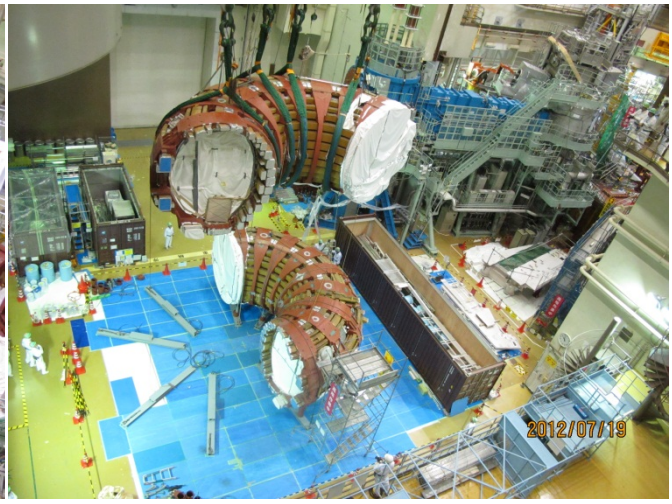
JT-60SA Newsletter
No.32, 31 August 2012

Headline

Lifting out of vacuum vessel halves successfully completed







Lifting and moving of the vacuum vessel halves

After the cutting of the vacuum vessel (VV) in half by a diamond wire saw, the VV halves were lifted out, moved from the torus hall and temporarily stored in the assembly hall. The total weight of each of the VV halves is more than 170 tons including 42 poloidal field coils (PFCs) and their supports (eight or nine) which are attached outside the VV. Heavy duty nylon lifting slings were wound around the PFC supports to make the load well-balanced. Consequently, the lifting was performed using only four lifting points. After closure plates were welded on to seal the cut sections, the VV halves were moved to the storage building in August.

News

Final steps in manufacture of cryostat base

Figure 1: Third sector of the double ring completely welded

IDESA along with its main subcontractor ASTURFEITO have made significant progress with the manufacturing of the cryostat base (CB). For instance, all major welding activities carried out at the IDESA workshop are now completed. Sectors of the lower structure (LS) as well as the double ring (DR) sectors are now being machined at the ASTURFEITO workshop.

The three sectors of the LS are nearly completely machined and their assembly, after each sector has been cleaned, will be started. Machining of the three sectors of the DR is progressing well due to the three shifts of work recently established. The inner cylinder (IC) will be temporarily mounted in its final position, inside the three sectors of the LS, to determine the final machining references (its height and the location of its ports and openings). The nine supports of the IC will be welded, as much as possible, during this initial assembly. These supports fix the position of the IC with respect to the LS. The two ports of the IC will be welded after the machining of their corresponding openings.

Figure 2: First sector of the double ring being machined

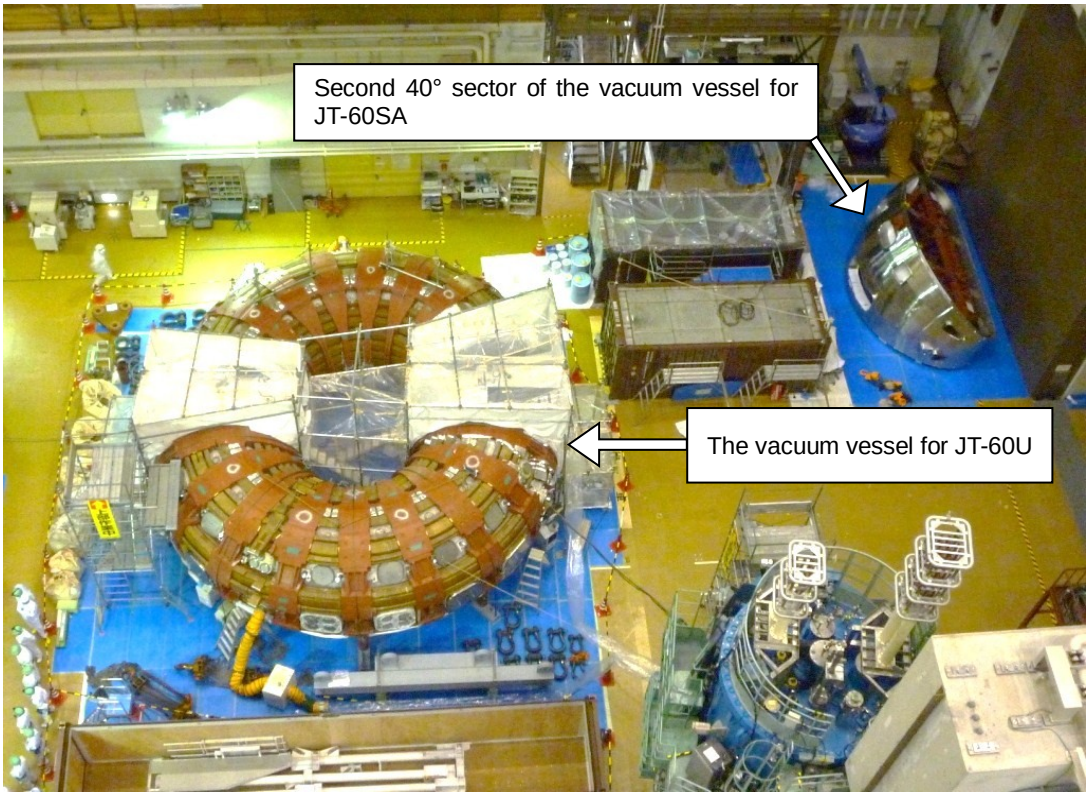
Figure 3: Lower structure sector in the last machining stage

The final assembly of the CB ends in early October, followed by the final dimensional inspection, disassembly and packaging of each sector.

Furthermore, as for the cryostat vessel body plates purchased by JAEA and supplied to F4E/CIEMAT, all the necessary inspections such as a confirmation of the storage conditions of the plate and the customer acceptance inspection were completed.

News

Fourth 40° sector of vacuum vessel delivered to Naka



Inboard and outboard segments of the fourth 40° sector of the vacuum vessel (VV) were delivered to the VV sector assembly building at the Naka site. These segments will be welded and assembled in September when the fifth 40° sector is delivered to the Naka site. Therefore, as shown in the picture, the second 40° sector was moved from that building and temporarily stored beside the reassembled VV for JT-60U in the assembly hall.

News

Dummy pancake of equilibrium field coil No.5 completed

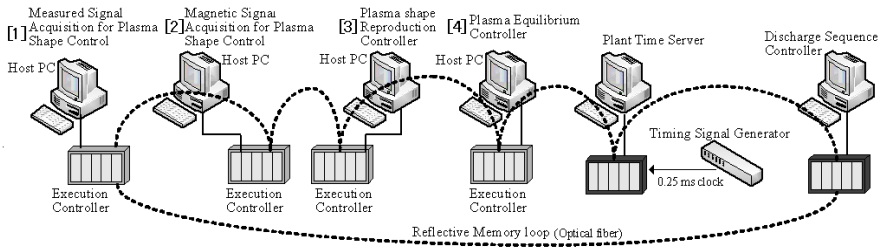
Dummy pancake of the equilibrium field coil No.5

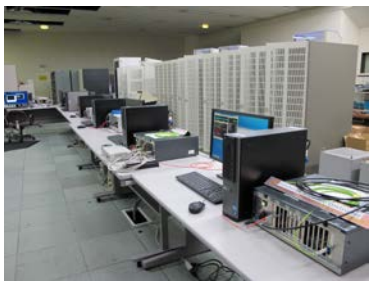
As for the equilibrium field (EF) coils, all conductors for the equilibrium field coil No.6 (EF6) were completed. In the superconducting coil winding building, the manufacture of a dummy pancake for the equilibrium field coil No.5 (EF5) and the winding of a single pancake for the equilibrium field coil No.6 (for two layers) were completed. Furthermore, the manufacture of the support structures for EF4, EF5, and EF6 was started.

As for the central solenoid (CS), after the heat treatment of the resin coating, the turn insulation in windings of a dummy pancake was performed, and the heat treatment for the CS model coil was also performed. The radiation resistance of the insulated wire for measurement, which is used for low temperatures, was measured. As a result of the measurement, it was confirmed that it could sufficiently survive the JT-60SA operating life.

News

Plasma equilibrium control prospects look promising





Real-time data transfer test system

For the plasma equilibrium control of JT-60SA, reflective memory (RM) with INtime, a real-time operating system, will be used. As a result of the real-time data transfer test with the input and output signal points (PF coil data: 90 points, electromagnetism data: 200 points) expected at the time of the first plasma, it can currently be estimated that it is possible to achieve the equilibrium control of the JT-60SA plasma cross-section position at the control period of 0.25ms, which is an objective.

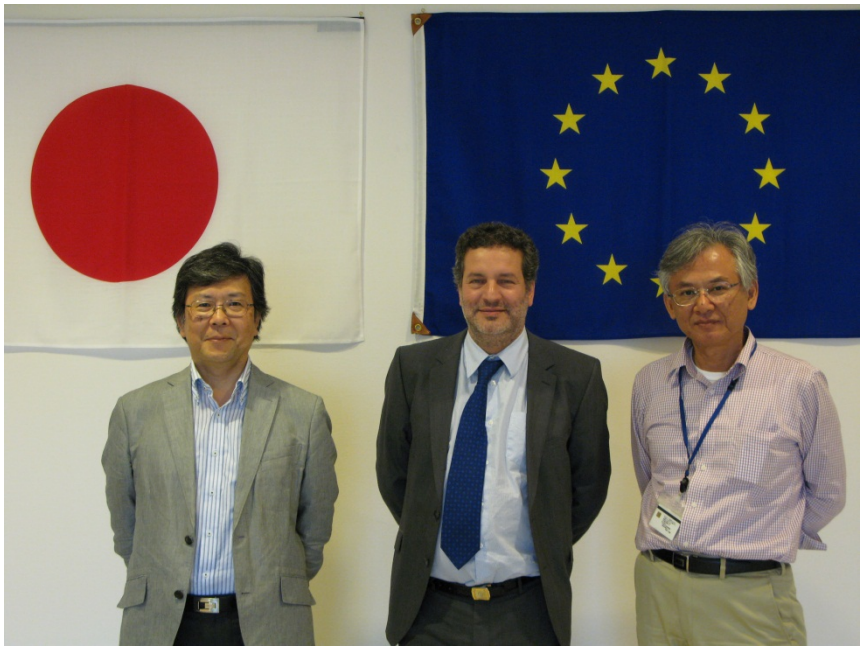
Meetings

11th Design Review Meeting on magnet power supply

The 11th Design Review Meeting (DRM) on Magnet Power Supply of JT-60SA was held to discuss the resistive wall mode (RWM) control Power Supply by videoconference on 23 July 2012 with the attendance of 13 experts from Germany (Fusion for Energy), Italy (Consorzio RFX) and Japan (Naka Fusion Institute). A new conceptual design of the RWM control coils was presented with an increased number of turns and modified conductor characteristics.

Meetings

32nd Project Leaders Meeting



On 20 July, the 32nd Project Leaders Meeting was held at the Rokkasho site in Aomori prefecture, Japan with the Project Leader (PL) of IFMIF/EVEDA, Juan Knaster, appointed as a successor to the interim PL, H. Matsumoto, by the BA Steering Committee in April. Since his arrival in Rokkasho in early July, he has embarked on an exciting life there.

At the meeting, common and respective issues for the next Project Committees and Steering Committee were widely discussed. As for public information management, the enhancement of promotional activities to disseminate information on the BA projects in visible ways was discussed including project websites, newsletters and brochures. For STP-IFERC collaboration, the draft overall plan for the REC was agreed following the results of the PWG-5.

Calendar

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

September 24-28, 2012
27th Symposium on Fusion Technology (SOFT 2012)
Liege, Belgium

October 7-12, 2012
Applied Superconductivity Conference (ASC 2012)
Portland, USA

October 8-13, 2012
24th IAEA Fusion Energy Conference (IAEA FEC 2012)
San Diego, USA

October 16, 2012
11th Meeting of the STP Project Committee (PC-11)
Naka, Japan

November 6, 2012
11th Meeting of the BA Steering Committee (SC-11)
Naka, Japan

Contact Us

The JT-60SA Newsletter is released monthly by the JT-60SA Project Team.
Suggestions and comments are welcome and can be sent to masayasu.sato@jt60sa.org.

For more information please visit the website: http://www.jt60sa.org/