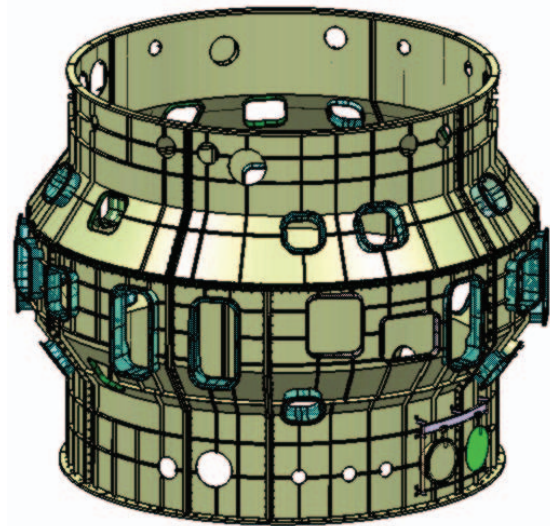
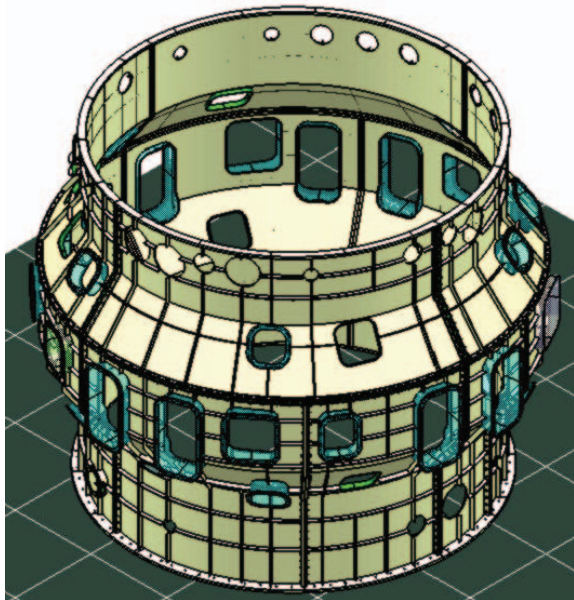


Headline

Technical Specification finalized for Cryostat Vessel Body Cylindrical Section



The Cryostat of JT-60SA is composed of the Cryostat Base (CB), the Cryostat Vessel Body Cylindrical Section (CVBCS), and the Cryostat Top Lid. The Cryostat has the main purpose of insulating the superconducting coils from the environment by means of high vacuum, and to give access to the in-vessel and in-port components including plasma diagnostics and heating systems.

The CVBCS component, to be launched for manufacturing in the coming months, consists of a single-shell vessel (34 mm thick for shielding purpose) subdivided in 12 sectors, as necessary for transport and assembly. The CVBCS shell is externally reinforced with ribs 20 mm thick, to withstand the external atmospheric pressure, the weight of all the ports and port plugs and to withstand seismic events. The subdivided sectors of the CVBCS are connected by bolted flanges and sealed by light, non-structural fillet welds performed from inside and/or outside the cryostat. To enable the vacuum sealing by fillet welds at the bolted flanges, they are nominally offset 25 mm with respect to each other, inside and sometimes also outside. In some small areas, the sealing must use V-type welds instead of fillet welds. The CVBCS consists of two main sub-assemblies, the CVBCS-bottom part (consisting of 8 sectors), and the CVBCS-top part (consisting of 4 sectors). The sectors forming the CVBCS bottom and top parts are welded assemblies of cylindrical and truncated conical sections.

The Procurement Arrangement for the CVBCS was signed on 25 July, and the tendering process for its fabrication will be launched soon, allowing the selection of the company and finally the placing the manufacturing contract. This process will take a few months from the PA signature. The technical assessments of the offers and placement of the contract will be carried out by CIEMAT (Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas) in Spain.

News

Manufacturing of Poloidal Field magnet making steady progress

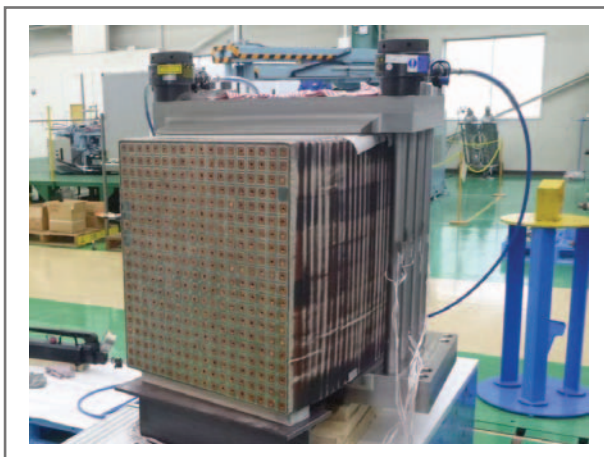


Superconductor for Central Solenoid model coil

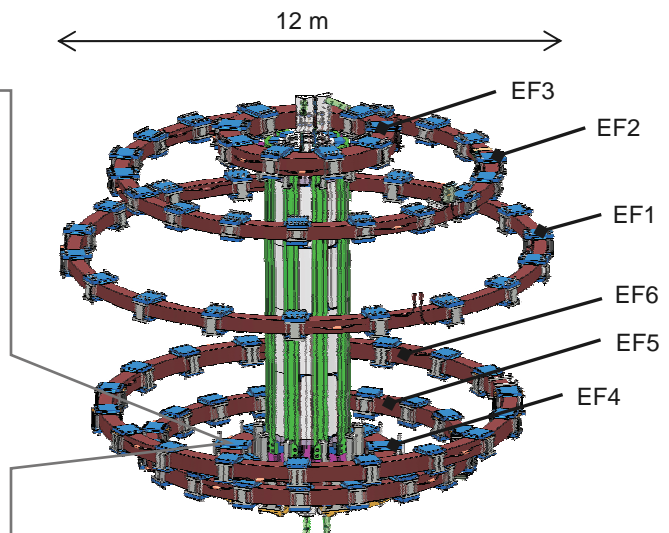
Manufacturing of superconductors was restarted at JAEA Naka fusion Institute in late June after an interruption due to the great earthquake. A Nb_3Sn superconductor for the Central Solenoid model coil, 238 m in length, was manufactured, and wound around a drum 3 m in diameter. It successfully passed required inspections. This model coil will be used to confirm the manufacturing process of the CS coil conductor and modules.

Three double pancakes for the Equilibrium Field Coil No. 4 (EF4) were manufactured, and seven more pancakes are still to be manufactured.

A tightening test of the support structure for the EF coils using copper dummy conductors was performed, and its feasibility was confirmed.

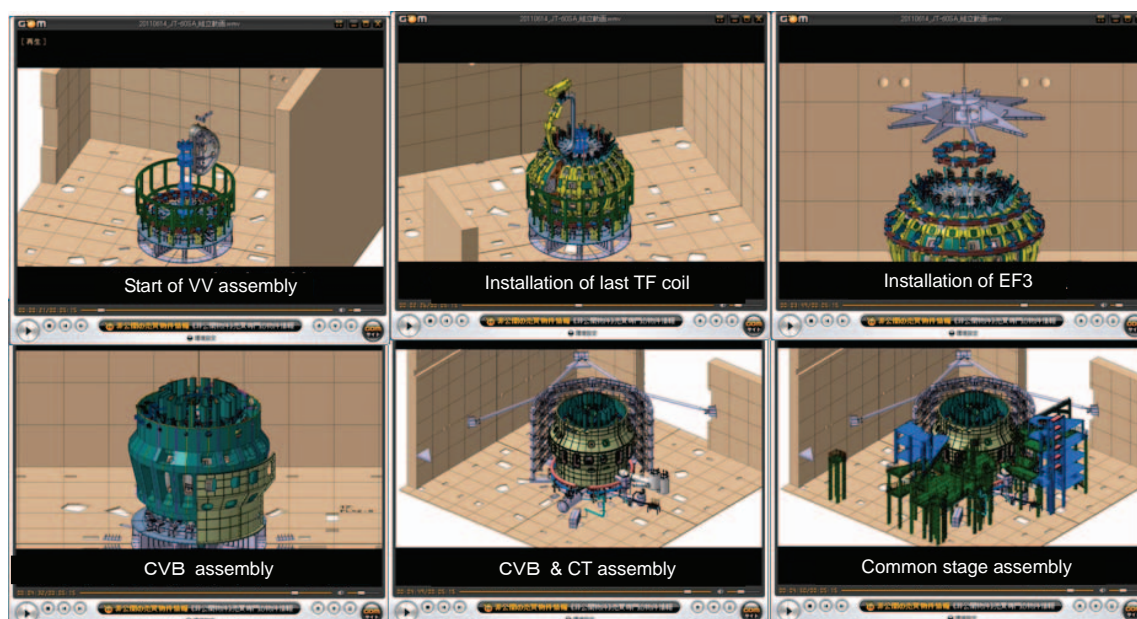


Support structure for EF and copper dummy conductors



News

Detailed discussion of tokamak assembly progressing well



An animation of JT-60SA assembly was developed using 500 drawings to make each assembly step clear from the beginning. In addition to that, assembly jigs and necessary components were all listed, and temporary storage places in the Torus Hall required for them at each assembly step were examined. The assembly process will be detailed further based on these.

News

Procurement Arrangement signed for material of Cryostat Vessel Body Cylindrical Section

The Procurement Arrangement (PA) for the supply of “Material of cryostat vessel body cylindrical section for the Satellite Tokamak Programme” was concluded in July. According to this PA, JAEA will provide the 68 plates of stainless steel with low cobalt content (max. 0.05 wt%) to Fusion for Energy / CIEMAT in Spain for fabrication of the Cryostat Vessel Body Cylindrical Section (CVBCS). The stainless steel plates will be delivered to a factory in Spain in time for the CVBCS manufacturing PA (see above).

Meetings

International conferences held in June to July



The 38th IEEE International Conference on Plasma Science (ICOPS) and 24th Symposium on Fusion Engineering (SOFE) were held in Chicago, Illinois, USA from 26 June through 30 June. The joint association of these two conferences (ICOPS & SOFE) represents an opportunity of close interaction between the international community of researchers in plasma applications and fusion energy development. The conferences had a combined technical program with joint plenary talks and separate plenary and oral talks.

E. Gaio, a member of the EU Home Team, and Technical Responsible Officer (TRO) with Consorzio RFX for the Quench Protection Circuit procurement, gave an invited talk on the JT-60SA Project, on behalf of the EU Project Manager, P. Barabaschi, in a SOFE plenary session. She also gave an oral presentation on the Final Design of the JT-60SA Quench Protection Circuits.

The annual Conference on Plasma Physics organized by the European Physical Society is the main meeting for physicists working on hot plasmas in Europe. This year the conference was organized in Strasbourg from 27 June to 1 July, and gave the opportunity to more than 600 scientists to discuss the latest discoveries in the field of plasma physics.

An oral presentation entitled: "JT-60SA scientific programme toward ITER and DEMO" was part of the conference program, and the key role JT-60SA would play in the development of fusion energy was clearly stated in the presentation. The presentation also provided the opportunity to present to the audience the recently nominated team of 11 TROs, coordinated by G. Giruzzi, which would help to organise the European participation in developing the JT-60SA Research Plan during 2011. This, together with the fact that the presentation itself was made by one member of that team, gave European scientists one further sign of the strong growing collaboration between Japanese and European scientists aiming at the successful exploitation of JT-60SA.

Meetings

1st Meeting of JA and EU TROs for JT-60SA Research Plan



For the revision of the JT-60SA Research Plan (SARP), a first plenary meeting of JA and EU Technical Responsible Officers (TROs) was held by means of video-conference on 7 July, and the TROs from 13 institutes joined the meeting.

After a short presentation by each of the participants, the JA Project Manager, Y. Kamada, presented the status of the Project, and reminded the participants of the main goals and procedures of the SARP revision. The status of the SARP revision activity in the EU was reported by the EU coordinator, G. Giruzzi. A new structure was organized in the EU to carry out this activity with one coordinator and 11 TROs, and about 70 EU physicists participating from 19 Institutes and 9 different countries. The EU coordinator also reported the outcome of the EU meeting held on 28 June as a satellite of the EPS conference.

The EU and JA TROs are working together through intensive and wide discussions towards the next version of SARP, to be completed by December.

Local

Festival of San Juan in Spain



Castle of Santa Bárbara and San Juan beach in Alicante at the final night of the festival

The Festival of San Juan dates back to pre-Christian times and marks the arrival of the summer solstice, the longest day of the year. It is celebrated all over Spain but especially in coastal regions where many people head for the beach, build bonfires and party throughout the night.

The region of Alicante holds one of the biggest celebrations of San Juan. Here it is known as 'Las Hogueras de San Juan' (Bonfires of St John) and the celebrations take place from 20th to 29th June. In the city of Alicante there are large wooden and papier maché figures (similar to 'Las Fallas' in Valencia) which are displayed in the city's main squares and are burnt down on the night of San Juan (24th). The burning begins at midnight once a palm tree shaped firework display has been released from Alicante Castle.

Alicante enjoys several days of fiestas with tents called 'barracas' set up around town where most of the drinking and dancing takes place. At 2pm every day between 20th and 24th June there are deafening fireworks displays in Plaza Luceros. The celebrations continue after the feast of San Juan with more fireworks every evening on the Postiguet beach until 29th June whilst in the city centre there's all kinds of entertainment and a medieval market.

In Andalucia, San Juan is celebrated on the night of June 23rd with some towns, such as Almuñecar in Granada, allowing the beaches to be used as campsites for a single night. On the beaches of Malaga it's common to see people jumping over fires which, according to legend, cleanses the body and soul. Jumping in the sea at midnight is supposed to be a way to wash away evil spirits and to gain eternal beauty. This clearly does not work in many cases, just take a look at the faces of some of the revellers early the next morning!

Menorca is another top place to be for San Juan. In Ciutadella there are several days of street parties centred on the consumption of vast quantities of the local Mahon gin. Horses with riders go up and down the streets whilst locals throw hazelnuts at one another.



Fireworks on the beach



A reveller carries a woman on his back while he walks on the burning embers during the night of San Juan in San Pedro Manrique, Spain, Friday, June 24, 2011.

Calendar

September 11-16, 2011

10th International Symposium on Fusion Nuclear Technology (ISFNT-10)

Portland, USA

September 12-16, 2011

22nd International Conference on Magnet Technology (MT-22)

Marseille, France

September 26-27, 2011

12th Technical Coordination Meeting (TCM-12)

Naka, Japan

September 28, 2011

9th Meeting of the STP Project Committee (PC-9)

Naka, Japan

October 25, 2011

9th Meeting of the BA Steering Committee (SC-9)

Lausanne, Switzerland

December 6-7, 2011

13th Technical Coordination Meeting (TCM-13)

Karlsruhe, Germany

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/>