

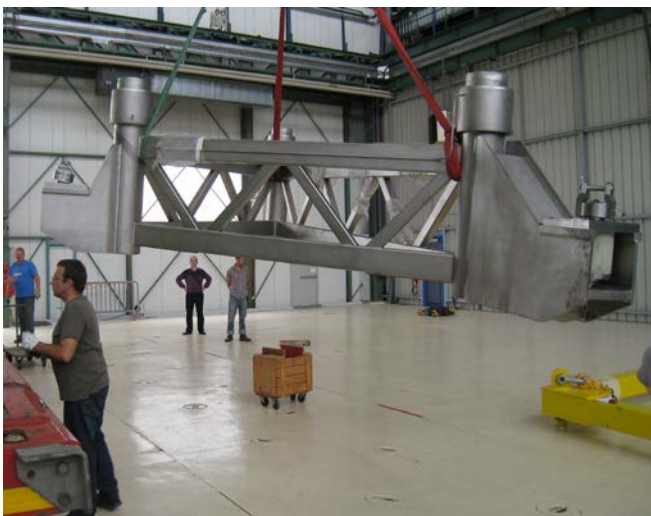
Headline

Major TF coil test facility components delivered to France



On 17 September a convoy of 5 trucks left the ALM Company in Liège (Belgium) to deliver essential components for the TF coil test facility to CEA in Saclay (France). The delivery comprised a large vacuum vessel (cryostat) with a length of 11 m, a width of 7 m and an overall height of 5 m, and an integrated liquid nitrogen shield (see figure above with the lower part of the cryostat), three cryogenic supports for handling and installation of the TF coils in the cryostat, several handling tools, a vacuum system to provide the insulation vacuum during the cryogenic tests, and a valve box vessel as the interface between the helium refrigerator and the cryostat. The cryostat provides the thermal insulation to allow the coils to be cooled close to absolute zero and power them with a current of 25.7 kA.

After their journey through Belgium and France, the coil test frames and the valve box vessel arrived next day at the test facility in Saclay (see figures below). The cryostat transport was much more challenging and required the removal of many traffic signs and other obstacles along the track.





On 21 September the JT-60SA Project leader S. Ishida visited CEA to witness the arrival of the equipment. The delivery of the test cryostat, the test frames and the valve box vessel forms an important milestone for the setup of the TF coil test facility, and completes the Belgian contribution to the JT-60SA project.

News

EU TF strand and TF conductor production status



Figure 1: Production of cable (JC-006 to JC-008)



Figure 2: Witnessing the pressure test of conductor JTF-003

The NbTi TF strand production by Furukawa Electric Co (FEC) is progressing well in line with the schedule. About 6,300 km of NbTi strand (out of a total of 11,200 km) has already been approved by F4E. An additional batch of about 1,700 km is now under F4E review for approval. After recent Cu production refinements and tests on samples performed by FEC it was agreed that Cu RRR (Residual Resistivity Ratio) was under control by FEC and the mass production was restarted. A new production batch is in the course of review by F4E.

The next delivery to the cabling company, Tratos is currently being planned to match their NbTi storage capacity and cabling schedule.

The NbTi T_{CS} (Current Sharing Temperature) control check is reinforced, with benchmarking to be carried out by a third institute (University of Twente) that will evaluate NbTi critical performance and Cu RRR.

Regarding the TF conductor, two full-size samples were tested in SULTAN facility in August and appeared to be performing well in magnetic field and temperature operation-relevant conditions. The two “superdummies” JTF-001 and JTF-002 have been delivered to Alstom and ASG for calibration and testing of the winding machines. At the beginning of September, the conductors JC-003 to JC-008 were shipped to CRIOTEC for jacketing, and subsequent pressure testing. On 14 September, K. Kamiya witnessed the compaction and successful pressure test for conductor JTF-003, which will be used by JAEA for manufacture of the TF coil jumpers. As required by the Japanese HPGL (High Pressure Gas Law), the pressure test was witnessed by an inspector of the German TÜV (Technischer Überwachungsverein - Technical Inspection Association). Jacketing and pressure testing of conductors JTF-004 to JTF-008 is expected to be completed by the end of September.

News

Performance of remote cutting device for divertor cassette pipes confirmed



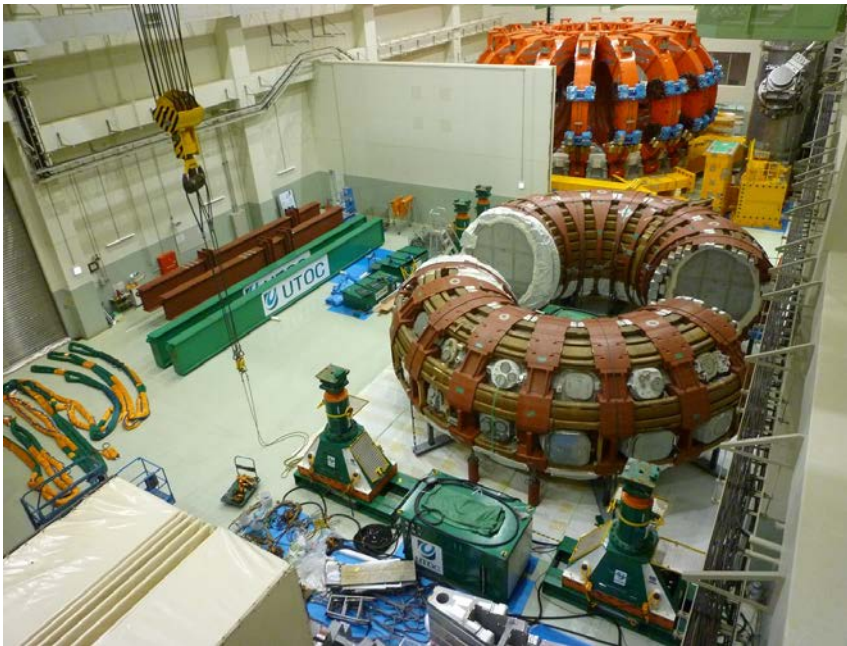
Remote cutting device for divertor cassette pipe

A PA for divertor cassette remote handling tools entered into force in September 2011. Contracts for cutting and welding tools by remote handling for the water pipes of the divertor cassettes were awarded in February. The cutting tool was delivered to the JAEA Naka site in July.

A pipe cutting test was successfully performed at the Naka site (see figure) in August, confirming that the device is capable of cutting two cooling pipes at once. The cutting device remotely cuts a pipe from the inside by using a small blade pushed out from a revolving shaft.

News

Vacuum vessel halves transported and stored in JT-60 storage building



Vacuum vessel stored in the JT-60 storage building

The vacuum vessel (VV) halves (about 170 t and 150 t each), temporarily stored in the assembly hall in July, were transported by “super carrier” (a large machinery carrier trailer) to the JT-60 storage building and stored in the appointed place. Accordingly, the super lift (a knockdown type portal crane) lifted the halves because the lifting capacity of the building crane used in the storage building was less than 100 t. After the completion of the work above, the remaining main parts of JT-60U to be dismantled are the lower frame, the base frame and the supporting column of the VV. Those parts will be disassembled and removed in October.

Meetings

Design Review Meetings on cryoplant and power supply



The 4th Design Review Meeting (DRM) on the cryoplat was held at CEA Grenoble by videoconference, on 11 September with attendance of 16 experts from Germany (Fusion for Energy), France (CEA) and Japan (Naka Fusion Institute). The final confirmation of the Procurement Arrangement was made. Updates to the Action List and Plant Integration Document for the coming TCM-15 were confirmed.



On 18 September, the 12th DRM on the Quench Protection Circuits (DRM-MPS12-QPC) was held prior to TCM-15 at Consorzio RFX, Padua, with attendance of 12 experts. The type test results of the complete poloidal and toroidal QPC prototypes were presented and discussed, including the optimisations to the design resulting from the tests.

Meetings

15th Technical Coordination Meeting held in Padua, Italy



The 15th Technical Coordination Meeting (TCM-15) was held at Consorzio RFX on 19 and 20 September, and 76 experts in total (28 from the JA Home Team, 33 from the EU Home Team, 5 from the Project Team, and 10 invited attendees) participated in the meeting including some experts from France, Germany, Italy, Japan, 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, the thermal shield, the progress of the assembly procedure of thermal shield for vacuum vessel, high temperature superconducting current leads and power supply. The JT-60SA Research Plan status, and EU activities on the JT-60SA plasma assessment, were also reported. The status for the configuration control models was reported and the drawing register was introduced. Updates were agreed to the Action List and Plant Integration Document at the end of the meeting. Participants also visited the prototype under test of the JT-60SA Quench Protection Circuit, the RFX-mod experiment and the PRIMA facility, under construction, for the ITER Neutral Beam Injector development and test.



The date of the next TCM (TCM-16) was confirmed as January 2013 at JAEA in Naka, Japan. The TCM-17 will be held in May 2013 at CEA in Grenoble, France.

Local

From torches to light bulbs



End of September... the time has come again! The most brilliant parade of light in Belgium will move through the town of Ginderbuiten, a suburb of Mol, located in the region of Flanders, guaranteeing a show of sound and light for about 2 hours.



At 20h00 streetlights will be extinguished. Different floats will switch on about 100,000 small lights and will create a magical spectacle for the thousands of people who usually come to gape in admiration. Musical bands and, of course, the historical giants 'Jan and Julia' will accompany the parade, which is a real tourist attraction.

Rumour has it that as long ago as 1885 a light parade existed in the 'Campine' settlement (English translation of the region's Dutch name, Kempen). Originally, the 'Schepersvrienden' (Friends of the shepherd) initiated the whole light parade happening. Decorated with torches and Chinese lanterns, the inhabitants of Mol-Ginderbuiten went through the streets more than 100 years ago as a way of opening the local funfair. Carts pulled by dogs, wheelbarrows, wagons decorated with ferns and broom, and paper lanterns have all appeared in the parade throughout the years. However, at the beginning of the Sixties, the use of light bulbs completely transformed the parade. Until today, the light parade is dominated by the simple and ever-so-beautiful light bulb. For good reason the Light Parade of Mol-Ginderbuiten is still called 'The Parade of the 100,000 small lights', a nickname that makes many natives of Ginderbuiten proud.

Each year the event has expanded and become known well beyond the local town's frontiers. In fact, in the most recent years the parade has developed into an international event attracting thousands of people to Ginderbuiten. It is also well received by the press, and is covered both on radio and on television.

Both spectators and float builders look forward eagerly to the parade.

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Calendar

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

January, 2013

16th Technical Coordination Meeting (TCM-16)
Naka, Japan

May, 2013

17th Technical Coordination Meeting (TCM-17)
Grenoble, France

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/>