JT-60SA Magnet System Status

S. Davis[1], W. Abdel Maksoud[2], P. Barabaschi[1], A. Cucchiaro[4], P. Decool[3], E. Di Pietro[1], G. Disset[2], N. Hajnal[1], K. Kizu[5], C. Mayri[2], K. Masaki[5], J.L. Marechal[3], H. Murakami[5], G.M. Polli[4], P. Rossi[4], V. Tomarchio[1], K. Tsuchiya[5], D. Tsuru[5], M. Verrecchia[1] and M. Wanner[1]

[1]Fusion for Energy, Broader Approach Programme & Delivery Department, Boltzmannstr 2, 85748 Garching, Germany

[2]CEA-IRFU, 91191 Gif sur Yvette Cedex, France
[3]CEA-IRFM, 13108 St Paul lez Durance Cedex, France
[4]ENEA FSN, Via E. Fermi 45, Frascati, Italy
[5]QST, 801-1 Mukoyama, Naka-shi, Ibaraki-ken 311-0193, Japan

Email: sam.davis@jt60sa.org

***Abstract*— The JT-60SA experimental device will be the world's largest superconducting tokamak when it is assembled in 2019 in Naka, Japan (R=3m, a=1.2m). Institutions in the EU and Japan are constructing it jointly under the Broader Approach agreement. Manufacturing of the six NbTi equilibrium field coils, which have a diameter of up to 12 m, has been completed. So far 13 of the 18 NbTi toroidal field coils, each 7 m high and 4.5 m wide, have also been manufactured and tested at 4 K in a dedicated test facility in France. The first three of four Nb_3Sn central solenoid modules have been completed, as have all of the copper in-vessel error field correction coils. Installation of the toroidal field magnet, around the previously welded 340° tokamak vacuum vessel and its thermal shield, started at the end of 2016 and is currently underway. The TF magnet will in turn support the EF and CS coils.**

***Keywords (Index Terms)*— JT-60SA, tokamak, magnet, fusion.**

IEEE/CSC & ESAS SUPERCONDUCTIVITY NEWS FORUM (global edition), October 2017.
Submitted September 6, 2017; Selected October 1, 2017. Reference STP606; Category 6.
MT25 invited presentation Mo-Af-Or4-01. A manuscript was submitted to *IEEE Trans. Appl. Supercond.* for possible publication.