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Thu-Mo-Or17-05: Progress in the construction of the Nijmegen 45T hybrid magnet system

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The High Field Magnet Laboratory of Radboud University is constructing a 45 T hybrid magnet system. The 620 mm bore, 12.3 T, 20 kA, Nb₃Sn cable-in-conduit superconducting outsert magnet has been developed and fabricated in close cooperation with the National High Magnetic Field Laboratory in Tallahassee FL. A 22 MW/40 kA resistive insert magnet will contribute another 32.7 T to the total field. After completion of the outsert coil in 2017 the cold mass has been installed at HFML. The binary (Cu/BSCCO) current leads have been thoroughly tested and are ready for integration. The main cryogenic auxiliary systems like the Linde LR140 refrigerator, the valve box for distribution and conditioning of the supercritical helium flow, the Stirling cryo-generator for cooling of all system's radiation shields and their connecting cryo-lines have been submitted to a partial functional system test. The present development status of the cryostat, the superconducting bus bars, system control, coil protection and the resistive insert is presented in this paper.

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