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P2.099 ITER magnet coil power conversion building construction and AC/DC converter installation

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ITER (IO) magnet coil power supply system is the world largest AC/DC conversion system which is jointly contributed by China, Korea including PF, CS, VS, TF and CC AC/DC converters with total capacity 2853 MVA and the associated Fast Discharge Unit, Switch Network Unit and DC Busbar from Russia Federation. All ITER coil power supply AC/DC converters will be installed in the magnet power conversion buildings (MPCB) constructed by European Union.

MPCB includes two framed structured buildings No.32&33 with seismic classification of SC2. Each building consists of the volume of 150m long, 31m wide and 7.5 m high hosting two groups AC/DC converters along the building on north and south. The construction started from October 2013 which is approaching Ready for Equipment (RFE) in august 2018.

As a part of the converter design and manufacture, the installation of AC/DC converters was taken into account during the life cycle of AC/DC converter development particularly on design review and manufacture stages which goes in parallel with MPCB design and construction. 32 AC/DC converter units for ITER project Phase-I will be installed and integrated on IO site from 2018 after the building RFE till 2021. Technically the interface between building construction and all sorts of DA converter components are managed by IO. As the early installation, 5 PF transformers from China had been positioned on transformer foundations as per the early access of MPCB in 2017.

This paper describes the ITER magnet power conversion buildings, briefs the construction progress and RFE conditions. The converter integration and installation as well are detailed in terms of layout configuration, installation sequence, schedule integration, site management and coordination.

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