

INSTALLATION AND INITIAL RUN OF 96KV 7.2MW ACCELERATION GRID POWER SUPPLIES

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- PSM based 7.2MW, 96kV modular High Voltage Power supplies have been developed to feed the Acceleration Grid of Beam sources of SPIDER & DNB.
 - Design redundancy ~15% allows for tolerating partial failure without leaving the ongoing campaign. The AGPS is designed to turn off in a time much lower than 100 μ s to minimize the energy (20 J) delivered to the arc in case of short circuit or breakdown.
 - AGPS consists of Multi-Secondary Transformers (3nos. 2.8MVA each), Switched Power Supply (SPS) Modules (150nos., 60kW each), FPGA/Real Time based controller; factory tested in witness of IO representative.
 - Novel, state of the art technologies for HV insulation such as multiple bushings integrated on large resin insulators and building feedthroughs have been developed to meet the site requirements.
 - Operational drills at ITER-India lab demonstrated protection functions, insulation test and specified behaviour of AGPS on dummy load. Advance acquaintance mimicking site constraints proved instrumental in successfully completing the final testing of AGPS at NBTF, Padua.