

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

Sorting Category: 7.1.0 (Experimental)

**The Pulsed Power Supply System for Ignitor\*** A. COLETTI, G. CANDELA, R. COLETTI, P. COSTA, G. MAFFIA, M. SANTINELLI, F. STARACE, ENEA, Italy, M. SFORNA, GRTN, Italy, G. ALLEGRA, L. TREVISAN, CESI, Italy, A. FLORIO, A. MONNE, Ansaldo-Ricerche, Italy, R. NOVARO, ASI Robicon — Thyristor amplifiers are adopted to drive the Ignitor poloidal and toroidal field coils generating the magnetic field necessary to confine the plasma column. A distributed Poloidal Field Coil (PFC) system, made of 13 up and down symmetric coils, regulates the plasma current and controls both plasma position and shaping. An iterative optimization process of the whole power supply system, carried out in collaboration with Ansaldo Ricerche and ASI Robicon, has identified the most appropriate current distribution within each PFC and led to modify the coil geometry, easing the requirements on the power supplies and on the adopted materials relative to previous analyses. As a result, the total installed power (defined as  $V_{max} \times I_{max}$ ) has been reduced from about 3300 MVA to 2400 MVA. The appropriate government authority, GRTN, has carried out an in-depth analysis of the connection of the Ignitor power supply to the Italian 400 kV Grid at the node of Rondissone (near Turin), a possible site for the experiment. The power requirements were found to be consistent with the European 400 kV grid operational requirements.

\*Sponsored by ENEA of Italy.

Prefer Oral Session  
 Prefer Poster Session

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Special instructions: Ignitor poster session #14

Date submitted: July 25, 2005

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