

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

CATIA-V 3D Modeling for Design Integration of the Ignitor Machine Load Assembly* A. BIANCHI, B. PARODI, F. GARDELLA, Ansaldo, Ricerche, Italy, B. COPPI, MIT — In the framework of the ANSALDO industrial contribution to the Ignitor engineering design, the detailed design of all components of the machine core (Load Assembly) has been completed. The machine Central Post, Central Solenoid, and Poloidal Field Coil systems, the Plasma Chamber and First Wall system, the surrounding mechanical structures, the Vacuum Cryostat and the polyethylene boron sheets attached to it for neutron shielding, have all been analyzed to confirm that they can withstand both normal and off-normal operating loads, as well as the Plasma Chamber and First Wall baking operations, with proper safety margins, for the maximum plasma parameters scenario at 13 T/11 MA, for the reduced scenarios at 9 T/7 MA (limiter) and at 9 T/6 MA (double nul). Both 3D and 2D drawings of each individual component have been produced using the Dassault Systems CATIA-V software. After they have been all integrated into a single 3D CATIA model of the Load Assembly, the electro-fluidic and fluidic lines which supply electrical currents and helium cooling gas to the coils have been added and mechanically incorporated with the components listed above. A global seismic analysis of the Load Assembly with SSE/OBE response spectra has also been performed to verify that it is able to withstand such external events.

*Work supported in part by ENEA of Italy and by the US D.O.E.

B. Coppi
MIT

Date submitted: 19 Jul 2007

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