

Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Major Disruptions and Other Issues Driving the Design of the Ignitor Plasma Chamber¹ G. RAMOGIDA, P. FROSI, ENEA, Italy, B. COPPI, M.I.T. — The Plasma Chamber of the Ignitor machine is designed according to the information available about electromagnetic loads coming from the experimental knowledge and the increasingly accurate numerical models of the eddy and halo currents resulting from the worst disruption events in existing machines. The developed models deal with static, dynamic and modal analysis. The loads during nominal operations and also those arising from plasma disruptions, by far the most important ones, have been taken into account, as well as the design problems arising from the Mo tiles in the inboard edge of the vacuum vessel, the Faraday shields covering the 6 ports devoted to the ICRH system and, finally, the reaction forces coming from the regions of constraints with the C-Clamps (the retaining structure that support the plasma chamber both statically and dynamically). The plasma chamber has to perform several additional functions, such as to keep the vacuum, be bakeable, and support the set of plates that carry the Mo tiles facing the plasma column. According to the present design the chamber is made of Inconel and has a thickness varying from 26 to 52 mm.

¹Sponsored in part by ENEA of Italy and by the U.S. D.O.E.

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Date submitted: 13 Jul 2012

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