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Acoustically Driven Magnetized Target Fusion At General Fusion: An Overview PETER O'SHEA, M. LABERGE, M. DONALDSON, M. DELAGE, General Fusion Inc, THE GENERAL FUSION TEAM — Magnetized Target Fusion (MTF) involves compressing an initial magnetically confined plasma of about $1e^{23}$ m^{-3}, 100eV, 7 Tesla, 20 cm radius, >100 μsec life with a 1000x volume compression in ˜100 microseconds. If near adiabatic compression is achieved, the final plasma of ˜$1e^{26}$ m^{-3}, 10keV, 700 Tesla, 2 cm radius, confined for 10μsec would produce interesting fusion energy gain. General Fusion (GF) is developing an acoustic compression system using pneumatic pistons focusing a shock wave on the CT plasma in the center of a 3 m diameter sphere filled with liquid lead-lithium. Low cost driver, straightforward heat extraction, good tritium breeding ratio and excellent neutron protection could lead to a practical power plant. GF (65 employees) has an active plasma R&D program including both full scale and reduced scale plasma experiments and simulation of both. Although acoustic driven compression of full scale plasmas is the end goal, present compression studies use reduced scale plasmas and chemically accelerated Aluminum liners. We will review results from our plasma target development, motivate and review the results of dynamic compression field tests and briefly describe the work to date on the acoustic driver front.

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