

BOILER AND PRESSURE VESSEL ANALYSIS OF A MINI-CHANNEL BEAM DUMP

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The Facility for Rare Isotope Beams (FRIB) is a high-power heavy ion accelerator facility at Michigan State University completed in 2022. Its driver linac is designed to accelerate all stable ions to energies above 200 MeV/u with beam power of up to 400 kW. Currently, FRIB is operating at 10 kW, delivering multiple primary beam species. The beam dump absorbs approximately 75% of the primary beam power. The existing beam dump head can accommodate up to 10 kW operation, with a planned transition to a mini-channel beam dump design. Presented here is an overview of the mini-channel beam dump head and details the Boiler and Pressure Vessel Code analysis in ANSYS® simulations.

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