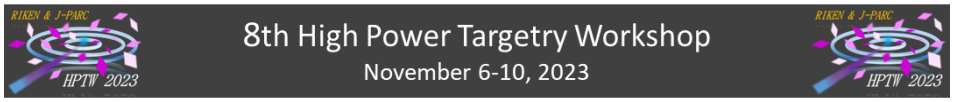

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FRIB Remote Handling –Operations Experience and Future Plans

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FRIB Remote Handling –Operations Experience and Future Plans*

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The Facility for Rare Isotope Beams (FRIB) is a heavy ion accelerator facility aiming to reach 400kW primary beams, which will extend the heavy-ion accelerator power frontier by more than one order of magnitude. FRIB's superconducting radio frequency continuous-wave heavy-ion linear accelerator can accelerate all ions up to uranium to energies above 200 MeV/u.
FRIB's Target Hall takes a hybrid approach where personnel access is permitted once beam is turned off and all shielding remains in place. Within the target hall there is a rotating graphite target, water filled beam dump, and energy degrader that require intricate and frequent reconfiguration and maintenance.
At 400kW, the beam impacts the rotating target which absorbs 100kW while the unreacted beam totaling 300kW is dumped into the water filled beam dump. Both the target and energy degrader require reconfiguration to support user experiments at a frequency of up to once per week. Maintenance on the target, energy degrader, and dump outside of experiment reconfiguration occurs annually.
FRIB beam power has steadily increased to 5 kW since the commencement of user operations in May 2022 and is now entering 10kW operations. One of the challenges for remote hanlding will be fulfilling the requirement of reconfiguring both the target and energy degrader within 24hrs for user experiments. The current time to complete the reconfiguration is 48hrs and will require additional assemblies and provisions to reduce to 24hrs. In this presentation, we report the recent activities and status of remote handling equipment and procedures, how remote handling scope has changed and adapted during power ramp up, and the future remote handling operations at FRIB.

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Themes for the contribution

5 Target facility challenges:

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