

Diagnostics for ATLAS Reaccelerated RIB Operations

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The Argonne Tandem Linear Accelerator System (ATLAS) is in the process of upgrading the suite of diagnostics used to optimize and deliver radioactive ion beams from the Californium Rare Isotope Breeder Upgrade (CARIBU) Electron Beam Ion Source (EBIS) charge breeder. Historically beta decay detectors were used exclusively throughout the accelerator from low (<50 keV) to high energies (>100 MeV), but they have important limitations. In addition to the current beta decay detectors, multi-channel plate (MCP) detectors and gas ionization detectors will be deployed. Each detector type provides unique advantages that will enable ATLAS to improve the transmission, quality, and operational efficiency of CARIBU RIB delivery.

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