

DEVELOPMENTS OF RIB TARGET MODULE AND REMOTE HANDLING SYSTEM AT RISP

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The heavy ion accelerator facility is under construction at Rare Isotope Science Project (RISP) in Korea. Rare Isotope Beams (RIB) using the Isotope Separation On-Line (ISOL) technique will be produced via fission reaction on uranium induced by a 70 MeV proton beam with power up to 70 kW. In this case, high power beam brings up major challenges for target assembly technology and remote handling and on the design of the beam production areas. There are two target stations to maximize the availability of the RIB experimental facility. This allows one target station to be operational while the other is being serviced. The target module is comprised of concrete shielding plug about 2 meters long on the bottom of which is installed the target-ion source, the beam extraction system. The radiation-hard remote and quick connectors for electric power and water are made outside the shielding and the vacuum enclosure. For exchange of target-ion source chamber and packing of used UCx target, the target module is lifted up by a remote crane and automatically transported to hot cells in the target maintenance hall. Remotely controlled overhead crane equipped with the lifting system to automatically hoist modules has technical requirements for high reliability and safety operation and reduction of radiation damage to components. We present details of the target station and target maintenance hall design, remote crane specification, procedures for target and module handling, hot cell facility and contamination control.