Enriched Stable Isotope Pilot Plant

Description

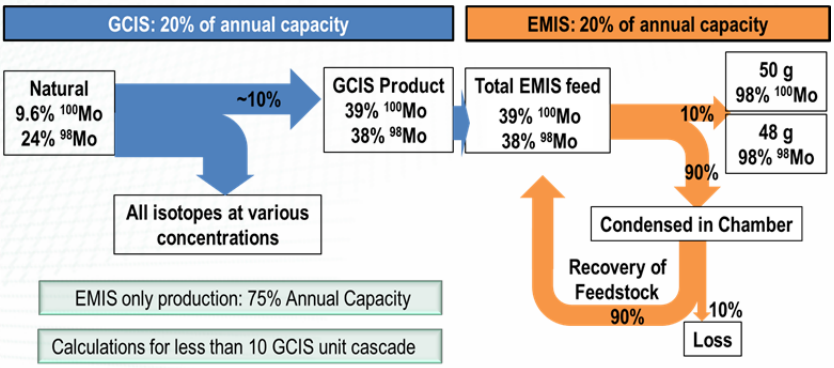
The Enriched Stable Isotope Pilot Plant (ESIPP) is establishing a domestic stable isotope enrichment capability to meet the international needs of the medical, industrial, national security, and scientific communities. This pilot plant is deploying high-throughput, low-enrichment gas centrifuges and high-enrichment, low-throughput electromagnetic separators to create a flexible, scalable, and efficient facility for enriching milligram to gram quantities of the broad spectrum of stable isotopes. The ESIPP is sponsored by the DOE Office of Science, Nuclear Physics, Isotope Program, and is supported by a multidisciplinary, multi-directorate team, which includes expertise in mass spectrometry, nuclear science and engineering, plasma and accelerator physics, prior US calutron operations, chemistry, and gas centrifuge technology.

The currently funded scope of the ESIPP includes one automated, production class electromagnetic isotopes separator (EMIS) and a small cascade of 9 gas centrifuge isotope separators (GCIS) that have been specifically designed for stable isotopes. The recently renovated laboratory space in Building 6010, which houses the ESIPP, has been built for scalability and flexibility. The 6010 laboratory is a 50 x 50 foot high bay space equipped to support these isotope separators. The laboratory space includes adequate toxic exhaust and electrical capacity to accommodate up to three production class EMIS units and less than 50 unit gas centrifuge cascade, or two EMIS units and a less than 100 unit gas centrifuge cascade. The expansion of the ESIPP to include additional separators is expected to begin in FY 2017.

Prototype EMIS unit

ESIPF located in Building 6010-STS

Date: March 2016



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