

2017 Mo-99 TOPICAL MEETING ON MOLYBDENUM-99 PRODUCTION TECHNOLOGY DEVELOPMENT

SEPTEMBER 10-13, 2017
MONTREAL MARRIOTT CHATEAU CHAMPLAIN
MONTREAL, QC CANADA

Argonne Expertise and Capabilities

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ABSTRACT

Argonne has assisted multiple potential Mo-99 producers for the past several years by developing flowsheets for production, recovery, and purification, designing columns for Mo-99 separation and recovery, dissolving and recycling targets, generating waste immobilization and disposal pathways, and taking processes from the benchtop to the pilot-scale. It has also developed targets and processes for the conversion from HEU to LEU. Our team has expertise in many areas that may be useful to potential isotope producers including: aqueous and pyrochemical separations, target design and fabrication, radiation effects on materials and components, accelerators, calculations, design of flowsheets, and waste treatment and disposal. Additionally, we have hot cells with manipulators, gloveboxes, radiological laboratories, a 3-MeV Van de Graff accelerator, and a 55-MeV electron linac, which have all been used to support Mo-99 activities as well as the production of Cu-67 through the Isotope Program. Additional R&D efforts through internal funding have focused on the production, separation, and purification of Sc-47. Argonne's successes with the Mo-99 program, expertise and facilities, and plan for expanding beyond Mo-99 will be discussed.

Work supported by the U.S. Department of Energy, National Nuclear Security Administration's (NNSA's) Office of Defense Nuclear Nonproliferation, under Contract DE-AC02-06CH11357. Argonne National Laboratory is operated for the U.S. Department of Energy by UChicago Argonne, LLC. The U.S. Government retains for itself, and others acting on its behalf, a paid-up nonexclusive, irrevocable worldwide license in said article to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government.