

**2018 Mo-99 TOPICAL MEETING ON  
MOLYBDENUM-99 PRODUCTION TECHNOLOGY DEVELOPMENT**

**SEPTEMBER 23-26, 2018  
HILTON KNOXVILLE HOTEL  
KNOXVILLE, TN**

**Xenon Abatement Studies**

P. Humble, C. Doll, A. Contreras, Judah I. Friese, J. Hayes  
Pacific Northwest National Laboratory, 638 Horn Rapids Rd., Richland WA 99354, U. S.

**ABSTRACT**

Pacific Northwest National Laboratory (PNNL) scientists have over 2 decades of experience in the development of noble gas collection systems used for a variety of applications. PNNL experts have been engaging with domestic and international producers on reduction of the impact of emissions from fission based isotope production and have been developing a working knowledge of the Mo-99 abatement processes worldwide. PNNL has recently begun studies to support Mo-99 producers in understanding effluent release points in their process and facility, to identify and characterize different adsorbent materials that could be integrated into their carbon delay bed design for xenon and iodine retention, and to perform finite element modeling of thermal characteristics of adsorption beds and effects due to radioactive decay. Results from these studies will be provided on an equal basis to any parties interested as some of the work is expected to be have general applicability to other processes.