

PNNL-4: Source Term Analysis of Xenon (STAX) – Exploring Methods for Understanding Radioxenon Civilian Source Terms

The radioxenon background in the atmosphere is dominated by civilian sources, most noticeably from the production of 99Mo from fission of uranium. Radioxenon from these sources are detected every day in the International Monitoring System (IMS). In an effort to minimize the impact of these radioxenon emissions on the IMS, the STAX project has been conceived to measure the emissions at the civilian sources using standard stack detectors, and send this emission data to the nuclear explosion monitoring (NEM) community. We describe the data needed by the NEM community and how it will be provided by the STAX project, the detector systems needed to collect the radioxenon emission data, and the data security mechanism to ensure propriety information from commercial production facilities is appropriately protected.

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