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Xenon International: A New Capability for Radioxenon Measurements

Xenon International is a new ground-based radioxenon measurement system being developed at the Pacific Northwest National Laboratory (PNNL) built to realize the lessons learned from the International Noble Gas Experiment. Specifically, the Xenon International system provides better sensitivity to radioxenon isotopes, faster throughput of samples, and higher reliability of operation. The goal of the Xenon International project is to develop a xenon collection, purification, and analysis system that will detect evidence of nuclear explosions. Development of two pre-production prototype systems, one built by PNNL, and one built by Teledyne Brown Engineering (TBE), has been completed. Significant testing and evaluation of system operation and operational performance has been performed on both systems. Each prototype has also completed equivalency testing to assure that the Xenon International system can be successfully built and operated by a commercialization partner. The Xenon International system will complete formal verification testing and a field test at Charlottesville, Virginia, USA in 2017 – 2018. This presentation/poster will highlight the tests performed during formal testing, and will present the results. Completion of formal testing is the gateway to passing into formal pre-production.

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