

International Acceptance Testing

Wednesday, 21 June 2023 11:34 (1 minute)

Xenon International is a next generation radionuclide monitoring system that was developed at PNNL and being manufactured at Teledyne Brown Engineering (TBE) to strengthen nuclear test monitoring and has recently completed Provisional Technical Secretariat (PTS) testing and was accepted as a qualified system for the International Monitoring System (IMS). Xenon International processes samples every six hours generating over 2.5 cc of xenon gas that is counted in a beta-gamma coincidence detector for 12 hours resulting in unprecedented detection limits for radionuclide isotopes. Phase 1 testing was conducted at TBE and Phase 2 was conducted at Schauinsland Germany at RN33 radionuclide station. Xenon International completed acceptance testing with >96.93% uptime, and routinely detected never-before seen radionuclide isotopes in an IMS station including Xe-125, Xe-127, and Xe-129m during Phase 1 of testing. This talk will discuss Xenon International performance during PTS testing and will discuss expected and unexpected radionuclide isotope detections.

E-mail

jc.hayes@pnnl.gov

Promotional text

The work cited in this presentation fosters strengthening nuclear test monitoring through development of advanced radionuclide detection systems. Xenon International strengthens remote monitoring of nuclear explosion, data interpretation, and data availability of complex systems.

Oral preference format

in-person

Primary authors: HAYES, James (Pacific Northwest National Laboratory (PNNL)); Mr ORR, Aaron (Teledyne Brown Engineering, Inc); Mr BOLLHOFER, Andreas (Federal Office for Radiation Protection (BFS)); Mr CARTER, Kevin (Teledyne Brown Engineering, Inc); Mr PANISKO, Mark (Pacific Northwest National Laboratory (PNNL)); Mr COOPER, Matthew (Pacific Northwest National Laboratory (PNNL)); Mr MAYER, Michael (Pacific Northwest National Laboratory (PNNL)); HOWARD, Michael Robert (Teledyne Brown Engineering, Inc); Mr ES-LINGER, Paul (Pacific Northwest National Laboratory (PNNL)); MIKULYAK, Robert (Teledyne Brown Engineering, Inc); Mr KRAIS, Roman (Federal Office for Radiation Protection (BFS)); SAYNE, Ryan (Teledyne Brown Engineering, Inc); Ms BRANDER, Sofia (Federal Office for Radiation Protection (BFS)); GOMULINSKI, Tricia (Teledyne Brown Engineering, Inc); HARPER, Warren (Pacific Northwest National Laboratory (PNNL))

Presenter: HAYES, James (Pacific Northwest National Laboratory (PNNL))

Session Classification: Lightning talks: P2.2, P3.2, P3.6

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.2 Radionuclide Technologies and Applications