



ID: O3.2-218

Type: Oral

-term verification of radionuclide laboratory gain and efficiency stability

Thursday, 1 July 2021 16:20 (15 minutes)

As radionuclide samples are collected around the world at the CTBTO IMS stations, a subset of those are sent to radionuclide laboratories around the world for re-analysis. PNNL operates the U.S. Noble Gas Laboratory (US-NGL), which was certified in December of 2016. There is also an opportunity to utilize the radionuclide laboratories in a field system comparison experiment. In this presentation, we detail current and potential future methods of utilizing the radionuclide laboratories. For a laboratory system to be used for verification of continuously operating systems, it is important to routinely validate the energy and efficiency calibration of the laboratory system. We discuss long-term verification measurements made for USL16-NGL and the methods utilized to ensure stable operation. Additionally, we present the impact of the enhanced throughput on such scenarios and how to ensure that the operational role is maintained during experiments.

Promotional text

Long-term monitoring and verification of noble gas laboratories allows for improved confidence in the IMS data and analysis

Primary authors: Mr FOXE, Michael (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA); Mr BOWYER, Theodore (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA); Mr CAMERON, Ian (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA); Mr COOPER, Matthew (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA); Mr HAYES, Jim (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA); Mr MAYER, Michael (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA); Ms MENDEZ, Jennifer (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA); Mr SLACK, Johnathan (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA)

Presenter: Mr FOXE, Michael (Pacific Northwest National Laboratory (PNNL), Richland, WA, USA)

Session Classification: T3.2 - Laboratories Including Transportable and Field Based Facilities

Track Classification: Theme 3. Verification Technologies and Technique Application: T3.2 - Laboratories Including Transportable and Field Based Facilities