

2.4-P07. Incorporating Radionuclide Stack Monitoring Data into the International Data Centre

The Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) operates a worldwide network of noble gas detection systems as part of the International Monitoring System (IMS). These systems take daily atmospheric measurements of trace quantities of radioxenon, one of the most important signatures expected from a nuclear explosion, and report results to the International Data Centre (IDC) in Vienna, Austria. Recently, the CTBT scientific community has discovered that the fission-based production of the medical isotope molybdenum-99 (Mo-99) produces radioxenon effluents in ratios and quantities similar to those expected from a nuclear explosion. In large enough quantities or close enough proximity, these emissions can pose significant challenges to the CTBTO's analysis of IMS detections. One way to mitigate some of the challenges presented by xenon emissions is for medical isotope producers to share facility stack monitoring data with the CTBTO, which would help to better identify civil sources of radionuclide detections. This presentation examines the verification benefits to sharing stack monitoring data, as well as some of the barriers that currently exist to incorporating this data into the IDC.

Primary author: CAMERON, Ian (Pacific Northwest National Laboratory)

Presenter: CAMERON, Ian (Pacific Northwest National Laboratory)

Track Classification: 2. Events and their characterization