

## of Nuclear Detector Technologies on Radioxenon Laboratory Operation

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Recent efforts have explored the use of high resolution beta detectors for improved metastable isomer discrimination. These detectors have been focused on implementation within the IMS stations for detection of all four radioxenon isotopes. The duration between collection and measurement is increased for radioxenon laboratories. Based on the shipping duration and sample type (spike versus environmental sample), there may only be Xe-133 and Xe-131m present in samples that are sent from an IMS station. Depending on the isotopes present, there is the potential that the choice of nuclear detector may be preferential for one type over another. In this presentation, we evaluate the implementation of plastic scintillator beta cells and silicon beta cells for radionuclide laboratory operation. As part of this, we evaluate the impact of potential sample activities and isotopic ratios.

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### Promotional text

Implementation of the radioxenon laboratories differs from the particulate laboratories due to the shorter half-lives of the radioxenon isotopes. We evaluate the impact of detector variations on the radioxenon samples (spikes/environmental samples) at a radioxenon laboratory.

### Oral preference format

in-person

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