ID: Type: **Poster**

Proposed Medical Isotope Experiments for Detection Validation

Fission gases such as Xe-133 are used extensively for monitoring the world for signs of nuclear testing in the International Monitoring System (IMS). Medical isotope production for Mo-99 is an additional source of radioxenon that has been shown to also be detected in the IMS. Understanding and interpreting interferences from medical isotope production is still a relatively new concept. This work will present many different ideas for experiments that will allow various parts of the problem at hand to be validated. Proposed experiments will address methods to better understand releases from facilities and subsequent detections in the IMS. Many of these ideas will rely on collaboration between facilities and the monitoring community. Experiments will address data correlation between what is released (as determined by stack monitoring) and what is detected at a remote location, calibrated releases, effluent characterization and many others.

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Track Classification: Theme 1: The Earth as a Complex System