ID: Type: **Poster**

Development of an Electrostatic Precipitator System for Radionuclide Particle Collection

Electrostatic precipitation offers an approach to aerosol collection that can provide greater operational flexibility and improved instrument sensitivity to accommodate future radionuclide aerosol monitoring requirements. Due to inherently low pressure drops through the aerosol collector, an electrostatic precipitator (ESP) can accommodate much higher sample flow rates than comparable filter-based systems. The performance can be dynamically adjusted by controlling independent parameters, such as flow rate and the electric field strength within the precipitator. This control allows operators to enhance or reduce particle collection in real time, adjusting to changing radionuclide load conditions, and operate in a low-power mode during times of limited power availability. We present the development of a new radionuclide collection system that employs a custom electrostatic precipitator and sample handling system to interface with existing and new detector systems. Our aerosol collector realizes significant power savings over existing radionuclide aerosol collection systems, minimizes sample cross-contamination, and provides opportunity to enhance detection instrument sensitivity through more compact samples and higher sampling flow rates.

Primary author: SWANWICK, Michael E. (Creare LLC)

Presenter: SWANWICK, Michael E. (Creare LLC)

Track Classification: Theme 3. Verification Technologies and Technique Application