CONCURRENT SESSION 6 – RADIOLOGICAL RESEARCH STUDIES SESSION

Laboratory Study on the Efficacy of Air Phase Decontamination of Radioactive Particles

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Response to Chemical, Biological, Radiological, Nuclear (CBRN) events tend to require large quantities of water and the infrastructure to support it according to the size of the event. However, depending on the location and damage caused by said CBRN event there may not be the water infrastructure needed to adequately respond or it may fall below the temperature guidelines to deploy such systems safely and effectively.

For these types of situations we have designed, constructed, and tested an air jet based approach for decontamination of the subject and recovery of the particulate matter. Pork skin and Cesium Chloride (CsCl) were used as a skin analog and contaminant to test the system. Using gravimetric analysis it was found that the jet of air at 20 psi was able to remove 100% of the CsCl from the skin analog and that a negative pressure environment is able to capture dislodged particulate matter. More research is needed to explore this the area with different contaminants and analogs however the current set results are promising and may lead to new innovations in the field.