

IMPROVED PU AND U MEASUREMENTS FOR NAREL'S RADNET SYSTEM

Shane Knockemus, US EPA / NAREL

knockemus.shane@epa.gov

An important role of the National Analytical Radiation Environmental Laboratory (NAREL) plays is the operation of RadNet. RadNet is a nationwide system that monitors the air, water, and precipitation. This presentation will focus on the air portion of the RadNet system. We have approximately 130 fixed (stationary) air stations across the United States that take measurements 24 hours a day 7 days a week. Near real-time gamma information is possible with each station. The fixed air stations are operated by volunteers who change the filters twice a week, and return them to NAREL. Once at NAREL, the filters are analyzed for gross beta, and held for annual composite. The year's worth of filters are composited according to locations and are ashed in a muffle furnace. An aliquant of the filter ash is removed and processed for uranium and plutonium analysis. This presentation will focus on improvements in the sample preparation and subsequent analysis of U and Pu we hope to implement at NAREL. These improvements include a sodium hydroxide fusion which will allow for an increase in sample aliquant up to 4 times the normal aliquant taken, thus greatly improving uncertainty in counting statistics. The radiochemical separation scheme to be tested is also an improvement when compared to our current method. The separation scheme employed involves a one cartridge separation technique using Eichrom's TRU resin.