

Xenon International

Xenon International is a next-generation ground-based radioxenon measurement system developed by Pacific Northwest National Laboratory in collaboration with Teledyne Brown Engineering (TBE). Xenon International processes samples every 6 hours and collects more than 2.5 times the amount of xenon gas over first-generation systems improving detection sensitivity by nearly a factor of two. During a one-year field test at the International Monitoring System (IMS) station RN75 in Charlottesville, VA, U.S.A., Xenon International measured atmospheric radioxenon samples while located next to the U.S. IMS system USX75 – a SAUNA system – from July 2018 through July 2019. The goal of the field test was to determine system reliability and uptime, and data flow to the U.S. National Data Center (NDC) of the system while operated by U.S. IMS station operators. This presentation reviews the field testing results and data evaluation between the Xenon International system and the USX75 system as part of the development process to achieve manufacturing maturity. Comparison of the data from the two systems are presented that highlight the significance of shorter processing time and lower detection limits.

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Track Classification: Theme 3. Verification Technologies and Technique Application