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Radioxenon Prototype Trap Validation and Controlled Source Experiments Under the EU Council Decision VI Project

The monitoring capabilities of the IMS noble gas systems may benefit from reductions of radioactive noble gas emissions. If these are achieved at nuclear facilities that have high radioxenon releases in normal operation, this could significantly enhance the CTBT verification capability. In this framework, the SCK•CEN was contracted by the CTBTO under EU Council Decision V to design a mobile system for the reduction of radioxenon emissions from civil production facilities. A follow-up of this project was necessary to carry on the work already performed on emission reduction and to utilize it for controlled source experiments with field measurements, supported by the high resolution atmospheric transport modelling (HRATM). In this regard, the SCK•CEN and the IRE were contracted in 2016 by the CTBTO under EU Council Decision VI to: i) analyze the scale-up and the long term behavior of the prototype developed under EU Council Decision V, ii) perform design studies at additional facilities and iii) investigate further the stack releases at IRE, through observations at various distances and comparison with ATM results. The current progress and the expected outcomes of the project will be presented.

Primary author: BARÉ, Jonathan (CTBTO Preparatory Commission)

Presenter: BARÉ, Jonathan (CTBTO Preparatory Commission)

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