

2.4-P10. Radioxenon Monitoring In the Canadian Arctic in Resolute Bay NU at the CTBT Aerosol Monitoring Station, RN15

Since September 2012, Health Canada's Radiation Protection Bureau has been operating a SPALAX Radioxenon analyser at its Resolute Bay CTBT Aerosol monitoring station, RN15 and has collected in excess of 350 measurements of daily xenon concentrations. RN15 is one of only four radionuclide monitoring stations north of the Arctic Circle and it is not named among the first 40 RN stations identified to have noble gas capability. The station has detected radioxenon several times at levels up to 0.64 mBq/m³. The station is generally sensitive to Northwestern North America and mid to northern latitudes of the Pacific and Asia. For example, the site observed the highest weekly radioiodine and radiocesium concentrations among all of the Canadian monitoring sites in the Canadian Radiological Monitoring Network (CRMN) after the Fukushima accident. Despite this increased sensitivity, it is surmised that the observations are part of general circulation of global atmospheric background of radioxenon in the Northern hemisphere dominated by emissions from such medical isotope production sites as the Chalk River laboratories in Canada. Hence, the remote Resolute Bay site has provided valuable and unique insight into the global radioxenon background.

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