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Aerial Gamma Spectroscopy for On-Site Inspections in Winter Environments

The On Site Inspection (OSI) Action Plan (AP) for 2016-19 identifies improvements in aerial operations, particularly in different environmental settings, as two of its goals (A.P. 1.5: Operationalization of OSI's in Different Environments, and AP 1.10: Application of OSI Techniques). In February 2017 a study and field exercise of aerial gamma spectroscopy techniques was performed at a test site in Ottawa, Canada, including specific operations support required under adverse climatic conditions. Temperatures at this time of year are typically in the range of 0 C to -20 C with snow depths on the order of 50cm. This repeated aspects of a study conducted with similar equipment (a 20 litre NaI (Tl) detector) in the summer of 2013 at the same location. The system is of the same type as used in IFE 2014, though with a smaller crystal volume. The study included measurements of the response of the detectors to point sources of Cs-137 and Co-60. This allowed the comparison of equipment performance and the effects of winter-dependent changed natural radiological backgrounds in an otherwise similar location. This presentation will provide results of this comparison as well as details of operational experience.

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