

Detection of Low-Level Aerosol Isotopes from New Civilian Nuclear Processes

As the world faces a challenging future in maintaining the commercial availability of radioactive isotopes for medical use, new methods of medical isotope production are being pursued. Many of these are small in size and could effectively operate continuously. With the potential for much shorter retention times, a new suite of isotopes may soon be found in the environment. An effort to evaluate possible release scenarios from such processes and the relevance to nuclear explosion monitoring technologies is presented here. It is estimated that many more aerosols containing low-level isotopes of gas/volatile origin could be detectable at short ranges and times, and a few at longer ranges and times as compared to those released in more common nuclear reactor operations.

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