Os-185 Intake Following an Accelerator Target Failure

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Positive intakes of osmium-185 (Os-185) were determined from in vivo measurements of several accelerator researchers who worked near the area of a failed platinum target in a high energy proton accelerator. The failure resulted from overheating due to excessive beam current on the target. The Os-185 decays with a 94-day half-life by electron capture. Several gamma rays up to 900 keVs are emitted. The production mechanism of the osmium is not currently determined; though, the source of osmium was from the failed platinum target. From body count data which was made ten days after the incident no other nuclide has been detected. The maximum doses were evaluated as 10 mem (.1mSv) CEDE based on whole-body counts with both HPGe detectors at Brookhaven and NaI (Tl) detectors at other DOE facilities. The dosimetry was based a noble-metal metabolic model with long term lung deposition of class and Class Y material. Follow-up measurements are currently being conducted on the individual with highest intake. The results will be used to develop a metabolic model for this nuclide.