

## **Approach for Establishing Acceptable Risk / Dose Based Remedial Criteria for Residual Radionuclide Contamination of Land (Soil).**

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This paper will present a brief overview of methods currently being used in the US (and similarly in Canada) to establish acceptable levels of residual radionuclide contamination (e.g., Bq/gram in soil) that will meet the regulatory authority's annual public dose limits and/or related radiological public risk based criteria. The approach allows the analyst to identify one or two specific radionuclides as the "reference nuclide(s)" based on reasonable assumptions as to its "dominance" for dose delivery within the relevant exposure scenarios and pathways being considered. The paper will describe and define the public exposure scenarios (living conditions and characteristics under which future exposure can occur) and the associated exposure pathways being applied to each of these major exposure scenarios. Several specific case studies will be presented to demonstrate "real life" applications including examples that have been accepted by the US DOE (for use in their Abandoned Uranium Mine program) and by the US NRC (for license termination and release for unrestricted use at former uranium sites) and methods being used by the US EPA at radiologically contaminated sites under their purview,

Earlier this year, this presentation was an invited lecture at the IRPA 14 meeting in South Africa and as part of the Health Physics Society's Professional Development School, week prior to the HPS Annual Meeting in Spokane.