

Huntington Pilot Plant Site Profile Review - Findings Matrix (SCA-TR-SP2013-0043)

Finding Number	Summary of Finding	NIOSH Response	Category	SC&A Response	SC&A Suggested Action	NIOSH: Agree/ Disagree	DRSC Action
Finding 1	Since the three diffusion plants (the source of the HPP nickel) had additional isotopes of concern, NIOSH should clearly provide the basis for only specifying Pu-239 and Np-237 as isotopes of concern for recycled uranium.	As of November 14, 2013, none provided.					
Finding 2	NIOSH should clearly state which uranium-specific activity was used in the analysis and ensure that it was used consistently throughout the analysis.	As of November 14, 2013, none provided.					
Finding 3	There is a unit conversion error in going from Table A2 column 3 (Photons per decay ^{238}U) to column 4 (Photons per second per Ci ^{238}U).	As of November 14, 2013, none provided.					
Observation 1	The gamma energy spectrum used by NIOSH is not based on full equilibrium of U-238, U-235, and U-234 with their decay products; rather, it is consistent with a decay period where only short-lived progeny of U-238 and U-235 would have had an opportunity to grow in.	None required.			No action required.		
Observation 2	The beta energy spectrum used by NIOSH is not based on full equilibrium of U-238, U-235, and U-234 with their decay products; rather, it is consistent with a decay period where only short-lived progeny of U-238 and U-235 would have had an opportunity to grow in.	None required.			No action required.		

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Observation 3	The penetrating dose rate calculated by NIOSH using MCNPX and modeling an array of drums is consistent with the dose rate calculated by SC&A using MicroShield and modeling a single drum. Furthermore, the MicroShield-calculated dose rate using the Table A2 gamma energy spectrum is consistent with the dose rate calculated using the gamma energy spectrum from the MicroShield radionuclide decay library.	None required.			No action required.		
Finding 4	The dose breakdown between 0–250 keV and >250 keV varies from 50/50 to about 70/30, depending on the gamma spectrum.	As of November 14, 2013, none provided.					
Finding 5	Provide justification for including modern airborne nickel concentrations in the concentration distribution, when Enterline and Marsh 1982 indicate that the historical concentrations were (in most cases) of greater magnitude. At the beginning of their report, Enterline and Marsh state that the concentration of airborne nickel was estimated to range from 20 to 350 mg Ni/m ³ in areas where the matte was crushed, ground, and handled, and from 5 to 15 mg Ni/m ³ around the calciners. These concentrations are significantly	Presented during the August 7, 2013, SCDR meeting.		During the August 7, 2013, SCDR meeting, agreed with the NIOSH response.	Close this issue, as per the discussion during the August 7, 2013, SCDR meeting, pp. 40 through 112.		

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	larger than any of the values given in Enterline and Marsh 1982, Table 8, and no explanation is provided as to why they have not been included.						
Finding 6	Provide justification for excluding from the concentration distribution the airborne nickel concentration in the crushing, grinding, and handling areas and the area around the calciners reported by Enterline and Marsh (1982).	Presented during the August 7, 2013, SCDR meeting.		During the August 7, 2013, SCDR meeting, agreed with the NIOSH response.	Close this issue, as per the discussion during the August 7, 2013, SCDR meeting, pp. 40 through 112.		
Observation 4	When appropriately used, a site airborne nickel concentration distribution can be used to make favorable exposure estimates when compared to the individual worker location-specific estimates made by Enterline and Marsh (1982, Table 4).	None required.			No action required.		

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Finding 7	There are three typographical errors in the numerical values given in OCAS-TKBS-0004, Section 6.2. Despite the erroneous numerical values, the annual doses are reported correctly; thus SC&A has characterized them as “typographical,” rather than “numerical” errors. Nonetheless, because the erroneous numerical values make it difficult to understand how the annual doses were calculated, SC&A has identified these three typographical errors as a finding rather than an observation.	As of November 14, 2013, none provided.					