



Air Monitoring Program Update

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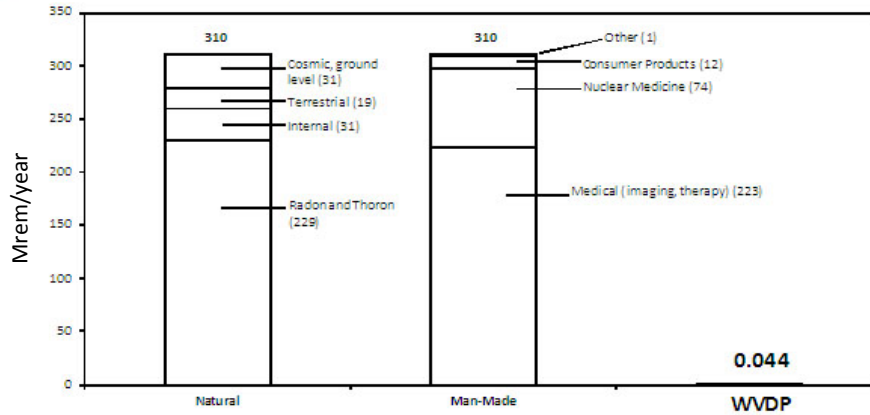
CH2M HILL B&W West Valley

July 24, 2013

Types of Air Monitoring

- Point Source
 - Stack Monitoring
 - Real Time Results at Source
- Demolition Support Monitoring
 - 01-14 Building
 - Worker Safety & Work Area Control
- Ambient Air
 - Ambient Air Network
 - Background Station
 - Documents Compliance
- Continuous Sampling

Comparison of Dose From Natural and Man-Made Sources^a to the Dose From 2011 WVDP Effluents (Figure 3-1 of ASER)



^a Source: National Council on Radiation Protection and Measurements (NCRP) Report Number 160, 2009.

Point Source Air Monitoring

Plant Ventilation Stacks

- 7 Stacks
 - Continuous Air Monitor (CAM)
 - Gross alpha/beta
 - Continuous Sampling
 - Gross alpha/beta
 - Isotopic
- 15 Portable Ventilation Units
 - Continuous sampling
- Extremely Low Emissions (less than 0.03% of standard for 2012)
- 0.0027 mrem/yr vs 10 mrem/yr standard (for maximum exposed offsite Individual, MEOSI)
- Stack Data in Appendix C of AESR



RHWF Stack Monitoring System

Worker Safety & Control of Work Area

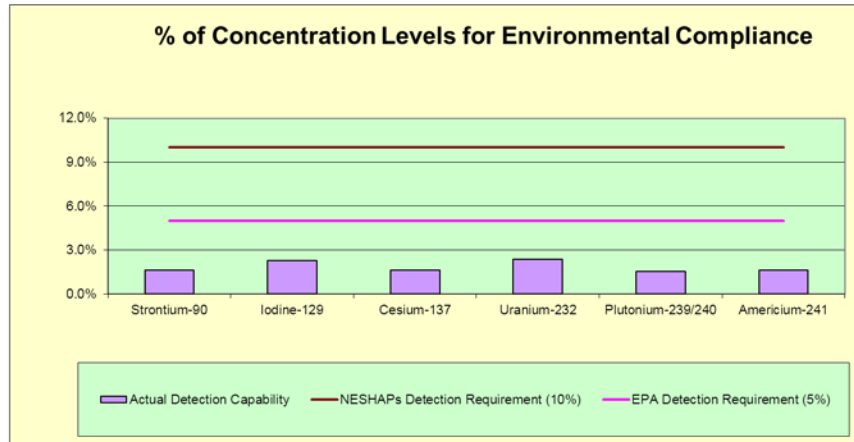
- Low Volume Air Samplers and Continuous Air Monitors Located at the Perimeter of Demolition Site and inside MPPB. Breathing Zone Air Sampler in Cab of Track Hoe.
 - 12 Total Typically Used for 01-14 Demolition Support
- Dust Monitoring Performed by Health and Safety Personnel
- Air Samples Monitored Frequently (Approximately Every 30 Minutes) During Demolition and Compared to Established Alpha and Beta Background + 2 Sigma Charts
- Gross Alpha Beta Counting Performed on Air Sample Filters at the end of Each Shift
- Previous Days Air Sample Results Evaluated Prior to Start of Each Shift
- Contamination Surveys Performed Frequently (Approximately Every 30 Minutes) at Perimeter Points During Demolition
- Final Gross Alpha Beta Counts Performed on Air Sample Filters Seven Days After Pulled to Allow For Decay of Normally Occurring Radioactive Material (NORM)
- 01-14 Building Demolition: No Observed Levels of Concern

Monitoring Program

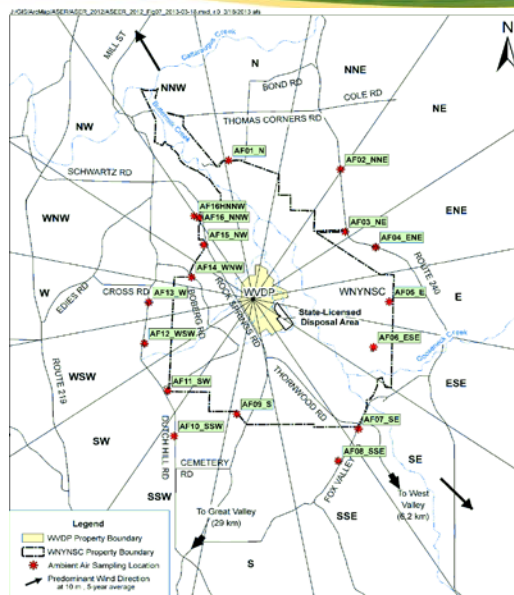
- Background and 16 stations
- Continuous Sampling
- Biweekly gross alpha and beta
- Quarterly isotopic for key WVDP isotopes
- Glass fiber filters – typical particle retention – 99.98%
- Charcoal cartridge for I-129
- Minimum of 80% continuous monitoring
- Compare Ambient Data to monitor and model approach
- No Observed Levels of Concern; Consistent with Background



WVDP Ambient Air Network Detection Capability



Ambient Air Network Monitoring Locations



Ambient Air Summary

4th Quarter 2012 Ambient Air Summary

Radionuclide	Regulatory NESHAP Compliance Limit ($\mu\text{Ci}/\text{mL}$)	Monitoring Network Detection Limit ($\mu\text{Ci}/\text{mL}$)	Results at MEOSI Location (AF16_NNW, December 2012)		Average Results - all 16 sectors (December 2012)		Maximum Results - all 16 sectors (December 2012)	
			($\mu\text{Ci}/\text{mL}$)	% Compliance	($\mu\text{Ci}/\text{mL}$)	% Compliance	($\mu\text{Ci}/\text{mL}$)	% Compliance
			Single result	Limit	Single result	Limit	Single result	Limit
Strontium-90	1.9E-14	3.1E-16	< 1.09E-16	0.6%	< 1.24E-16	0.7%	2.04E-16 ^a	1.1%
Iodine-129	9.1E-15	2.1E-16	< 7.19E-17	0.8%	< 8.62E-17	0.9%	< 1.26E-16	1.4%
Cesium-137	1.9E-14	3.1E-16	< 8.45E-17	0.4%	< 1.09E-16	0.6%	< 1.40E-16	0.7%
Uranium-232	1.3E-15	3.1E-17	< 7.59E-18	0.6%	< 9.28E-18	0.7%	< 1.16E-17	0.9%
Plutonium-238	2.1E-15	3.1E-17	< 5.87E-18	0.3%	< 5.94E-18	0.3%	< 9.14E-18	0.4%
Plutonium-239/240	2.0E-15	3.1E-17	< 7.04E-18	0.4%	< 7.17E-18	0.4%	< 1.12E-17	0.6%
Americium-241	1.9E-15	3.1E-17	< 3.26E-18	0.2%	< 6.9E-18	0.4%	< 9.04E-18	0.5%

^a Result is below the Minimum Detectable Activity (MDA).

Ambient Air Summary

1st Quarter 2013 Ambient Air Summary

Radionuclide	Regulatory NESHAP Compliance Limit ($\mu\text{Ci}/\text{mL}$)	Monitoring Network Detection Limit ($\mu\text{Ci}/\text{mL}$)	Results at MEOSI Location (AF16_NNW, March 2013)		Average Results - all 16 sectors (March 2013)		Maximum Results - all 16 sectors (March 2013)	
			($\mu\text{Ci}/\text{mL}$)	% Compliance	($\mu\text{Ci}/\text{mL}$)	% Compliance	($\mu\text{Ci}/\text{mL}$)	% Compliance
			Single result	Limit	Single result	Limit	Single result	Limit
Strontium-90	1.9E-14	3.1E-16	< 1.58E-16	0.8%	< 1.53E-16	0.8%	2.12E-16 ^a	1.1%
Iodine-129	9.1E-15	2.1E-16	< 7.88E-17	0.9%	< 1.03E-16	1.1%	< 1.45E-16	1.6%
Cesium-137	1.9E-14	3.1E-16	< 1.03E-16	0.5%	< 1.27E-16	0.7%	< 1.79E-16	0.9%
Uranium-232	1.3E-15	3.1E-17	< 9.35E-18	0.7%	< 1.15E-17	0.9%	< 1.48E-17	1.1%
Plutonium-238	2.1E-15	3.1E-17	< 1.05E-17	0.5%	< 1.24E-17	0.6%	< 1.85E-17	0.9%
Plutonium-239/240	2.0E-15	3.1E-17	< 1.11E-17	0.6%	< 1.35E-17	0.7%	< 1.88E-17	0.9%
Americium-241	1.9E-15	3.1E-17	< 1.05E-17	0.6%	< 1.41E-17	0.7%	< 2.08E-17	1.1%

^a Result is below the Minimum Detectable Activity (MDA).

Questions?