

Table 4-6, 2013 Liquid Radioactive Releases by Outfall/Facility and Comparison of Annual Average Radionuclide Concentrations to DOE Derived Concentration Standards for 2013

Outfall or Facility	Radionuclide	Quantity of Radionuclides Released (Ci)	Average Effluent Concentration (uCi/mL)	DOE DCS (uCi/mL)	Fraction of DOE DCS
A-Area					
TB-2 Outfall at Road 1A	H-3	1.24E-01	3.49E-07	1.90E-03	1.84E-04
	Co-60	Below MDL	-5.05E-11	7.20E-06	0.00E+00
	Cs-137	Below MDL	-2.86E-10	3.00E-06	0.00E+00
	U-234	4.63E-05	1.20E-10	6.80E-07	1.77E-04
	U-235	4.22E-06	1.28E-11	7.20E-07	1.78E-05
	U-238	2.11E-05	5.41E-11	7.50E-07	7.22E-05
	Pu-238	1.62E-06	8.02E-12	1.50E-07	5.34E-05
	Pu-239	4.32E-07	1.58E-12	1.40E-07	1.13E-05
	Sum of Fractions				5.15E-04
F-Area					
F-013 200-F Cooling Basin	H-3	4.75E-02	1.81E-06	1.90E-03	9.51E-04
	Co-60	Below MDL	1.33E-09	7.20E-06	1.85E-04
	Sr-89/90	1.38E-05	1.24E-09	1.10E-06	1.13E-03
	I-129	6.18E-06	1.79E-10	3.30E-07	5.41E-04
	Cs-137	Below MDL	4.23E-09	3.00E-06	1.41E-03
	U-234	1.83E-06	9.62E-11	6.80E-07	1.42E-04
	U-235	Below MDL	5.06E-12	7.20E-07	7.02E-06
	Np-237	Below MDL	7.77E-13	3.20E-07	2.43E-06
	U-238	1.69E-06	7.90E-11	7.50E-07	1.05E-04
	Pu-238	3.65E-07	1.93E-11	1.50E-07	1.29E-04
	Pu-239	8.12E-07	6.33E-11	1.40E-07	4.52E-04
	Am-241	2.86E-07	2.85E-11	1.70E-07	1.68E-04
	Cm-244	6.73E-07	3.40E-11	2.60E-07	1.31E-04
	Tc-99	5.54E-06	9.64E-10	4.40E-05	2.19E-05
	Sum of Fractions				5.37E-03
F-05	H-3	1.10E-02	6.04E-07	1.90E-03	3.18E-04
	C-14	2.80E-05	2.49E-09	6.20E-05	4.02E-05
	Co-60	Below MDL	3.15E-10	7.20E-06	4.37E-05
	Sr-89/90	6.69E-05	4.85E-09	1.10E-06	4.41E-03
	I-129	8.71E-06	1.49E-09	3.30E-07	4.51E-03
	Cs-137	Below MDL	6.62E-10	3.00E-06	2.21E-04
	U-234	6.90E-07	5.18E-11	6.80E-07	7.61E-05
	U-235	Below MDL	3.55E-12	7.20E-07	4.92E-06
	Np-237	Below MDL	9.76E-13	3.20E-07	3.05E-06
	U-238	8.35E-07	6.11E-11	7.50E-07	8.14E-05
	Pu-238	1.63E-07	1.02E-11	1.50E-07	6.83E-05
	Pu-239	4.76E-08	1.14E-11	1.40E-07	8.15E-05
	Am-241	2.56E-07	1.76E-11	1.70E-07	1.03E-04
	Cm-244	1.65E-08	3.72E-12	2.60E-07	1.43E-05
	Tc-99	4.86E-06	2.11E-09	4.40E-05	4.80E-05
	Sum of Fractions				1.00E-02

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Outfall or Facility	Radionuclide	Quantity of Radionuclides	Average Effluent	DOE DCS (uCi/mL)	Fraction of DOE DCS
		Released (Ci)	Concentration (uCi/mL)		
FM-3 F-Area Effluent	H-3	1.87E-01	8.24E-07	1.90E-03	4.33E-04
	C-14	4.59E-04	4.55E-09	6.20E-05	7.34E-05
	Co-60	Below MDL	1.63E-10	7.20E-06	2.26E-05
	Sr-89/90	Below MDL	2.59E-10	1.10E-06	2.35E-04
	I-129	Below MDL	3.34E-10	3.30E-07	1.01E-03
	Cs-137	Below MDL	5.84E-10	3.00E-06	1.95E-04
	U-234	2.81E-05	1.16E-10	6.80E-07	1.70E-04
	U-235	1.20E-06	7.91E-12	7.20E-07	1.10E-05
	Np-237	2.67E-07	3.13E-12	3.20E-07	9.77E-06
	U-238	2.59E-05	1.09E-10	7.50E-07	1.45E-04
	Pu-238	9.08E-07	7.67E-12	1.50E-07	5.11E-05
	Pu-239	1.11E-06	6.59E-12	1.40E-07	4.71E-05
	Am-241	8.77E-07	5.00E-12	1.70E-07	2.94E-05
	Cm-244	8.80E-07	5.49E-12	2.60E-07	2.11E-05
	Tc-99	1.92E-04	1.61E-09	4.40E-05	3.65E-05
	Sum of Fractions				2.49E-03
F-Tank Farm					
F-012 281-8F Retention Basin	H-3	1.09E-01	1.39E-06	1.90E-03	7.29E-04
	Co-60	Below MDL	8.54E-10	7.20E-06	1.19E-04
	Sr-89/90	3.03E-04	4.91E-09	1.10E-06	4.46E-03
	I-129	Below MDL	8.45E-11	3.30E-07	2.56E-04
	Cs-137	8.64E-04	1.18E-08	3.00E-06	3.93E-03
	U-234	1.54E-06	2.84E-11	6.80E-07	4.17E-05
	U-235	Below MDL	4.58E-12	7.20E-07	6.36E-06
	Np-237	Below MDL	4.04E-12	3.20E-07	1.26E-05
	U-238	Below MDL	1.96E-11	7.50E-07	2.61E-05
	Pu-238	9.66E-07	1.76E-11	1.50E-07	1.18E-04
	Pu-239	Below MDL	9.61E-12	1.40E-07	6.86E-05
	Am-241	Below MDL	2.44E-12	1.70E-07	1.43E-05
	Cm-244	Below MDL	5.91E-12	2.60E-07	2.27E-05
	Tc-99	5.86E-05	1.40E-09	4.40E-05	3.18E-05
Sum of Fractions				9.84E-03	

Table 4-6, 2013 Liquid Radioactive Releases by Outfall/Facility and Comparison of Annual Average Radionuclide Concentrations to DOE Derived Concentration Standards for 2013

Outfall or Facility	Radionuclide	Quantity of Radionuclides Released (Ci)	Average Effluent Concentration (uCi/mL)	DOE DCS (uCi/mL)	Fraction of DOE DCS	
H-Area						
FM-1C H-Area Effluent	H-3	8.55E+00	3.38E-06	1.90E-03	1.78E-03	
	C-14	5.34E-03	8.58E-09	6.20E-05	1.38E-04	
	Co-60	Below MDL	8.38E-10	7.20E-06	1.16E-04	
	Sr-89/90	1.10E-03	6.20E-10	1.10E-06	5.64E-04	
	Cs-137	Below MDL	6.09E-10	3.00E-06	2.03E-04	
	U-234	6.49E-06	1.07E-11	6.80E-07	1.58E-05	
	U-235	Below MDL	1.65E-12	7.20E-07	2.30E-06	
	Np-237	2.38E-07	2.95E-12	3.20E-07	9.22E-06	
	U-238	1.87E-05	1.09E-11	7.50E-07	1.45E-05	
	Pu-238	4.68E-04	2.58E-10	1.50E-07	1.72E-03	
	Pu-239	3.36E-05	2.14E-11	1.40E-07	1.53E-04	
	Am-241	4.42E-05	2.64E-11	1.70E-07	1.55E-04	
	Cm-244	2.01E-05	1.30E-11	2.60E-07	5.01E-05	
	Sum of Fractions					4.92E-03
H-004	H-3	1.26E+01	1.11E-05	1.90E-03	5.87E-03	
	Co-60	Below MDL	6.06E-10	7.20E-06	8.42E-05	
	Sr-89/90	Below MDL	-8.33E-11	1.10E-06	0.00E+00	
	Cs-137	Below MDL	1.03E-09	3.00E-06	3.43E-04	
	U-234	1.69E-04	1.89E-10	6.80E-07	2.78E-04	
	U-235	6.95E-06	1.47E-11	7.20E-07	2.05E-05	
	U-238	1.77E-05	3.03E-11	7.50E-07	4.04E-05	
	Pu-238	4.74E-07	2.86E-11	1.50E-07	1.91E-04	
	Pu-239	Below MDL	4.16E-12	1.40E-07	2.97E-05	
	Sum of Fractions					6.85E-03
H-ETF						
U3R-2A ETF Outfall at Road C	H-3	2.54E+01	9.76E-04	1.90E-03	5.14E-01	
	C-14	3.02E-04	1.51E-08	6.20E-05	2.44E-04	
	Co-60	Below MDL	5.33E-10	7.20E-06	7.40E-05	
	Sr-89/90	Below MDL	2.24E-10	1.10E-06	2.04E-04	
	Cs-137	2.57E-03	1.29E-07	3.00E-06	4.29E-02	
	U-234	2.36E-08	1.01E-11	6.80E-07	1.49E-05	
	U-235	3.59E-08	4.88E-12	7.20E-07	6.78E-06	
	Np-237	Below MDL	2.80E-12	3.20E-07	8.74E-06	
	U-238	3.38E-08	8.82E-12	7.50E-07	1.18E-05	
	Pu-238	1.15E-07	1.35E-11	1.50E-07	9.00E-05	
	Pu-239	5.42E-08	6.63E-12	1.40E-07	4.73E-05	
	Am-241	Below MDL	2.46E-12	1.70E-07	1.45E-05	
	Cm-244	Below MDL	1.75E-12	2.60E-07	6.75E-06	
	Sum of Fractions					5.57E-01

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Outfall or Facility	Radionuclide	Quantity of Radionuclides	Average Effluent	DOE DCS (uCi/mL)	Fraction of DOE DCS
		Released (Ci)	Concentration (uCi/mL)		
H-Tank Farm					
H-017 281-8H Retention Basin	H-3	3.74E-01	2.99E-06	1.90E-03	1.57E-03
	Co-60	Below MDL	2.94E-10	7.20E-06	4.09E-05
	Sr-89/90	1.31E-03	1.18E-08	1.10E-06	1.07E-02
	I-129	5.19E-06	3.90E-10	3.30E-07	1.18E-03
	Cs-137	8.29E-03	6.21E-08	3.00E-06	2.07E-02
	U-234	1.48E-06	3.96E-11	6.80E-07	5.82E-05
	U-235	Below MDL	5.93E-12	7.20E-07	8.23E-06
	Np-237	Below MDL	9.38E-12	3.20E-07	2.93E-05
	U-238	4.20E-07	2.52E-11	7.50E-07	3.36E-05
	Pu-238	1.46E-04	1.68E-09	1.50E-07	1.12E-02
	Pu-239	1.20E-05	1.43E-10	1.40E-07	1.02E-03
	Am-241	5.48E-06	9.18E-11	1.70E-07	5.40E-04
	Cm-244	5.96E-07	1.50E-11	2.60E-07	5.76E-05
	Tc-99	1.77E-04	1.98E-09	4.40E-05	4.49E-05
	Sum of Fractions				
HP-52 H-Area Tank Farm					
	H-3	9.69E-01	1.94E-06	1.90E-03	1.02E-03
	Co-60	Below MDL	6.56E-10	7.20E-06	9.11E-05
	Sr-89/90	9.05E-05	3.32E-10	1.10E-06	3.02E-04
	Cs-137	Below MDL	2.04E-09	3.00E-06	6.79E-04
	U-234	1.52E-05	3.14E-11	6.80E-07	4.61E-05
	U-235	Below MDL	2.05E-12	7.20E-07	2.84E-06
	U-238	1.30E-05	2.69E-11	7.50E-07	3.59E-05
	Pu-238	7.39E-06	1.63E-11	1.50E-07	1.08E-04
	Pu-239	Below MDL	2.94E-12	1.40E-07	2.10E-05
	Am-241	1.78E-06	7.65E-12	1.70E-07	4.50E-05
	Cm-244	Below MDL	6.99E-13	2.60E-07	2.69E-06
	Sum of Fractions				
K-Area					
K Canal	H-3	3.76E-01	5.63E-07	1.90E-03	2.96E-04
	Co-60	Below MDL	-6.03E-11	7.20E-06	0.00E+00
	Sr-89/90	Below MDL	9.64E-11	1.10E-06	8.76E-05
	Cs-137	Below MDL	-1.86E-10	3.00E-06	0.00E+00
	Sum of Fractions				
L-Area					
L-07	H-3	4.05E+00	4.99E-07	1.90E-03	2.62E-04
	Co-60	Below MDL	8.85E-10	7.20E-06	1.23E-04
	Sr-89/90	Below MDL	6.16E-11	1.10E-06	5.60E-05
	Cs-137	Below MDL	6.41E-10	3.00E-06	2.14E-04
	Sum of Fractions				

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M-Area					
TB-3 M-Area Effluent at Road D	Co-60	Below MDL	2.00E-09	7.20E-06	2.78E-04
	Sr-89/90	Below MDL	6.73E-10	1.10E-06	6.12E-04
	Cs-137	Below MDL	1.40E-09	3.00E-06	4.66E-04
	U-234	Below MDL	4.34E-11	6.80E-07	6.38E-05
	U-235	Below MDL	1.00E-11	7.20E-07	1.39E-05
	U-238	Below MDL	-1.79E-14	7.50E-07	0.00E+00
	Pu-238	Below MDL	0.00E+00	1.50E-07	0.00E+00
	Pu-239	Below MDL	0.00E+00	1.40E-07	0.00E+00
	Am-241	Below MDL	2.42E-11	1.70E-07	1.42E-04
	Cm-244	Below MDL	7.96E-12	2.60E-07	3.06E-05
	Sum of Fractions				1.61E-03
S-Area					
S-004	H-3	2.29E-01	6.08E-06	1.90E-03	3.20E-03
	Co-60	Below MDL	1.09E-09	7.20E-06	1.51E-04
	Sr-89/90	Below MDL	5.17E-10	1.10E-06	4.70E-04
	Cs-137	Below MDL	-7.81E-10	3.00E-06	0.00E+00
	U-234	1.37E-06	4.51E-11	6.80E-07	6.63E-05
	U-235	Below MDL	4.66E-12	7.20E-07	6.47E-06
	U-238	2.88E-06	6.56E-11	7.50E-07	8.75E-05
	Pu-238	1.07E-06	3.73E-11	1.50E-07	2.49E-04
	Pu-239	Below MDL	2.19E-12	1.40E-07	1.56E-05
	Sum of Fractions				4.25E-03
Tritium					
HP-15 Tritium Facility Outfall	H-3	4.78E+00	9.92E-06	1.90E-03	5.22E-03
	Co-60	Below MDL	2.97E-11	7.20E-06	4.12E-06
	Sr-89/90	Below MDL	1.34E-10	1.10E-06	1.22E-04
	Cs-137	Below MDL	-5.24E-10	3.00E-06	0.00E+00
	Sum of Fractions				5.34E-03
Z-Area					
Z-01 Outfall	H-3	Below MDL	1.59E-06	1.90E-03	8.38E-04
	Co-60	Below MDL	1.32E-09	7.20E-06	1.83E-04
	Cs-137	Below MDL	1.36E-06	3.00E-06	4.54E-01
	Tc-99	Below MDL	1.96E-08	4.40E-05	4.45E-04
	Sum of Fractions				4.55E-01