

Table 4-6 Liquid Radioactive Releases by Outfall/Facility and Comparison of Annual Average Concentrations to DOE Derived Concentration Standards (DCSs)**Sample Measurement Section****2014 Average Liquid Radionuclide Concentrations by Outfall/Facility Compared to DOE Derived Concentration Standard:**

Outfall or Facility	Radionuclide	Quantity of Radionuclides Released (Ci)	Average Effluent Concentration ($\mu\text{Ci/mL}$)	DOE DCSs* ($\mu\text{Ci/mL}$)	Fraction of DOE DCS
A-Area					
TB-2 Outfall at Road 1A	H-3	Below MDL	5.36E-08	1.90E-03	2.82E-05
TB-2 Outfall at Road 1A	C-14	Below MDL	-6.42E-10	6.20E-05	0.00E+00
TB-2 Outfall at Road 1A	Co-60	Below MDL	-2.98E-10	7.20E-06	0.00E+00
TB-2 Outfall at Road 1A	I-129	Below MDL	1.05E-10	3.30E-07	3.18E-04
TB-2 Outfall at Road 1A	Cs-137	Below MDL	7.70E-10	3.00E-06	2.57E-04
TB-2 Outfall at Road 1A	U-234	2.95E-05	8.70E-11	6.80E-07	1.28E-04
TB-2 Outfall at Road 1A	U-235	1.56E-06	7.05E-12	7.20E-07	9.80E-06
TB-2 Outfall at Road 1A	U-238	1.96E-05	5.81E-11	7.50E-07	7.75E-05
TB-2 Outfall at Road 1A	Pu-238	2.91E-06	1.12E-11	1.50E-07	7.49E-05
TB-2 Outfall at Road 1A	Pu-239	Below MDL	1.56E-12	1.40E-07	1.12E-05
TB-2 Outfall at Road 1A	Tc-99	Below MDL	9.06E-10	4.40E-05	2.06E-05
				Sum of Fractions	9.25E-04
F-Area					
F-013 200-F Cooling Basin	H-3	3.07E-03	9.28E-07	1.90E-03	4.88E-04
F-013 200-F Cooling Basin	Co-60	Below MDL	1.44E-10	7.20E-06	1.99E-05
F-013 200-F Cooling Basin	Sr-89/90	Below MDL	9.88E-10	1.10E-06	8.98E-04
F-013 200-F Cooling Basin	I-129	Below MDL	3.43E-10	3.30E-07	1.04E-03
F-013 200-F Cooling Basin	Cs-137	Below MDL	3.07E-09	3.00E-06	1.02E-03
F-013 200-F Cooling Basin	U-234	4.63E-07	1.10E-10	6.80E-07	1.62E-04
F-013 200-F Cooling Basin	U-235	Below MDL	2.23E-11	7.20E-07	3.10E-05
F-013 200-F Cooling Basin	Np-237	Below MDL	2.05E-11	3.20E-07	6.42E-05
F-013 200-F Cooling Basin	U-238	3.25E-07	9.37E-11	7.50E-07	1.25E-04
F-013 200-F Cooling Basin	Pu-238	3.63E-07	5.36E-11	1.50E-07	3.58E-04
F-013 200-F Cooling Basin	Pu-239	1.88E-07	5.47E-11	1.40E-07	3.91E-04
F-013 200-F Cooling Basin	Am-241	7.98E-08	5.98E-11	1.70E-07	3.52E-04
F-013 200-F Cooling Basin	Cm-244	2.34E-07	6.47E-11	2.60E-07	2.49E-04
F-013 200-F Cooling Basin	Tc-99	Below MDL	1.63E-09	4.40E-05	3.71E-05
				Sum of Fractions	5.24E-03
F-05	H-3	2.27E-03	3.62E-07	1.90E-03	1.91E-04
F-05	C-14	1.04E-04	1.29E-08	6.20E-05	2.08E-04
F-05	Co-60	Below MDL	7.03E-10	7.20E-06	9.76E-05
F-05	Sr-89/90	3.00E-05	4.39E-09	1.10E-06	3.99E-03
F-05	I-129	Below MDL	2.08E-10	3.30E-07	6.30E-04
F-05	Cs-137	Below MDL	7.24E-10	3.00E-06	2.41E-04
F-05	U-234	5.37E-07	5.30E-11	6.80E-07	7.80E-05
F-05	U-235	2.43E-08	5.11E-12	7.20E-07	7.10E-06
F-05	Np-237	3.27E-08	5.90E-12	3.20E-07	1.84E-05
F-05	U-238	6.66E-07	6.37E-11	7.50E-07	8.50E-05
F-05	Pu-238	1.60E-07	1.39E-11	1.50E-07	9.27E-05
F-05	Pu-239	1.09E-07	1.41E-11	1.40E-07	1.01E-04
F-05	Am-241	2.40E-07	2.78E-11	1.70E-07	1.63E-04
F-05	Cm-244	3.27E-08	7.01E-12	2.60E-07	2.70E-05
F-05	Tc-99	3.84E-06	2.59E-09	4.40E-05	5.89E-05
				Sum of Fractions	5.99E-03

2014 Average Liquid Radionuclide Concentrations by Outfall/Facility Compared to DOE Derived Concentration Standard:

Outfall or Facility	Radionuclide	Quantity of Radionuclides Released (Ci)	Average Effluent Concentration (μCi/mL)	DOE DCSs* (μCi/mL)	Fraction of DOE DCS
FM-3 F-Area Effluent	H-3	1.17E-01	1.23E-06	1.90E-03	6.48E-04
FM-3 F-Area Effluent	C-14	2.87E-04	2.91E-09	6.20E-05	4.69E-05
FM-3 F-Area Effluent	Co-60	Below MDL	5.60E-10	7.20E-06	7.78E-05
FM-3 F-Area Effluent	Sr-89/90	6.57E-06	2.10E-10	1.10E-06	1.91E-04
FM-3 F-Area Effluent	I-129	Below MDL	1.97E-10	3.30E-07	5.96E-04
FM-3 F-Area Effluent	Cs-137	Below MDL	4.06E-10	3.00E-06	1.35E-04
FM-3 F-Area Effluent	U-234	1.16E-05	1.02E-10	6.80E-07	1.50E-04
FM-3 F-Area Effluent	U-235	2.04E-07	6.07E-12	7.20E-07	8.43E-06
FM-3 F-Area Effluent	Np-237	4.04E-07	3.89E-12	3.20E-07	1.21E-05
FM-3 F-Area Effluent	U-238	1.15E-05	1.00E-10	7.50E-07	1.34E-04
FM-3 F-Area Effluent	Pu-238	5.26E-07	8.62E-12	1.50E-07	5.75E-05
FM-3 F-Area Effluent	Pu-239	4.09E-07	5.96E-12	1.40E-07	4.26E-05
FM-3 F-Area Effluent	Am-241	4.49E-07	5.95E-12	1.70E-07	3.50E-05
FM-3 F-Area Effluent	Cm-244	2.25E-07	4.34E-12	2.60E-07	1.67E-05
FM-3 F-Area Effluent	Tc-99	1.02E-04	1.37E-09	4.40E-05	3.12E-05
				Sum of Fractions	2.18E-03
F-Tank Farm					
F-012 281-8F Retention Basin	H-3	9.53E-02	1.55E-06	1.90E-03	8.18E-04
F-012 281-8F Retention Basin	Co-60	Below MDL	5.62E-10	7.20E-06	7.81E-05
F-012 281-8F Retention Basin	Sr-89/90	2.06E-04	4.35E-09	1.10E-06	3.95E-03
F-012 281-8F Retention Basin	I-129	Below MDL	-6.29E-13	3.30E-07	0.00E+00
F-012 281-8F Retention Basin	Cs-137	3.76E-04	8.57E-09	3.00E-06	2.86E-03
F-012 281-8F Retention Basin	U-234	5.21E-07	2.16E-11	6.80E-07	3.18E-05
F-012 281-8F Retention Basin	U-235	Below MDL	4.70E-12	7.20E-07	6.52E-06
F-012 281-8F Retention Basin	Np-237	Below MDL	-2.08E-12	3.20E-07	0.00E+00
F-012 281-8F Retention Basin	U-238	3.79E-07	2.55E-11	7.50E-07	3.40E-05
F-012 281-8F Retention Basin	Pu-238	1.00E-06	2.44E-11	1.50E-07	1.63E-04
F-012 281-8F Retention Basin	Pu-239	Below MDL	6.02E-12	1.40E-07	4.30E-05
F-012 281-8F Retention Basin	Am-241	Below MDL	2.44E-12	1.70E-07	1.43E-05
F-012 281-8F Retention Basin	Cm-244	Below MDL	9.81E-12	2.60E-07	3.77E-05
F-012 281-8F Retention Basin	Tc-99	3.98E-05	1.09E-09	4.40E-05	2.48E-05
				Sum of Fractions	8.06E-03
H-Area					
FM-1C H-Area Effluent	H-3	1.97E+00	1.56E-06	1.90E-03	8.23E-04
FM-1C H-Area Effluent	C-14	5.42E-03	7.71E-09	6.20E-05	1.24E-04
FM-1C H-Area Effluent	Co-60	Below MDL	8.14E-11	7.20E-06	1.13E-05
FM-1C H-Area Effluent	Sr-89/90	7.22E-04	7.34E-10	1.10E-06	6.67E-04
FM-1C H-Area Effluent	Cs-137	Below MDL	4.62E-10	3.00E-06	1.54E-04
FM-1C H-Area Effluent	U-234	5.24E-06	8.42E-12	6.80E-07	1.24E-05
FM-1C H-Area Effluent	U-235	Below MDL	9.92E-13	7.20E-07	1.38E-06
FM-1C H-Area Effluent	Np-237	5.49E-06	7.49E-12	3.20E-07	2.34E-05
FM-1C H-Area Effluent	U-238	3.39E-06	6.96E-12	7.50E-07	9.29E-06
FM-1C H-Area Effluent	Pu-238	1.83E-04	1.63E-10	1.50E-07	1.09E-03
FM-1C H-Area Effluent	Pu-239	8.18E-06	1.01E-11	1.40E-07	7.23E-05
FM-1C H-Area Effluent	Am-241	9.80E-06	1.09E-11	1.70E-07	6.44E-05
FM-1C H-Area Effluent	Cm-244	5.55E-06	7.78E-12	2.60E-07	2.99E-05
				Sum of Fractions	3.08E-03

2014 Average Liquid Radionuclide Concentrations by Outfall/Facility Compared to DOE Derived Concentration Standard:

Outfall or Facility	Radionuclide	Quantity of Radionuclides Released (Ci)	Average Effluent Concentration (μCi/mL)	DOE DCSs* (μCi/mL)	Fraction of DOE DCS
H-004	H-3	3.18E-01	9.17E-06	1.90E-03	4.83E-03
H-004	Co-60	Below MDL	-3.32E-10	7.20E-06	0.00E+00
H-004	Sr-89/90	2.79E-05	9.92E-10	1.10E-06	9.01E-04
H-004	Cs-137	Below MDL	5.56E-10	3.00E-06	1.85E-04
H-004	U-234	4.51E-05	8.98E-10	6.80E-07	1.32E-03
H-004	U-235	1.35E-06	4.14E-11	7.20E-07	5.75E-05
H-004	U-238	6.90E-07	2.39E-11	7.50E-07	3.19E-05
H-004	Pu-238	3.29E-08	2.43E-11	1.50E-07	1.62E-04
H-004	Pu-239	Below MDL	-3.97E-13	1.40E-07	0.00E+00
				Sum of Fractions	7.49E-03
H-ETP					
U3R-2A ETP Outfall at Road C	H-3	1.12E+01	4.81E-04	1.90E-03	2.53E-01
U3R-2A ETP Outfall at Road C	C-14	5.84E-04	2.86E-08	6.20E-05	4.61E-04
U3R-2A ETP Outfall at Road C	Co-60	Below MDL	4.17E-10	7.20E-06	5.79E-05
U3R-2A ETP Outfall at Road C	Sr-89/90	Below MDL	2.78E-10	1.10E-06	2.53E-04
U3R-2A ETP Outfall at Road C	Cs-137	Below MDL	1.74E-09	3.00E-06	5.80E-04
U3R-2A ETP Outfall at Road C	U-234	Below MDL	7.44E-12	6.80E-07	1.09E-05
U3R-2A ETP Outfall at Road C	U-235	9.56E-08	7.82E-12	7.20E-07	1.09E-05
U3R-2A ETP Outfall at Road C	Np-237	3.96E-08	5.63E-12	3.20E-07	1.76E-05
U3R-2A ETP Outfall at Road C	U-238	5.97E-08	1.27E-11	7.50E-07	1.69E-05
U3R-2A ETP Outfall at Road C	Pu-238	2.45E-07	2.41E-11	1.50E-07	1.61E-04
U3R-2A ETP Outfall at Road C	Pu-239	Below MDL	7.60E-12	1.40E-07	5.43E-05
U3R-2A ETP Outfall at Road C	Am-241	4.43E-08	2.60E-12	1.70E-07	1.53E-05
U3R-2A ETP Outfall at Road C	Cm-244	Below MDL	2.96E-12	2.60E-07	1.14E-05
				Sum of Fractions	2.55E-01
H-Tank Farm					
H-017 281-8H Retention Basin	H-3	3.29E-01	2.74E-06	1.90E-03	1.44E-03
H-017 281-8H Retention Basin	Co-60	Below MDL	4.79E-10	7.20E-06	6.65E-05
H-017 281-8H Retention Basin	Sr-89/90	6.40E-04	5.89E-09	1.10E-06	5.35E-03
H-017 281-8H Retention Basin	I-129	9.68E-06	2.15E-10	3.30E-07	6.50E-04
H-017 281-8H Retention Basin	Cs-137	6.22E-03	5.79E-08	3.00E-06	1.93E-02
H-017 281-8H Retention Basin	U-234	2.50E-07	2.44E-11	6.80E-07	3.58E-05
H-017 281-8H Retention Basin	U-235	Below MDL	2.12E-12	7.20E-07	2.94E-06
H-017 281-8H Retention Basin	Np-237	Below MDL	5.95E-12	3.20E-07	1.86E-05
H-017 281-8H Retention Basin	U-238	3.51E-07	1.79E-11	7.50E-07	2.39E-05
H-017 281-8H Retention Basin	Pu-238	1.48E-04	1.38E-09	1.50E-07	9.21E-03
H-017 281-8H Retention Basin	Pu-239	1.30E-05	1.21E-10	1.40E-07	8.65E-04
H-017 281-8H Retention Basin	Am-241	6.32E-06	7.85E-11	1.70E-07	4.62E-04
H-017 281-8H Retention Basin	Cm-244	Below MDL	6.65E-12	2.60E-07	2.56E-05
H-017 281-8H Retention Basin	Tc-99	1.05E-04	1.92E-09	4.40E-05	4.36E-05
				Sum of Fractions	3.75E-02

2014 Average Liquid Radionuclide Concentrations by Outfall/Facility Compared to DOE Derived Concentration Standard:

Outfall or Facility	Radionuclide	Quantity of Radionuclides Released (Ci)	Average Effluent Concentration (μCi/mL)	DOE DCSs* (μCi/mL)	Fraction of DOE DCS
HP-52 H-Area Tank Farm	H-3	1.90E-01	6.32E-07	1.90E-03	3.33E-04
HP-52 H-Area Tank Farm	Co-60	Below MDL	-2.72E-10	7.20E-06	0.00E+00
HP-52 H-Area Tank Farm	Sr-89/90	3.43E-06	2.14E-10	1.10E-06	1.94E-04
HP-52 H-Area Tank Farm	Cs-137	5.47E-05	4.42E-09	3.00E-06	1.47E-03
HP-52 H-Area Tank Farm	U-234	2.40E-06	1.79E-11	6.80E-07	2.64E-05
HP-52 H-Area Tank Farm	U-235	Below MDL	1.76E-12	7.20E-07	2.45E-06
HP-52 H-Area Tank Farm	U-238	3.26E-06	1.57E-11	7.50E-07	2.10E-05
HP-52 H-Area Tank Farm	Pu-238	5.53E-07	7.79E-12	1.50E-07	5.19E-05
HP-52 H-Area Tank Farm	Pu-239	Below MDL	2.03E-12	1.40E-07	1.45E-05
HP-52 H-Area Tank Farm	Am-241	5.82E-07	5.85E-12	1.70E-07	3.44E-05
HP-52 H-Area Tank Farm	Cm-244	Below MDL	7.27E-13	2.60E-07	2.79E-06
				Sum of Fractions	2.15E-03
K-Area					
K Canal	H-3	1.14E-01	2.46E-07	1.90E-03	1.30E-04
K Canal	Co-60	Below MDL	1.41E-10	7.20E-06	1.96E-05
K Canal	Sr-89/90	Below MDL	1.77E-10	1.10E-06	1.61E-04
K Canal	Cs-137	Below MDL	-3.25E-10	3.00E-06	0.00E+00
				Sum of Fractions	3.10E-04
L-Area					
L-07	H-3	1.71E+00	6.33E-07	1.90E-03	3.33E-04
L-07	Co-60	Below MDL	6.20E-10	7.20E-06	8.61E-05
L-07	Sr-89/90	Below MDL	2.76E-10	1.10E-06	2.51E-04
L-07	Cs-137	Below MDL	-3.25E-10	3.00E-06	0.00E+00
				Sum of Fractions	6.70E-04
S-Area					
S-004	H-3	1.35E-01	4.40E-06	1.90E-03	2.32E-03
S-004	Co-60	Below MDL	-4.03E-10	7.20E-06	0.00E+00
S-004	Sr-89/90	Below MDL	2.53E-10	1.10E-06	2.30E-04
S-004	Cs-137	Below MDL	6.97E-10	3.00E-06	2.32E-04
S-004	U-234	9.10E-07	4.63E-11	6.80E-07	6.81E-05
S-004	U-235	Below MDL	1.21E-11	7.20E-07	1.68E-05
S-004	U-238	9.98E-07	4.58E-11	7.50E-07	6.11E-05
S-004	Pu-238	2.05E-06	4.74E-11	1.50E-07	3.16E-04
S-004	Pu-239	Below MDL	-1.52E-12	1.40E-07	0.00E+00
				Sum of Fractions	3.24E-03
Tritium					
HP-15 Tritium Facility Outfall	H-3	1.83E+00	6.56E-06	1.90E-03	3.45E-03
HP-15 Tritium Facility Outfall	Co-60	Below MDL	8.56E-10	7.20E-06	1.19E-04
HP-15 Tritium Facility Outfall	Sr-89/90	Below MDL	3.41E-11	1.10E-06	3.10E-05
HP-15 Tritium Facility Outfall	Cs-137	Below MDL	1.37E-09	3.00E-06	4.56E-04
				Sum of Fractions	4.06E-03