

NOTE: * DOE-STD-1196-2011, Derived Concentration Technical Standard

Data Table 4-3 Comparison of Annual Average Effluent Concentrations to DOE Derived Concentration Standards (DCSs)

Sample Measurement Section

2014 Annual Average Effluent Concentrations and associated Derived Concentration Standards

Stack/Facility	Radionuclide	Average Effluent Concentration (μCi/mL)	DOE DCSs* (μCi/mL)	Fraction of DOE DCS
A-Area				
791-A Sandfilter Discharge	I-129	6.98E-15	3.80E-11	1.84E-04
			Sum of Fractions	1.84E-04
C-Area				
C-Area Main Stack (148')	H-3 (oxide)	3.68E-07	2.10E-07	1.75E+00
			Sum of Fractions	1.75E+00
F-Area				
235-F Sandfilter Discharge	U-234	3.59E-17	4.00E-13	8.98E-05
235-F Sandfilter Discharge	U-238	3.64E-17	4.70E-13	7.75E-05
235-F Sandfilter Discharge	Pu-238	3.23E-18	3.70E-14	8.72E-05
235-F Sandfilter Discharge	Pu-239	7.99E-18	3.40E-14	2.35E-04
235-F Sandfilter Discharge	Am-241	2.38E-17	4.10E-14	5.80E-04
			Sum of Fractions	1.07E-03
291-F Stack Isokinetic	Sr-89/90	2.02E-15	2.50E-11	8.08E-05
291-F Stack Isokinetic	I-129	1.37E-13	3.80E-11	1.80E-03
291-F Stack Isokinetic	Cs-137	4.48E-15	9.80E-11	4.57E-05
291-F Stack Isokinetic	U-234	1.44E-15	4.00E-13	3.61E-03
291-F Stack Isokinetic	U-235	1.17E-16	4.50E-13	2.60E-04
291-F Stack Isokinetic	U-238	4.03E-15	4.70E-13	8.58E-03
291-F Stack Isokinetic	Pu-238	1.63E-16	3.70E-14	4.40E-03
291-F Stack Isokinetic	Pu-239	2.98E-15	3.40E-14	8.78E-02
291-F Stack Isokinetic	Am-241	4.02E-16	4.10E-14	9.80E-03
291-F Stack Isokinetic	Cm-244	5.90E-17	6.90E-14	8.55E-04
			Sum of Fractions	1.17E-01
772-4F Stack	U-234	6.00E-17	4.00E-13	1.50E-04
772-4F Stack	U-238	5.35E-17	4.70E-13	1.14E-04
772-4F Stack	Pu-239	7.41E-18	3.40E-14	2.18E-04
772-4F Stack	Am-241	3.07E-17	4.10E-14	7.48E-04
			Sum of Fractions	1.23E-03
H-Area				
241-278H Caustic Extraction	Cs-137	4.97E-13	9.80E-11	5.07E-03
241-278H Caustic Extraction	U-234	1.03E-16	4.00E-13	2.57E-04
241-278H Caustic Extraction	U-238	8.44E-17	4.70E-13	1.79E-04
241-278H Caustic Extraction	Am-241	4.51E-17	4.10E-14	1.10E-03
			Sum of Fractions	6.61E-03

2014 Annual Average Effluent Concentrations and associated Derived Concentration Standards

Stack/Facility	Radionuclide	Average Effluent Concentration (μCi/mL)	DOE DCSs* (μCi/mL)	Fraction of DOE DCS
291-H Stack Isokinetic	Sr-89/90	2.04E-15	2.50E-11	8.17E-05
291-H Stack Isokinetic	I-129	4.52E-13	3.80E-11	5.95E-03
291-H Stack Isokinetic	Th-230	2.70E-16	2.80E-13	9.63E-04
291-H Stack Isokinetic	Th-232	1.30E-17	1.60E-13	8.11E-05
291-H Stack Isokinetic	U-234	8.16E-17	4.00E-13	2.04E-04
291-H Stack Isokinetic	U-235	9.01E-18	4.50E-13	2.00E-05
291-H Stack Isokinetic	U-238	8.31E-17	4.70E-13	1.77E-04
291-H Stack Isokinetic	Pu-238	2.44E-15	3.70E-14	6.60E-02
291-H Stack Isokinetic	Pu-239	1.31E-15	3.40E-14	3.85E-02
291-H Stack Isokinetic	Am-241	2.23E-16	4.10E-14	5.44E-03
291-H Stack Isokinetic	Cm-244	2.56E-17	6.90E-14	3.70E-04
291-H Stack Isokinetic	C-14	5.75E-11	6.60E-10	8.71E-02
291-H Stack Isokinetic	Kr-85	1.78E-06	3.60E-06	4.95E-01
291-H Stack Isokinetic	H-3 (oxide)	2.04E-08	2.10E-07	9.70E-02
			Sum of Fractions	7.97E-01
H-ETP				
241-81H ETP Process Stack	U-238	6.41E-17	4.70E-13	1.36E-04
			Sum of Fractions	1.36E-04
241-84H ETP Lab Stack	U-234	7.91E-17	4.00E-13	1.98E-04
241-84H ETP Lab Stack	U-238	8.98E-17	4.70E-13	1.91E-04
			Sum of Fractions	3.89E-04
K-Area				
K-Area Main Stack (148')	H-3 (oxide)	3.65E-07	2.10E-07	1.74E+00
			Sum of Fractions	1.74E+00
KIS Facility	Th-230	2.30E-16	2.80E-13	8.22E-04
KIS Facility	Th-232	6.78E-17	1.60E-13	4.24E-04
KIS Facility	U-234	7.99E-17	4.00E-13	2.00E-04
KIS Facility	U-238	7.41E-17	4.70E-13	1.58E-04
KIS Facility	Pu-238	1.48E-17	3.70E-14	4.01E-04
KIS Facility	Pu-239	1.44E-17	3.40E-14	4.24E-04
			Sum of Fractions	2.43E-03
L-Area				
L-Area Disassembly	H-3 (oxide)	3.65E-07	2.10E-07	1.74E+00
L-Area Disassembly	Cs-137	7.67E-14	9.80E-11	7.83E-04
			Sum of Fractions	1.74E+00
L-Area Main Stack (148')	H-3 (oxide)	3.64E-07	2.10E-07	1.73E+00
			Sum of Fractions	1.73E+00

2014 Annual Average Effluent Concentrations and associated Derived Concentration Standards

Stack/Facility	Radionuclide	Average Effluent Concentration (μCi/mL)	DOE DCSs* (μCi/mL)	Fraction of DOE DCS
S-Area				
221-S Personnel Area (Zone 2)	U-234	1.43E-15	4.00E-13	3.56E-03
221-S Personnel Area (Zone 2)	U-238	1.19E-15	4.70E-13	2.54E-03
221-S Personnel Area (Zone 2)	Am-241	5.97E-16	4.10E-14	1.46E-02
			Sum of Fractions	2.07E-02
250-S Glass Waste Bldg #1488	U-238	9.00E-16	4.70E-13	1.92E-03
			Sum of Fractions	1.92E-03
250-S Glass Waste Bldg #1509	U-234	1.06E-15	4.00E-13	2.66E-03
			Sum of Fractions	2.66E-03
250-S Glass Waste Bldg #3928	U-234	1.46E-15	4.00E-13	3.66E-03
250-S Glass Waste Bldg #3929	U-238	1.55E-15	4.70E-13	3.30E-03
250-S Glass Waste Bldg #3930	Am-241	8.20E-16	4.10E-14	2.00E-02
			Sum of Fractions	2.70E-02
250-S Glass Waste Bldg #3940	U-238	8.36E-16	4.70E-13	1.78E-03
			Sum of Fractions	1.78E-03
251-S Glass Waste Bldg2 Vault A	U-234	7.04E-17	4.00E-13	1.76E-04
251-S Glass Waste Bldg2 Vault A	U-238	5.26E-17	4.70E-13	1.12E-04
			Sum of Fractions	2.88E-04
251-S Glass Waste Bldg2 Vault B	U-234	4.94E-17	4.00E-13	1.23E-04
			Sum of Fractions	1.23E-04
251-S Glass Waste Bldg2 Vault C	U-238	1.06E-16	4.70E-13	2.25E-04
251-S Glass Waste Bldg2 Vault C	Am-241	3.88E-17	4.10E-14	9.46E-04
			Sum of Fractions	1.17E-03
251-S Glass Waste Bldg2 Vault D	U-238	5.59E-17	4.70E-13	1.19E-04
251-S Glass Waste Bldg2 Vault D	Am-241	3.96E-17	4.10E-14	9.65E-04
			Sum of Fractions	1.08E-03
291-S Vit. Process (Zone 1)	Cs-137	8.08E-12	9.80E-11	8.25E-02
291-S Vit. Process (Zone 1)	U-234	9.05E-16	4.00E-13	2.26E-03
291-S Vit. Process (Zone 1)	Pu-238	5.94E-16	3.70E-14	1.61E-02
291-S Vit. Process (Zone 1)	Am-241	9.94E-16	4.10E-14	2.42E-02
			Sum of Fractions	1.25E-01
511-S Low Pt. Pump Pit	U-234	1.02E-15	4.00E-13	2.55E-03
511-S Low Pt. Pump Pit	U-238	8.40E-16	4.70E-13	1.79E-03
511-S Low Pt. Pump Pit	Am-241	7.79E-16	4.10E-14	1.90E-02
			Sum of Fractions	2.33E-02

2014 Annual Average Effluent Concentrations and associated Derived Concentration Standards

Stack/Facility	Radionuclide	Average Effluent Concentration (μCi/mL)	DOE DCSs* (μCi/mL)	Fraction of DOE DCS
512-S Late Wash	U-234	4.96E-17	4.00E-13	1.24E-04
512-S Late Wash	U-238	4.66E-17	4.70E-13	9.91E-05
512-S Late Wash	Am-241	3.80E-17	4.10E-14	9.26E-04
			Sum of Fractions	1.15E-03
Tritium				
232-H (200ft)	H-3 (elemental)	9.39E-07	2.10E-03	4.47E-04
232-H (200ft)	H-3 (oxide)	5.21E-06	2.10E-07	2.48E+01
			Sum of Fractions	2.48E+01
233-H	H-3 (elemental)	9.25E-07	2.10E-03	4.41E-04
233-H	H-3 (oxide)	8.00E-07	2.10E-07	3.81E+00
			Sum of Fractions	3.81E+00
234-H	H-3 (elemental)	9.16E-07	2.10E-03	4.36E-04
234-H	H-3 (oxide)	7.80E-06	2.10E-07	3.71E+01
			Sum of Fractions	3.71E+01
238-H	H-3 (oxide)	4.39E-06	2.10E-07	2.09E+01
			Sum of Fractions	2.09E+01
264-H	H-3 (elemental)	6.20E-08	2.10E-03	2.95E-05
264-H	H-3 (oxide)	6.20E-07	2.10E-07	2.95E+00
			Sum of Fractions	2.95E+00
Z-Area				
210-Z Building Stack	U-234	8.76E-16	4.00E-13	2.19E-03
210-Z Building Stack	U-238	6.95E-16	4.70E-13	1.48E-03
210-Z Building Stack	Pu-238	2.04E-16	3.70E-14	5.53E-03
210-Z Building Stack	Am-241	3.91E-16	4.10E-14	9.54E-03
			Sum of Fractions	1.87E-02
451-Z Saltstone Vaults	U-234	2.45E-17	4.00E-13	6.12E-05
451-Z Saltstone Vaults	Am-241	4.77E-17	4.10E-14	1.16E-03
			Sum of Fractions	1.22E-03
Saltstone SDU-2	Am-241	3.81E-17	4.10E-14	9.28E-04
			Sum of Fractions	9.28E-04
Saltstone SDU-5	U-234	4.33E-17	4.00E-13	1.08E-04
Saltstone SDU-6	U-238	3.98E-17	4.70E-13	8.47E-05
			Sum of Fractions	1.93E-04