

(4) Reprocessing Facilities (Radioactive Liquid Waste)

Japan Atomic Energy Agency, Reprocessing Facility		Tritium [ <sup>3</sup> H] (Bq)	Iodine [ <sup>129</sup> I] (Bq)	Iodine [ <sup>131</sup> I] (Bq)
	Annual Release	1.1E+11	N.D.	N.D.
	Annual Release Control Target	1.9E+15	2.7E+10	1.2E+11
Japan Nuclear Fuel Ltd., Reprocessing Plant (Reprocessing Facility)		Tritium [ <sup>3</sup> H] (Bq)	Iodine [ <sup>129</sup> I] (Bq)	Iodine [ <sup>131</sup> I] (Bq)
	Annual Release	3.2E+11	1.2E+07	N.D.
	Annual Release Control Target	1.8E+16	4.3E+10	1.7E+11
Japan Atomic Energy Agency, Reprocessing Facility		/	Strontium [ <sup>89</sup> Sr] (Bq)	Strontium [ <sup>90</sup> Sr] (Bq)
	Annual Release	/	N.D.	N.D.
	Annual Release Control Target	/	1.6E+10	3.2E+10
Japan Nuclear Fuel Ltd., Reprocessing Plant (Reprocessing Facility)		Other Radionuclides[nuclides that do not emit alpha rays] Breakdown [by nuclide]		
		Cobalt [ <sup>60</sup> Co] (Bq)	/	Strontium – Yttrium [ <sup>90</sup> Sr- <sup>90</sup> Y] (Bq)
	Annual Release	N.D.	/	N.D.
	Annual Release Control Target	–		
Japan Atomic Energy Agency, Reprocessing Facility		Cerium – Praseodymium [ <sup>144</sup> Ce- <sup>144</sup> Pr] (Bq)	/	/
	Annual Release	N.D.	/	/
	Annual Release Control Target	1.2E+11	/	/
Japan Nuclear Fuel Ltd., Reprocessing Plant (Reprocessing Facility)		Other Radionuclides[nuclides that do not emit alpha rays] Breakdown [by nuclide]		
		Cerium – Praseodymium [ <sup>144</sup> Ce – <sup>144m</sup> Pr, <sup>144</sup> Pr] (Bq)	Europium [ <sup>154</sup> Eu] (Bq)	Plutonium [ <sup>241</sup> Pu] (Bq)
	Annual Release	N.D.	N.D.	N.D.
	Annual Release Control Target	–		

(4) Reprocessing Facilities (Radioactive Liquid Waste) (cont.)

Total Alpha Radioactivity (Bq)	Plutonium [Pu( $\alpha$ )] (Bq)			Total beta radioactivity (excluding $^3\text{H}$ ) (Bq)
N.D.	N.D.			N.D.
4.1E+09	2.3E+09			9.6E+11
Left Column Breakdown (by nuclide)				
Other Radionuclides [nuclides that emit alpha rays] (Bq)	Plutonium [ Pu( $\alpha$ ) ] (Bq)	Americium [ Am( $\alpha$ ) ] (Bq)	Curium [ Cm( $\alpha$ ) ] (Bq)	Other radionuclides [nuclides that do not emit alpha rays] (Bq)
N.D.	N.D.	N.D.	N.D.	N.D.
3.8E+09	-			2.1E+11

Zirconium – Niobium [ $^{95}\text{Zr}$ - $^{95}\text{Nb}$ ] (Bq)	Ruthenium [ $^{103}\text{Ru}$ ] (Bq)	Ruthenium – Rhodium [ $^{106}\text{Ru}$ - $^{106}\text{Rh}$ ] (Bq)	Cesium [ $^{134}\text{Cs}$ ] (Bq)	Cesium [ $^{137}\text{Cs}$ ] (Bq)	Cerium [ $^{141}\text{Ce}$ ] (Bq)
N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4.1E+10	6.4E+10	5.1E+11	6.0E+10	5.5E+10	5.9E+09
Other Radionuclides[nuclides that do not emit alpha rays] Breakdown [by nuclide]					
		Ruthenium – Rhodium [ $^{106}\text{Ru}$ - $^{106}\text{Rh}$ ] (Bq)	Cesium [ $^{134}\text{Cs}$ ] (Bq)	Cesium – Barium [ $^{137}\text{Cs}$ - $^{137}\text{mBa}$ ] (Bq)	
		N.D.	N.D.	N.D.	
-					

Note: The radioactivity (Bq) of released liquid waste was obtained by multiplying the concentration of radioactive material (Bq/cm<sup>3</sup>) in the released liquids by the amount of released liquids. "-" indicates that no annual release control target has been specified. N.D. is used to indicate values lower than the detection limit concentration. Detection limit concentrations (Bq/cm<sup>3</sup>) are as follows.

Japan Atomic Energy Agency, Reprocessing Facility

$^{129}\text{I}$	: 1.4E-03 or less
$^{131}\text{I}$	: 1.8E-03 or less
Total alpha radioactivity	: 1.1E-03 or less
Pu( $\alpha$ )	: 3.7E-05 or less
Total beta radioactivity (excluding $^3\text{H}$ )	: 2.2E-02 or less
$^{89}\text{Sr}$	: 2.2E-03 or less
$^{90}\text{Sr}$	: 1.1E-03 or less
$^{95}\text{Zr}$ - $^{95}\text{Nb}$	: 4.3E-03 or less
$^{103}\text{Ru}$	: 1.1E-03 or less
$^{106}\text{Ru}$ - $^{106}\text{Rh}$	: 3.2E-02 or less
$^{134}\text{Cs}$	: 1.1E-03 or less
$^{137}\text{Cs}$	: 1.8E-03 or less
$^{141}\text{Ce}$	: 2.2E-03 or less
$^{144}\text{Ce}$ - $^{144}\text{Pr}$	: 2.2E-02 or less

Japan Nuclear Fuel Ltd., Reprocessing Plant (Reprocessing Facility)

$^{131}\text{I}$	: 2E-02 or less
Other radionuclides (nuclides that emit alpha rays) (represented by the value for total alpha)	: 4E-03 or less
Pu( $\alpha$ )	: 1E-03 or less
Am( $\alpha$ )	: 6E-05 or less
Cm( $\alpha$ )	: 6E-05 or less
Other radionuclides (nuclides that do not emit alpha rays) (represented by the value for total beta (gamma))	: 4E-02 or less
$^{60}\text{Co}$	: 2E-02 or less
$^{90}\text{Sr}$ - $^{90}\text{Y}$	: 7E-04 or less
$^{106}\text{Ru}$ - $^{106}\text{Rh}$	: 2E-02 or less
$^{134}\text{Cs}$	: 2E-02 or less
$^{137}\text{Cs}$ - $^{137}\text{mBa}$	: 2E-02 or less
$^{144}\text{Ce}$ - $^{144}\text{mPr}$ , $^{144}\text{Pr}$	: 2E-02 or less
$^{154}\text{Eu}$	: 2E-02 or less
$^{241}\text{Pu}$	: 3E-02 or less