(4) Reprocessing Facility (radioactive liquid waste)

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Japan Atomic Energy Agency Reprocessing facility		Tritium [³H] (Bq)	Iodine [¹²⁹ I] (Bq)	Iodine [¹³¹ I] (Bq)
Reprocessing facility	Annual release	2.0E+11	N.D.	N.D.
	Annual release control target values	1.9E+15	2.7E+10	1.2E+11
Japan Nuclear Fuel Ltd. Reprocessing plant		Tritium [3H] (Bq)	Iodine [¹²⁹ I] (Bq)	Iodine [¹³¹ I] (Bq)
(Reprocessing facility)	Annual release	1.4E+12	2.8E+07	N.D.
	Annual release control target values	1.8E+16	4.3E+10	1.7E+11
Japan Atomic Energy Agency Reprocessing facility			Strontium [89Sr] (Bq)	Strontium [90Sr] (Bq)
	Annual release		N.D.	N.D.
	Annual release control target values		1.6E+10	3.2E+10
Japan Nuclear Fuel Ltd. Reprocessing plant (Reprocessing facility)		Cobalt [60Co] (Bq)		Strontium - Yttrium [90Sr-90Y] (Bq)
	Annual release	N.D.		N.D.
	Annual release control target values		-	
Japan Atomic Energy Agency Reprocessing facility		Cerium - Praseodymium [¹⁴⁴ Ce- ¹⁴⁴ Pr] (Bq)		
	Annual release	N.D.		
	Annual release control target values	1.2E+11		
Japan Nuclear Fuel Ltd. Reprocessing plant (Reprocessing facility)			s that do not emit alpha rays) Europium [154Eu] (Bq)	/Breakdown (by nuclide) Plutonium [241Pu] (Bq)
	Annual release	N.D.	N.D.	N.D.
	Annual release control target values		-	

(4) Reprocessing Facility (radioactive liquid waste) (cont.)

Total alpha	Plutonium			Total beta radioactivity
radioactivity	[Pu (α)]			(excluding ³ H)
(Bq)	(Bq)			(Bq)
N.D.	N.D.			N.D.
4.1E+09	2.3E+09			9.6E+11
	Breakdow			
Other radionuclides	Plutonium	Americium	Curium	Other radionuclides
(nuclides that emit alpha rays)	[Pu (α)]	$[Am(\alpha)]$	[Cm (α)]	(nuclides that do not emit alpha rays)
(Bq)	(Bq)	(Bq)	(Bq)	(Bq)
N.D.	N.D.	N.D.	N.D.	N.D.

Zirconium - Niobium [95Zr-95Nb] (Bq)	Ruthenium [¹⁰³ Ru] (Bq)	Ruthenium - Rhodium [¹⁰⁶ Ru- ¹⁰⁶ Rh] (Bq)	Cesium [134Cs] (Bq)	Cesium [137Cs] (Bq)	Cerium [¹⁴¹ 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 nuclides (nuclides that do not emit alpha rays)/Breakdown (by nuclide)				
		Ruthenium - Rhodium [106 Ru-106 Rh] (Bq)	Cesium [134Cs] (Bq)	Cesium - Barium [137Cs-137mBa] (Bq)	
		N.D.	N.D.	N.D.	

Notes: The radioactivity (Bq) of radioactive liquid waste is obtained by multiplying the concentration of the radioactive material (Bq/cm^3) in the released liquid by the amount of released liquid.

Values lower than the detection limit of radioactivity are indicated as N.D.

The detection limits are as follows. (Bq/cm³)

131 I : 1.8E-03 or less Other radionuclides (nuclides that emit alpha rays) : 4E-03 or less Total alpha : 1.1E-03 or less (The value for all alpha values was used.) radioactivity Pu (α) : 1E-03 or less Pu (α) : 3.7E-05 or less Am (α) : 6E-05 or less Total beta radioactivity (excluding 3 H) Cm (α) : 6E-05 or less 89 Sr : 2.2E-02 or less Other radionuclides (nuclides that do not emit : 4E-02 or less 89 Sr : 2.2E-03 or less alpha rays) 95 Zr- 95 Nb : 4.3E-03 or less (The value for all beta (gamma) values was used.) 95 Zr- 95 Nb : 4.3E-03 or less (The value for all beta (gamma) values was used.) 95 Zr- 95 Nb : 4.3E-03 or less 90 Sr- 90 Sr : 7E-04 or less 106 Ru - 106 Rh : 2E-02 or less 134 Cs : 1.1E-03 or less 136 Cs - 137 mBa : 2E-02 or less 141 Ce - 144 Pr : 2.2E-02 or less 154 Eu : 2E-02 or less	Japan Atomic Energy Agency, Reprocessing Facility		Japan Nuclear Fuel Ltd., Reprocessing Plant (reprocessing facility)		
Total alpha : 1.1E-03 or less (The value for all alpha values was used.) radioactivity Pu (α) : 1E-03 or less Pu (α) : 3.7E-05 or less Am (α) : 6E-05 or less Total beta radioactivity (excluding 3 H) Cm (α) : 6E-05 or less 89 Sr : 2.2E-02 or less Other radionuclides (nuclides that do not emit and emit alpha values was used.) 90 Sr : 1.1E-03 or less (The value for all beta (gamma) values was used.) 95 Zr- 95 Nb : 4.3E-03 or less (The value for all beta (gamma) values was used.) 95 Zr- 95 Nb : 4.3E-03 or less (The value for all beta (gamma) values was used.) 95 Zr- 95 Nb : 4.3E-03 or less (The value for all beta (gamma) values was used.) 95 Zr- 95 Nb : 4.3E-03 or less 90 Sr- 90 Y : 7E-04 or less 106 Ru - 106 Rh : 2E-02 or less 134 Cs : 2E-02 or less 137 Cs : 1.8E-03 or less 137 Cs- 137m Ba : 2E-02 or less 144 Ce - 144m Pr : 2.2E-02 or less 144 Ce - 144m Pr, 144 Pr : 2E-02 or less	^{129}I	: 1.4E-03 or less	^{131}I	: 2E-02 or less	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	^{131}I	: 1.8E-03 or less	Other radionuclides (nuclides that emit alpha rays)	: 4E-03 or less	
Pu (α) : 3.7E-05 or less Am (α) : 6E-05 or less Total beta radioactivity (excluding 3 H) Cm (α) : 6E-05 or less 89 Sr : 2.2E-02 or less Other radionuclides (nuclides that do not emit : 4E-02 or less 89 Sr : 2.2E-03 or less alpha rays) 95 Zr- 95 Nb : 4.3E-03 or less (The value for all beta (gamma) values was used.) 95 Zr- 95 Nb : 4.3E-03 or less 90 Sr- 90 Y : 7E-04 or less 106 Ru- 106 Rh : 2E-02 or less 106 Ru- 106 Rh : 2E-02 or less 134 Cs : 1.1E-03 or less 134 Cs : 2E-02 or less 137 Cs : 1.8E-03 or less 137 Cs- 137 mBa : 2E-02 or less 141 Ce : 2.2E-03 or less 144 Ce- 144m Pr, 144 Pr : 2E-02 or less 144 Ce- 144m Pr, 144 Pr : 2E-02 or less	Total alpha	: 1.1E-03 or less	(The value for all alpha values was used.)		
Total beta radioactivity (excluding 3 H)	radioactivity		Pu (α)	: 1E-03 or less	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Pu (α)	: 3.7E-05 or less	$Am(\alpha)$: 6E-05 or less	
$^{89}Sr $	Total beta radioact	tivity (excluding ³ H)	$Cm(\alpha)$: 6E-05 or less	
		: 2.2E-02 or less	Other radionuclides (nuclides that do not emit	: 4E-02 or less	
$^{95}Zr^{-95}Nb \hspace{1mm} : 4.3E-03 \text{ or less} \hspace{1mm} ^{60}Co \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} ^{103}Ru \hspace{1mm} : 1.1E-03 \text{ or less} \hspace{1mm} ^{90}Sr^{-90}Y \hspace{1mm} : 7E-04 \text{ or less} \hspace{1mm} ^{106}Ru^{-106Rh} \hspace{1mm} : 3.2E-02 \text{ or less} \hspace{1mm} ^{106}Ru^{-106}Rh \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} ^{134}Cs \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} ^{134}Cs \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} ^{137}Cs \hspace{1mm} ^{137}Cs \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} ^{137}Cs^{-137m}Ba \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} ^{141}Ce \hspace{1mm} ^{144}Ce^{-144m}Pr, ^{144}Pr \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} ^{144}Ce^{-144m}Pr, ^{144}Pr \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} ^{154}Eu \hspace{1mm} : 2E-02 \text{ or less} \hspace{1mm} : 2E-02 $	⁸⁹ Sr	: 2.2E-03 or less	alpha rays)		
$^{103} Ru $	⁹⁰ Sr	: 1.1E-03 or less	(The value for all beta (gamma) values was used.)		
$\begin{array}{llllllllllllllllllllllllllllllllllll$	⁹⁵ Zr- ⁹⁵ Nb	: 4.3E-03 or less	⁶⁰ Co	: 2E-02 or less	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$: 1.1E-03 or less	90 Sr- 90 Y	: 7E-04 or less	
$^{137}Cs & : 1.8E-03 \text{ or less} & ^{137}Cs-^{137m}Ba & : 2E-02 \text{ or less} \\ ^{141}Ce & : 2.2E-03 \text{ or less} & ^{144}Ce-^{144m}Pr, ^{144}Pr & : 2E-02 \text{ or less} \\ ^{144}Ce-^{144}Pr & : 2.2E-02 \text{ or less} & ^{154}Eu & : 2E-02 \text{ or less} \\ \end{array}$: 3.2E-02 or less		: 2E-02 or less	
${}^{141}\text{Ce} \hspace{1.5cm} : 2.2\text{E-03 or less} \hspace{1.5cm} {}^{144}\text{Ce-}{}^{144m}\text{Pr}, {}^{144}\text{Pr} \hspace{1.5cm} : 2\text{E-02 or less}$ ${}^{154}\text{Ce-}{}^{144}\text{Pr} \hspace{1.5cm} : 2.2\text{E-02 or less}$ ${}^{154}\text{Eu} \hspace{1.5cm} : 2\text{E-02 or less}$: 1.1E-03 or less		: 2E-02 or less	
$^{144}\text{Ce}^{-144}\text{Pr}$: 2.2E-02 or less : 2E-02 or less		: 1.8E-03 or less	$^{137}\text{Cs-}^{137\text{m}}\text{Ba}$: 2E-02 or less	
		: 2.2E-03 or less	,	: 2E-02 or less	
241 D 2 2F 02 or loss	¹⁴⁴ Ce- ¹⁴⁴ Pr	: 2.2E-02 or less		: 2E-02 or less	
PU . 3E-02 01 less			²⁴¹ Pu	: 3E-02 or less	