

4) Reprocessing Facilities (Liquid Waste)

*1 Japan Atomic Energy Agency Tokai Research and Development Center Nuclear Fuel Cycle Engineering Laboratories (Reprocessing Facilities)		Tritium [ <sup>3</sup> H ] (Bq)	Iodine [ <sup>129</sup> I ] (Bq)	Iodine [ <sup>131</sup> I ] (Bq)
	Annual release	9.7 × 10 <sup>13</sup>	6.6 × 10 <sup>6</sup>	N.D.
	Annual release Target control level	1.9 × 10 <sup>15</sup>	2.7 × 10 <sup>10</sup>	1.2 × 10 <sup>11</sup>
*2 Japan Nuclear Fuel Limited Reprocessing Plant (Reprocessing Facilities)		Tritium [ <sup>3</sup> H ] (Bq)	Iodine [ <sup>129</sup> I ] (Bq)	Iodine [ <sup>131</sup> I ] (Bq) *4
	Annual release	1.4 × 10 <sup>9</sup>	N.D.	-
	Annual release Target control level*3	1.8 × 10 <sup>16</sup> (5.6 × 10 <sup>10</sup> )	4.3 × 10 <sup>10</sup> (3 × 10 <sup>7</sup> )	1.7 × 10 <sup>11</sup> (-)

*1 Japan Atomic Energy Agency Tokai Research and Development Center Nuclear Fuel Cycle Engineering Laboratories (Reprocessing Facilities)			Strontium [ <sup>89</sup> Sr ] (Bq)	Strontium [ <sup>90</sup> Sr ] (Bq)
	Annual release		N.D.	N.D.
	Annual release Target control level		1.6 × 10 <sup>10</sup>	3.2 × 10 <sup>10</sup>
*2 Japan Nuclear Fuel Limited Reprocessing Plant (Reprocessing Facilities)		Other radionuclides (nuclides that do not emit α rays)		
		Cobalt [ <sup>60</sup> Co ] (Bq) *4		Strontium -Yttrium [ <sup>90</sup> Sr - <sup>90</sup> Y ] (Bq) *4
	Annual release	-		-
	Annual release Target control level *3		-	

*1 Japan Atomic Energy Agency Tokai Research and Development Center Nuclear Fuel Cycle Engineering Laboratories (Reprocessing Facilities)		Cerium -praseodymium [ <sup>144</sup> Ce - <sup>144</sup> Pr ] (Bq)		
	Annual release	N.D.		
	Annual release Target control level	1.2 × 10 <sup>11</sup>		
*2 Japan Nuclear Fuel Limited Reprocessing Plant (Reprocessing Facilities)		Other radionuclides (nuclides that do not emit α rays)		
		Cerium -praseodymium [ <sup>144</sup> Ce - <sup>144m</sup> Pr, <sup>144</sup> Pr ] (Bq) *4	Europium [ <sup>154</sup> Eu ] (Bq) *4	Plutonium [ <sup>241</sup> Pu ] (Bq) *4
	Annual release	-	-	-
	Annual release Target control level *3		-	

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

Total α radioactivity (Bq)	Plutonium [ Pu (α) ] (Bq)			Total β radioactivity (excluding <sup>3</sup> H) (Bq)
N.D.	<sup>6</sup> 6.3 × 10			N.D.
<sup>9</sup> 4.1 × 10	<sup>9</sup> 2.3 × 10			<sup>11</sup> 9.6 × 10
Other radionuclides (nuclides that emit α rays) (Bq)	Radionuclide(s) categorized into the left group			Other radionuclides (nuclides that do not emit α rays) (Bq)
	Plutonium [ Pu (α) ] (Bq) *4	Americium [ Am (α) ] (Bq) *4	Curium [ Cm (α) ] (Bq) *4	
N.D.	-	-	-	N.D.
<sup>9</sup> 3.8 × 10 <sup>9</sup> ( 1.3 × 10 <sup>8</sup> )	-			<sup>11</sup> 2.1 × 10 <sup>11</sup> ( 6.3 × 10 <sup>9</sup> )

Zirconium -niobium [ <sup>95</sup> Zr - <sup>95</sup> Nb ] (Bq)	Ruthenium [ <sup>103</sup> Ru ] (Bq)	Ruthenium -Rhodium [ <sup>106</sup> Ru - <sup>106</sup> Rh ] (Bq)	Cesium [ <sup>134</sup> Cs ] (Bq)	Cesium [ <sup>137</sup> Cs ] (Bq)	Cerium [ <sup>141</sup> Ce ] (Bq)
N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
<sup>10</sup> 4.1 × 10	<sup>10</sup> 6.4 × 10	<sup>11</sup> 5.1 × 10	<sup>10</sup> 6.0 × 10	<sup>10</sup> 5.5 × 10	<sup>9</sup> 5.9 × 10
Other radionuclides (nuclides that do not emit α rays)					
		Ruthenium -Rhodium [ <sup>106</sup> Ru - <sup>106</sup> Rh ] (Bq) *4	Cesium [ <sup>134</sup> Cs ] (Bq) *4	Cesium - Barium [ <sup>137</sup> Cs - <sup>137m</sup> Ba ] (Bq) *4	
		-	-	-	
-					

Note: The radioactivity (Bq) of radioactive liquid waste is obtained by multiplying the concentration of the radioactive material (Bq/cm<sup>3</sup>) in the released liquid by the amount of released liquid (m<sup>3</sup>).

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

The detection limits are as follows.

Total α radioactivity : 1.1×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

Total β radioactivity (excluding <sup>3</sup>H)

<sup>89</sup>Sr : 2.2×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>90</sup>Sr : 1.1×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>95</sup>Zr - <sup>95</sup>Nb : 4.3×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>103</sup>Ru : 1.1×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>106</sup>Ru - <sup>106</sup>Rh : 3.2×10<sup>-2</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>134</sup>Cs : 1.1×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>137</sup>Cs : 1.8×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>141</sup>Ce : 2.2×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>144</sup>Ce - <sup>144</sup>Pr : 2.2×10<sup>-2</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>3</sup>H : 3.7×10<sup>0</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

<sup>129</sup>I : 1.4×10<sup>-3</sup> (Bq/cm<sup>3</sup>) or lower (\*1)

: 2×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*2)

<sup>131</sup>I : 1.8×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*1)

Pu (α) : 3.7×10<sup>-5</sup> (Bq/cm<sup>3</sup>) or lower (\*1)

Other radionuclides (nuclides that emit α rays)

: 4×10<sup>-3</sup> (Bq / cm<sup>3</sup>) or lower (\*2)

(Represented by a value relative to total α)

Other radionuclides (nuclides that do not emit α rays)

: 2×10<sup>-2</sup> (Bq / cm<sup>3</sup>) or lower (\*2)

(Represented by a value relative to <sup>60</sup>Co)

\*3 The figures in parentheses in the annual release target control level row indicate control targets set to be achieved by March 30, 2006.

\*4 Since active tests were introduced in March 31, 2006, these radionuclides were added as items to be measured.