(4) Reprocessing Facility (radioactive liquid waste)

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|---|---|---|---|---|
| Japan Atomic Energy Agency<br>Reprocessing facility | | Tritium<br>[$^{3}$H]<br>(Bq) | Iodine<br>[$^{129}$I]<br>(Bq) | Iodine<br>[$^{131}$I]<br>(Bq) |
| | Annual release | 1.0E+12 | 6.5E+06 | N.D. |
| | Annual release control target values | 1.9E+15 | 2.7E+10 | 1.2E+11 |
| Japan Nuclear Fuel Ltd.<br>Reprocessing plant<br>(Reprocessing facility) | | Tritium<br>[3H]<br>(Bq) | Iodine<br>[$^{129}$I]<br>(Bq) | Iodine<br>[$^{131}$I]<br>(Bq) |
| | Annual release | 4.1E+12 | 1.2E+07 | N.D. |
| | Annual release control target values | 1.8E+16 | 4.3E+10 | 1.7E+11 |

| | | | | |
|---|---|---|---|---|
| Japan Atomic Energy Agency<br>Reprocessing facility | | – | Strontium<br>[$^{89}$Sr]<br>(Bq) | Strontium<br>[$^{90}$Sr]<br>(Bq) |
| | Annual release | – | N.D. | N.D. |
| | Annual release control target values | – | 1.6E+10 | 3.2E+10 |
| Japan Nuclear Fuel Ltd.<br>Reprocessing plant<br>(Reprocessing facility) | | Other nuclides (nuclides that do not emit alpha rays)/Breakdown (by nuclide) | | |
| | | Cobalt<br>[60Co]<br>(Bq) | – | Strontium - Yttrium<br>[90Sr-90Y]<br>(Bq) |
| | Annual release | N.D. | – | N.D. |
| | Annual release control target values | – | | |

| | | | | |
|---|---|---|---|---|
| Japan Atomic Energy Agency<br>Reprocessing facility | | Cerium - Praseodymium<br>[$^{144}$Ce-$^{144}$Pr]<br>(Bq) | – | – |
| | Annual release | N.D. | – | – |
| | Annual release control target values | 1.2E+11 | – | – |
| Japan Nuclear Fuel Ltd.<br>Reprocessing plant<br>(Reprocessing facility) | | Other nuclides (nuclides that do not emit alpha rays)/Breakdown (by nuclide) | | |
| | | Cerium - Praseodymium<br>[$^{144}$Ce-$^{144m}$Pr, $^{144}$Pr]<br>(Bq) | Europium<br>[$^{154}$Eu]<br>(Bq) | Plutonium<br>[$^{241}$Pu]<br>(Bq) |
| | Annual release | N.D. | N.D. | N.D. |
| | Annual release control target values | – | | |

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

| Total alpha radioactivity (Bq) | Plutonium [Pu (α)] (Bq) | – | – | Total beta radioactivity (excluding $^{3}H$) (Bq) |
|---|---|---|---|---|
| N.D. | 2.0E+04 | – | – | N.D. |
| 4.1E+09 | 2.3E+09 | – | – | 9.6E+11 |
| Other radionuclides (nuclides that emit alpha rays) (Bq) | Breakdown of the left column (by nuclide) | | | Other radionuclides (nuclides that do not emit alpha rays) (Bq) |
| | Plutonium [Pu (α)] (Bq) | Americium [Am (α)] (Bq) | Curium [Cm (α)] (Bq) | |
| N.D. | N.D. | N.D. | N.D. | N.D. |
| 3.8E+09 | – | | | 2.1E+11 |

| Zirconium - Niobium [$^{95}$Zr-$^{95}$Nb] (Bq) | Ruthenium [$^{103}$Ru] (Bq) | Ruthenium - Rhodium [$^{106}$Ru-$^{106}$Rh] (Bq) | Cesium [$^{134}$Cs] (Bq) | Cesium [$^{137}$Cs] (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 [$^{134}$Cs] (Bq) | Cesium - Barium [$^{137}$Cs-$^{137m}$Ba] (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/cm$^{3}$)

Japan Atomic Energy Agency, Reprocessing facility

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

Japan Nuclear Fuel Ltd., Reprocessing plant (Reprocessing facility)

$^{131}$I : 2E-02 or less
Other radionuclides (nuclides that emit alpha rays) : 4E-03 or less
(The value for all alpha values was used.)
Pu (α) : 1E-03 or less
Am (α) : 6E-05 or less
Cm (α) : 6E-05 or less
Other radionuclides (nuclides that do not emit alpha rays) : 4E-02 or less
(The value for all beta (gamma) values was used.)
$^{60}$Co : 2E-02 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-$^{137m}$Ba : 2E-02 or less
$^{144}$Ce-$^{144m}$Pr,$^{144}$Pr : 2E-02 or less
$^{154}$Eu : 2E-02 or less
$^{241}$Pu : 3E-02 or less