

The findings of the National System of Safeguards of Japan from its safeguards activities in 2023 are as follows;

It was confirmed by the safeguards activities conducted by the Nuclear Regulation Authority in 2023 that all nuclear material in Japan were properly accounted for and controlled by its licensees.

Attachment 1: Safeguards Activities in Japan in 2023

Attachment 2: Inventory and Inventory Changes of Nuclear Material in Japan

# Safeguards Activities in Japan in 2023

Attachment 1

## ① Summary of Safeguards Activities under the National System of Safeguards of Japan

| Categories under legal system for nuclear regulation <sup>1</sup> | Number of facilities and LOFs <sup>2</sup> |                                    | Person-days of national inspection |                              |                              | Number of actions taken based on the regulation for functioning SSAC |  |                    |   |                  |                  |                  |                                   |  |
|---|--|------------------------------------|------------------------------------|------------------------------|------------------------------|--|--|--------------------|---|------------------|------------------|------------------|-----------------------------------|--|
|   | Total                                      | Recipients of national inspections | Total                              | Conducted by JSGO inspectors | Conducted by NMCC inspectors | Licence granted for minor users of nuclear material <sup>3</sup>     | Approval of accounting provisions <sup>4</sup> |                    | Number of accounting reports submitted <sup>5</sup> |                  |                  |                  |                                   |  |
|   |  |                                    |                                    |                              |                              |  | Initial approval                               | Amendment approval | Total   | ICR              | MBR              | PIL              | Biannual reports from minor users |  |
| Nuclear Fuel Fabrication  | 6 (6)                                      | 6 (6)                              | 341 (291)                          | 41 (24)                      | 300 (267)                    | N/A  | 1 (2)  | 13 (9)             | 75 (73)   | 58 (57)          | 9 (8)            | 8 (8)            | N/A                               |  |
| Research Reactor  | 22 (22)                                    | 16 (16)                            | 90 (80)                            | 0 (0)                        | 90 (80)                      |  |  |                    | 69 (69)   | 25 (23)          | 22 (23)          | 22 (23)          |                                   |  |
| Power Reactor   | 57 (57)                                    | 54 (54)                            | 222 (188)                          | 30 (12)                      | 192 (176)                    |  |  |                    | 157 (155)   | 31 (19)          | 63 (68)          | 63 (68)          |                                   |  |
| Power reactor under R&D stage                                     | 2 (2)                                      | 2 (2)                              | 17 (23)                            | 3 (0)                        | 14 (23)                      |  |  |                    | 4 (6)   | 0 (2)            | 2 (2)            | 2 (2)            |                                   |  |
| Reprocessing  | 3 (3)                                      | 3 (3)                              | 810 (770)                          | 13 (14)                      | 797 (756)                    |  |  |                    | 42 (43)   | 36 (36)          | 3 (3)            | 3 (4)            |                                   |  |
| Various users (R&D etc.)  | 199 (201)                                  | 42 (37)                            | 564 (440)                          | 32 (19)                      | 532 (421)                    |  |  |                    | 771 (765)   | 351 (342)        | 211 (212)        | 209 (211)        |                                   |  |
| Minor Users (Nuclear Use)   | 7 (9)                                      | 1 (2)                              | 2 (4)                              | 2 (2)                        | 0 (2)                        | 0 (0)  | 0 (0)  | 0 (0)              | 21 (33)   | 5 (15)           | 8 (9)            | 8 (9)            |                                   |  |
| Minor Users (Non-Nuclear Use) <sup>3</sup>                        | 1,862 (1,853)                              | N/A                                | N/A                                |                              |                              | 34 (42)  | 34 (42)  | 107 (87)           | 3,714 (3,692)                                       | N/A              |                  |                  | 3,714 (3,692)                     |  |
| <b>Total</b>  | <b>2,158 (2,153)</b>                       | <b>124 (120)</b>                   | <b>2,046 (1,796)</b>               | <b>121 (71)</b>              | <b>1,925 (1,725)</b>         | <b>34 (42)</b>   | <b>35 (44)</b>                                 | <b>120 (96)</b>    | <b>4,853 (4,836)</b>                                | <b>506 (494)</b> | <b>318 (325)</b> | <b>315 (325)</b> | <b>3,714 (3,692)</b>              |  |

\* Records in 2022 are shown in parentheses for comparison.

1 Categorized in accordance with the Law for the Regulations of Nuclear Source Material, Nuclear Fuel Material and Reactors (Nuclear Reactor Regulation Law).

2 When counting the number of facilities and LOFs, the categorization of IAEA safeguards implementation is followed. The categorization does not always correspond with the categorization of domestic regulation.

Minor users are licenced to use natural and/or depleted uranium up to 300g and/or thorium up to 900g.

3 Only those who use Nuclear Fuel Material

4 All licencees shall have approved accounting provisions to account for and control internationally controlled material (incl. nuclear material) properly.

5 All licencees shall submit accounting reports based on the requirement of the domestic regulation and accounting provisions.

## ② Design Information Verification (DIV) and Complementary Access (CA)

| Type of verifications                        | Number of verifications | Person-days of verifications |
|--|-------------------------|------------------------------|
| Design Information Verification <sup>6</sup> | 73 (67)                 | 96 (83)                      |
| Complementary Access <sup>7</sup>            | 28 (29)                 | 37 (32)                      |
| <b>Total</b>                                 | <b>101 (96)</b>         | <b>133 (115)</b>             |

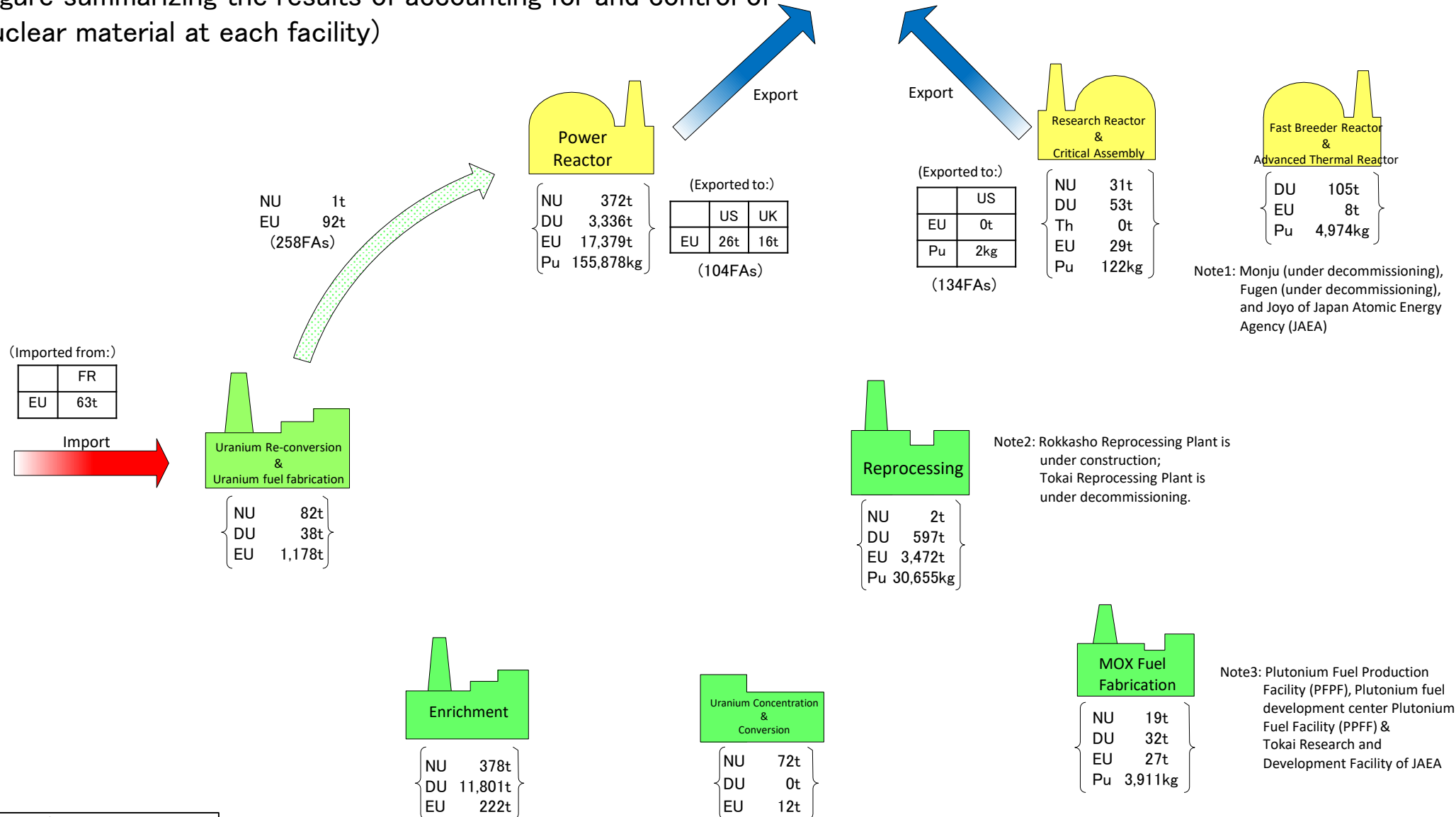
6 The IAEA, in co-operation with JSGO, conducts DIVs based on safeguards agreement to verify the correctness and completeness of the design information of facilities provided to the IAEA.

7 The IAEA conducts CAs based on additional protocol to the safeguards agreement to confirm the absence of undeclared nuclear material and activities. (Except the number of activities by Ministry of Foreign Affairs.)

# Inventory and Inventory changes of Nuclear Material in Japan

## ① Major inventory and inventory changes in 2023

(Figure summarizing the results of accounting for and control of nuclear material at each facility)



Note1: Monju (under decommissioning), Fugen (under decommissioning), and Joyo of Japan Atomic Energy Agency (JAEA)

Note2: Rokkasho Reprocessing Plant is under construction; Tokai Reprocessing Plant is under decommissioning.

Note3: Plutonium Fuel Production Facility (PPFF), Plutonium fuel development center Plutonium Fuel Facility (PPFF) & Tokai Research and Development Facility of JAEA

NU: Natural Uranium  
DU: Depleted Uranium  
Th: Thorium  
EU: Enriched Uranium  
Pu: Plutonium  
FAs: Number of Fuel Assemblies

- Facilities are categorized according to the stages of nuclear fuel cycle and the categorization does not correspond to regulatory categorization.
- Each category does not include associated facilities of main facilities.
- Inventory is based on the weight of elements as of 31 December 2023.
- More than 0.1kg of Pu and more than 0.1t of another elements are described.

## ② Nuclear Material Inventory by facility types

| Categories of Nuclear Material <sup>1</sup><br>Categories under legal system for nuclear regulation <sup>1</sup> | Natural uranium | Depleted uranium   | Thorium  | Enriched uranium   |              | Plutonium            |
|--|-----------------|--------------------|----------|--------------------|--------------|----------------------|
|  | (t)             | (t)                | (t)      | U(t)               | U-235(t)     | (kg)                 |
| Nuclear Fuel Fabrication   | 460<br>(462)    | 11,839<br>(11,839) | 0<br>(0) | 1,400<br>(1,429)   | 57<br>(58)   | –<br>(–)             |
| Research Reactor   | 31<br>(31)      | 63<br>(63)         | 0<br>(0) | 34<br>(34)         | 2<br>(2)     | 1,839<br>(1,840)     |
| Power Reactor  | 372<br>(371)    | 3,336<br>(3,336)   | –<br>(–) | 17,379<br>(17,339) | 337<br>(341) | 155,878<br>(153,863) |
| Power Reactor under R&D stage  | –<br>(–)        | 95<br>(95)         | –<br>(–) | 3<br>(3)           | 0<br>(0)     | 3,257<br>(3,257)     |
| Reprocessing   | 2<br>(2)        | 597<br>(597)       | 0<br>(0) | 3,472<br>(3,472)   | 33<br>(33)   | 30,655<br>(30,656)   |
| Various users (R&D, etc.)  | 120<br>(120)    | 252<br>(252)       | 5<br>(5) | 49<br>(49)         | 1<br>(1)     | 3,992<br>(3,995)     |
| Minor Users (Nuclear Use)  | 0<br>(0)        | 0<br>(0)           | 0<br>(0) |                    |              |                      |
| Minor Users (Non-Nuclear Use)  | 0<br>(0)        | 0<br>(0)           | 0<br>(0) |                    |              |                      |
| Total <sup>2</sup>   | 986<br>(986)    | 16,183<br>(16,183) | 5<br>(5) | 22,337<br>(22,326) | 430<br>(435) | 195,621<br>(193,612) |

\* Figures are based on the data as of 31 December, 2023. For comparison, corresponding data as of 31 December, 2022 are provided in parantheses below.

\* – In the table, “–” indicates that there is no inventory, and “0” indicates that there is an inventory of less than 0.5.

1 Categorized in accordance with the Law for the Regulations of Nuclear Source Material, Nuclear Fuel Material and Reactors (Nuclear Reactor Regulation Law) and the relevant cabinet order.

2 Due to rounding, total figure may not correspond to the sum of figures above.

### ③ Inventory of nuclear material subject to bilateral nuclear cooperation agreements

As of 31 December 2023

| Supplying Party \ Categories of Nuclear Material*    | Natural Uranium (t) | Depleted Uranium (t) | Thorium (t) | Enriched Uranium   |              | Plutonium (kg)       |
|--|---------------------|----------------------|-------------|--------------------|--------------|----------------------|
|  |                     |                      |             | U (t)              | U-235 (t)    |                      |
| United States of America                             | 79<br>(80)          | 3,774<br>(3,774)     | 1<br>(1)    | 16,085<br>(16,108) | 307<br>(310) | 138,329<br>(137,503) |
| United Kingdom of Great Britain and Northern Ireland | 12<br>(12)          | 447<br>(447)         | 0<br>(0)    | 2,297<br>(2,300)   | 39<br>(41)   | 21,945<br>(21,450)   |
| France   | 36<br>(36)          | 6,520<br>(6,520)     | 0<br>(0)    | 6,181<br>(6,142)   | 99<br>(99)   | 61,348<br>(60,818)   |
| Canada   | 676<br>(676)        | 5,293<br>(5,293)     | 0<br>(0)    | 5,726<br>(5,723)   | 99<br>(100)  | 56,838<br>(56,546)   |
| Australia  | 20<br>(20)          | 1,031<br>(1,031)     | -<br>(-)    | 3,966<br>(3,979)   | 74<br>(76)   | 33,113<br>(32,603)   |
| China  | 27<br>(27)          | 254<br>(254)         | -<br>(-)    | 297<br>(297)       | 7<br>(7)     | 2,236<br>(2,237)     |
| EURATOM  | 48<br>(48)          | 6,520<br>(6,521)     | 0<br>(0)    | 8,155<br>(8,121)   | 166<br>(168) | 28,002<br>(26,781)   |
| Kazakhstan   | -<br>(-)            | -<br>(-)             | -<br>(-)    | 37<br>(37)         | 1<br>(1)     | -<br>(-)             |
| Republic of Korea                                    | -<br>(-)            | -<br>(-)             | -<br>(-)    | -<br>(-)           | -<br>(-)     | -<br>(-)             |
| Viet Nam   | -<br>(-)            | -<br>(-)             | -<br>(-)    | -<br>(-)           | -<br>(-)     | -<br>(-)             |
| Jordan   | -<br>(-)            | -<br>(-)             | -<br>(-)    | -<br>(-)           | -<br>(-)     | -<br>(-)             |
| Russia   | -<br>(-)            | -<br>(-)             | -<br>(-)    | 67<br>(67)         | 3<br>(3)     | -<br>(-)             |
| Turkey   | -<br>(-)            | -<br>(-)             | -<br>(-)    | -<br>(-)           | -<br>(-)     | -<br>(-)             |
| United Arab Emirates                                 | -<br>(-)            | -<br>(-)             | -<br>(-)    | -<br>(-)           | -<br>(-)     | -<br>(-)             |
| India  | -<br>(-)            | -<br>(-)             | -<br>(-)    | -<br>(-)           | -<br>(-)     | -<br>(-)             |
| IAEA   | 1<br>(1)            | 2<br>(2)             | -<br>(-)    | 0<br>(0)           | 0<br>(0)     | 1<br>(1)             |
| Other  | 168<br>(168)        | 2,075<br>(2,075)     | 4<br>(4)    | 357<br>(358)       | 8<br>(8)     | 4,359<br>(4,249)     |

- This table shows the weight of nuclear material subject to each bilateral nuclear cooperation agreement or agreement on the supply of uranium from the IAEA.

Multiple agreements sometimes apply to the same nuclear material. In such cases, the material is counted in multiple times.

- Records in 2022 are shown in parentheses below for comparison.

- In the table, “-” indicates that there is no inventory, and “0” indicates that there is an inventory of less than 0.5.

\* Categorized in accordance with the Law for the Regulations of Nuclear Source Material, Nuclear Fuel Material and Reactors (Nuclear Reactor Regulation Law) and the relevant cabinet order.