

The findings of the National System of Safeguards of Japan from its safeguards activities in 2022 are as follows;

It was confirmed by the safeguards activities conducted by the Nuclear Regulation Authority in 2022 that all nuclear material in Japan were properly accounted for and controlled by its licensees.

Attachment 1: Safeguards Activities in Japan in 2022

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

# Safeguards Activities in Japan in 2022

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)	291 (311)	24 (12)	267 (299)	N/A	2 (1)	9 (26)	73 (68)	57 (53)	8 (8)	8 (7)	N/A	
Research Reactor	22 (22)	16 (16)	80 (140)	0 (3)	80 (137)				69 (66)	23 (21)	23 (23)	23 (22)		
Power Reactor	57 (57)	54 (54)	188 (259)	12 (8)	176 (251)				155 (158)	19 (38)	68 (60)	68 (60)		
Power reactor under R&D stage	2 (2)	2 (2)	23 (16)	0 (0)	23 (16)				6 (6)	2 (2)	2 (2)	2 (2)		
Reprocessing	3 (3)	3 (3)	770 (742)	14 (3)	756 (739)				43 (42)	36 (36)	3 (3)	4 (3)		
Various users (R&D etc.)	201 (201)	37 (29)	440 (402)	19 (7)	421 (395)				765 (768)	342 (355)	212 (208)	211 (205)		
Minor Users (Nuclear Use)	9 (9)	2 (0)	4 (0)	2 (0)	2 (0)	0 (0)	0 (0)	0 (1)	33 (30)	15 (10)	9 (10)	9 (10)		
Minor Users (Non-Nuclear Use) <sup>3</sup>	1,853 (1,837)	N/A	N/A			42 (38)	42 (38)	87 (140)	3,692 (3,663)	N/A			3,692 (3,663)	
合計	2,153 (2,137)	120 (110)	1,796 (1,870)	71 (33)	1,725 (1,837)	42 (38)	44 (39)	96 (167)	4,836 (4,801)	494 (515)	325 (314)	325 (309)	3,692 (3,663)	

\* Records in 2021 are shown in parentheses for comparison.

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

<sup>2</sup> 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.

<sup>3</sup> Only those who use Nuclear Fuel Material

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

<sup>5</sup> 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>	67 (84)	83 (95)
Complementary Access <sup>7</sup>	29 (30)	32 (34)
Total	96 (114)	115 (129)

<sup>6</sup> 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.

<sup>7</sup> 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

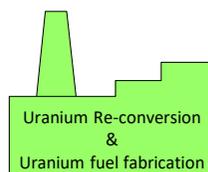
## ① Major inventory and inventory changes in 2022

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

(Imported from:)

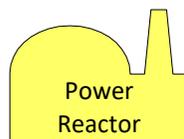
	FR
EU	70t

Import



NU	84t
DU	39t
EU	1,207t

NU 1t  
EU 8t  
(56As)



NU	371t
DU	3,336t
EU	17,339t
Pu	153,863kg

Import

	FR
DU	6t
Pu	631kg

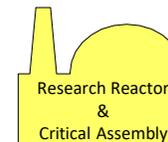
(16As)

Export

(Exported to:)

	US	UK
EU	29t	21t

(124As)



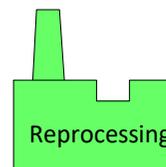
NU	31t
DU	53t
Th	0t
EU	29t
Pu	124kg



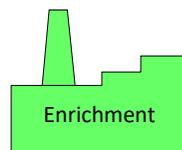
DU	105t
EU	8t
Pu	4,974kg

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

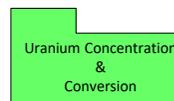
Note2: Rokkasho Reprocessing Plant is under construction; Tokai Reprocessing Plant is under decommissioning.



NU	2t
DU	597t
EU	3,472t
Pu	30,656kg



NU	378t
DU	11,801t
EU	222t



NU	72t
DU	0t
EU	12t



NU	19t
DU	32t
EU	27t
Pu	3,914kg

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 2022.
- 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> 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	462 (463)	11,839 (11,839)	0 (0)	1,429 (1,368)	58 (55)	– (–)
Research Reactor	31 (31)	63 (63)	0 (0)	34 (34)	2 (2)	1,840 (1,840)
Power Reactor	371 (370)	3,336 (3,330)	– (–)	17,339 (17,392)	341 (349)	153,863 (151,619)
Power Reactor under R&D stage	– (–)	95 (95)	– (–)	3 (3)	0 (0)	3,257 (3,279)
Reprocessing	2 (2)	597 (597)	0 (0)	3,472 (3,472)	33 (33)	30,656 (30,657)
Various users (R&D, etc.)	120 (121)	252 (252)	5 (5)	49 (48)	1 (1)	3,995 (3,997)
Minor Users (Nuclear Use)	0 (0)	0 (0)	0 (0)			
Minor Users (Non-Nuclear Use)	0 (0)	0 (0)	0 (0)			
Total <sup>2</sup>	986 (987)	16,183 (16,177)	5 (5)	22,326 (22,317)	435 (440)	193,612 (191,391)

\* Figures are based on the data as of 31 December, 2022. For comparison, corresponding data as of 31 December, 2021 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 2022

Categories of Nuclear Material* Supplying Party	Natural Uranium (t)	Depleted Uranium (t)	Thorium (t)	Enriched Uranium		Plutonium (kg)
				U (t)	U-235 (t)	
United States of America	80 (80)	3,774 (3,754)	1 (1)	16,108 (16,137)	310 (314)	137,503 (136,429)
United Kingdom of Great Britain and Northern Ireland	12 (12)	447 (447)	0 (0)	2,300 (2,311)	41 (43)	21,450 (20,855)
France	36 (36)	6,520 (6,514)	0 (0)	6,142 (6,086)	99 (98)	60,818 (60,042)
Canada	676 (676)	5,293 (5,293)	0 (0)	5,723 (5,719)	100 (100)	56,546 (55,998)
Australia	20 (20)	1,031 (1,031)	- (-)	3,979 (3,994)	76 (79)	32,603 (31,803)
China	27 (27)	254 (254)	- (-)	297 (297)	7 (7)	2,237 (2,236)
EURATOM	48 (48)	6,521 (6,515)	0 (0)	8,121 (8,093)	168 (171)	26,781 (25,072)
Kazakhstan	- (-)	- (-)	- (-)	37 (37)	1 (1)	- (-)
Republic of Korea	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
Viet Nam	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
Jordan	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
Russia	- (-)	- (-)	- (-)	67 (67)	3 (3)	- (-)
Turkey	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
United Arab Emirates	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
India	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
IAEA	1 (1)	2 (2)	- (-)	0 (0)	0 (0)	1 (1)
Other	168 (168)	2,075 (2,075)	4 (4)	358 (358)	8 (8)	4,249 (4,233)

- 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 2021 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.