

The Status Report on Plutonium Management in Japan –2025–

August 5, 2026

Office for Atomic Energy Policy

Cabinet Office

1. Preface

Japan has been limiting its research, development and use of nuclear energy exclusively for peaceful purposes under the Atomic Energy Basic Act.

From the viewpoint of peaceful use under the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, and under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), all nuclear materials and activities in Japan are subject to the stringent safeguards implemented by the International Atomic Energy Agency (IAEA), thus guaranteeing the peaceful use of nuclear energy in Japan*.

In addition, in line with its policy of peaceful use, Japan upholds the principle of not possessing plutonium without specific purposes. The Japan Atomic Energy Commission has also declared the policy to reduce the amount of Japan's plutonium stockpile in "The Basic Principles on Japan's Utilization of Plutonium*¹" published in July 2018. The Basic Principles have also requested the electric power utilities and the Japan Atomic Energy Agency to make public their plutonium utilization plans every fiscal year.

Given the importance of enhancing transparency and gaining public understanding on plutonium utilization at home and abroad, Japan has, in accordance with the IAEA's "Guidelines for the Management of Plutonium*²", published every year since 1994 the management status of unirradiated separated plutonium (hereinafter referred to as "separated plutonium") used and stored both within and outside of Japan, and has also submitted the status annually to the IAEA.

In this report, Japan voluntarily publishes the use, storage status and other items in a more detailed manner than required by "the Guidelines for the Management of Plutonium" to further improve its transparency.

2. The Current Status of Separated Plutonium Management in Japan

(1) Overview

As of the end of 2025, the total amount of Japan's separated plutonium managed both within and outside Japan was approximately 44.4 tons, of which approximately 9.9 tons were held domestically and approximately 34.5 tons were held abroad.

In 2025, there was neither any consumption of separated plutonium stored in Japan, nor any recovery of new separated plutonium. Meanwhile, approximately 1.3 tons of separated plutonium held by electric power utilities in France was fabricated into MOX (mixed uranium-plutonium oxide) fuel for use at Units 3 and 4 of Kansai Electric Power Company's Takahama Nuclear Power Station and transported to Japan.

Accordingly, the amount of separated plutonium stored in Japan stood at approximately 9.9 tons at the end of 2025 while the amount of separated plutonium stored overseas was approximately 34.5 tons at the end of 2025.

As a result, the total amount of separated plutonium at the end of 2025 was approximately 44.4 tons.

The Status of Separated Plutonium Management (Note 1)

<Unit: t Pu>

			As of the end of 2024	As of the end of 2025
Total (Note 2)			44.4	44.4
Held in Japan			8.6	9.9
(Total)			35.8	34.5
Held abroad	Breakdown	UK	21.7	21.7
		France	14.1	12.8

Note 1: The amounts of separated plutonium take into account nuclear losses, etc., including losses (decreases) resulting from the natural radioactive decay of nuclear fuel materials.

Note 2: All figures are approximate. Totals may not add up exactly due to rounding.

(2) The Data in the Attachment

The status of separated plutonium management in Japan as of the end of 2025 is as follows. Unless otherwise mentioned, the amounts of separated plutonium in this document are given in kilograms (kg), and fissile plutonium amounts correspond to the combined amounts of plutonium 239 and plutonium 241. Figures in brackets following the values in each entry denote the figures published for the corresponding entry in the previous year.

"Separated plutonium held in Japan" (See Attachment, Section 1(1))

- 1) Reprocessing facilities: in the form of plutonium nitrate in the separation and purification processes, and of MOX powder in the co-conversion process or stored in storage containers, etc.
- 2) Fuel fabrication facilities: MOX powder held as raw material, plutonium in the testing and fabrication stages, or contained in fresh fuel assemblies.
- 3) Nuclear reactors, etc.: separated plutonium held as fresh fuel at fast reactors and commercial power reactors (including unirradiated MOX fuel loaded into reactors and unirradiated MOX fuel removed from reactors), and plutonium held for research at university and research institute R&D facilities, and fuel for critical assemblies.

"Separated plutonium held abroad" (See Attachment, Section 1(2)) refers to plutonium that has been separated by reprocessing services contracted by Japanese electric

utilities in the United Kingdom and France, but has not yet been returned to Japan. As a rule, this plutonium is to be fabricated into MOX fuels overseas and utilized at commercial reactors in Japan.

"Utilization of separated plutonium (January to December 2025)" (See Attachment Sections 2(1), (2), and (3)) refers to the amount of separated plutonium recovered at reprocessing facilities, the net amount of separated plutonium transferred into the fabrication process at fuel fabrication facilities, and the amount of unirradiated MOX fuel loaded into reactors and irradiated at reactor facilities. These data are presented to provide clearer understanding of the status of separated plutonium management.

* : IAEA Safeguards Conclusion for Japan in 2025^{*3}

Under the Treaty on the NPT, Japan accepts IAEA safeguards on all nuclear material, including plutonium, in the country, in accordance with the Comprehensive Safeguards Agreement concluded with the IAEA and its Additional Protocol.

At the IAEA Board of Governors held in June 2026, based on safeguards activities conducted by the IAEA in 2025, the IAEA concluded that all nuclear material has remained in peaceful activities (the broader conclusion), on the basis that no indications of diversion of declared nuclear material from peaceful nuclear activities, and no indications of undeclared nuclear material or activities, were found in Japan.

* 1 https://www.aec.go.jp/kettei/kettei/20180731_2.pdf

* 2 <https://www.iaea.org/sites/default/files/infcirc549.pdf>

* 3 <https://www.da.nra.go.jp/view/NRA100018797?contents=NRA100018797-004-007#pdf=NRA100018797-004-007>

References

[Reference 1] The amounts of separated plutonium held in nuclear reactors and other facilities in Japan as of the end of the year 2025

[Reference 2] The balance of separated plutonium held in Japan as of the end of the year 2025

[Reference 3] The Status of Separated Plutonium in Japan (2025) (illustration)

[Reference 4] The amounts of plutonium held in Japan as of the end of the year 2025 published by the IAEA under *the Guidelines for the Management of Plutonium*

[Reference 5] The amounts of plutonium held in each country as of the end of the year 2024 published by the IAEA under *the Guidelines for the Management of Plutonium*

Attachment:

The Status of Separated Plutonium Management in Japan as of the end of the year 2025

1. Separated plutonium in storage

(Previous year's figures in brackets)

(1) Separated plutonium held in Japan

<Unit: kg Pu>

Reprocessing Facilities (Note 1)	
MOX powder, etc. (Note 2)	3,781 (3,784)
Fissile Plutonium	2,455 (2,459)

Note 1: "Reprocessing Facilities" refers to the reprocessing plants operated by the Japan Atomic Energy Agency (JAEA) and Japan Nuclear Fuel Limited (JNFL).

Note 2: The changes from the figures at the end of the previous year are attributable to movements of separated plutonium associated with analytical sampling, inspections and related activities.

Fuel Fabrication Facilities (Note 3)		
Breakdown (Note 4)	MOX powder, etc. (held as raw material or in the testing and fabrication stages)	3,267 (3,295)
	Fresh fuel assemblies, etc. (held as completed fuel assemblies, etc.)	640 (613)
Total ^(*)		3,907 (3,908)
Fissile Plutonium		2,690 (2,691)

Note 3: "Fuel Fabrication Facilities" refers to the JAEA plutonium fuel fabrication facility.

Note 4: The changes from the figures at the end of the previous year are attributable to movements of separated plutonium between material balance areas associated with analytical sampling, inspections, safety checks of stored materials, consolidation of nuclear materials and related activities.

Reactors and Other Facilities	Fast Reactors (Note 5)	Commercial Reactors	R&D Facilities, etc. (Note 6)
Fresh fuel assemblies held at nuclear reactor facilities, etc.	411 (411)	1,700 (418)	113 (113)
Total ^(*)		2,224 (941)	
Fissile Plutonium		1,493 (659)	

Note 5: "Fast Reactors" refers to *Joyo* and *Monju*.

Note 6: "R&D Facilities, etc." refers to critical assemblies and other similar facilities.

Total ^(*)		9,911 (8,634)
Fissile Plutonium		6,637 (5,809)

(2) Separated plutonium held abroad (Note 7)

Separated plutonium held abroad is to be fabricated into MOX fuel overseas and then transported to Japan for use in pluthermal programs. Accordingly, it is considered unlikely that concern would be raised regarding its use from the viewpoint of the peaceful use of nuclear energy. Nevertheless, with a view of further enhancing transparency, the status of separated plutonium held abroad for fuel

fabrication is presented below in a manner consistent with that for separated plutonium held in Japan.

<Unit: kg Pu>

	Separated plutonium	
		Fissile Plutonium
United Kingdom	21,693 (21,713)	14,416 (14,437)
France	12,788 (14,079)	8,247 (9,089)
Total ^(*)	34,481 (35,792)	22,663 (23,526)

Note 7: For the amounts of separated plutonium stored at reprocessing facilities among the separated plutonium held overseas, account is taken of nuclear losses (see Reference 2, Note 2) in addition to recoveries and others.

2. Utilization of separated plutonium (January to December 2025)

(Previous year's figures in brackets)

(1) The amount of separated plutonium recovered <Unit: kg Pu>

Amount of separated plutonium recovered (Note 8)	Reprocessing Facilities
	0 (0)

Note 8: "The amount of separated plutonium recovered" is defined as the amount of plutonium contained in MOX powder recovered after separation and conversion processes.

(2) The amount of separated plutonium transferred into the fuel fabrication process <Unit: kg Pu>

Amount of separated plutonium transferred into the fuel fabrication process (Note 9)	Fuel Fabrication Facilities
	0 (0)

Note 9: "The amount of separated plutonium transferred into the fuel fabrication processes" is defined as the net amount of plutonium contained in MOX powder and other materials transferred from the raw material storage areas into the fabrication process areas within fuel fabrication facilities for the fabrication of fresh fuel and related purposes.

(3) The amount of separated plutonium in unirradiated MOX fuel loaded and irradiated in nuclear reactors <Unit: kg Pu>

Amount of separated plutonium in MOX fuel loaded and irradiated in nuclear reactors (Note 10)	Nuclear Reactors
	0 (0)

Note 10: "The amount of separated plutonium in MOX fuel loaded and irradiated in nuclear reactors" is defined as the amount of plutonium contained in MOX fuel which was previously stored as unirradiated fuel and subsequently loaded into the reactor cores and irradiated. The MOX fuel loaded into a reactor core is in either an "unirradiated" state or an "under irradiation" state. "The amount of separated plutonium in MOX fuel loaded and irradiated in nuclear reactors" is used here to present its utilization status more clearly.

(*) Totals may not add up exactly due to rounding.

The amounts of separated plutonium held in nuclear reactors and other facilities in Japan as of the end of the year 2025

Operator		Separated plutonium held		Separated plutonium loaded into the reactor cores (Note 1)		(Reference) Irradiated plutonium loaded into reactor cores (Note 2)	
		(kg Pu)	Fissile plutonium (kg Puf)	(kg Pu)	Fissile plutonium (kg Puf)	(kg Pu)	Fissile plutonium (kg Puf)
Fast Reactors	Japan Atomic Energy Agency	411	286	—	—	261	184
Commercial Reactors	Tokyo Electric Power Company Holdings	205	138	—	—	210	143
	Chubu Electric Power Company	213	145	—	—	—	—
	Kansai Electric Power Company	1,283	834	—	—	945	605
	Shikoku Electric Power Company	—	—	—	—	—	—
	Kyushu Electric Power Company	—	—	—	—	—	—
Research and Development Facilities, etc.	Japan Atomic Energy Agency (Critical assemblies and other R&D facilities)	113	91				
	Other organizations	0	0				

Note 1: No reactor irradiated separated plutonium during the year 2025.

Note 2: For MOX fuel, the amount shown for each operator is calculated by subtracting the total amount of irradiated plutonium removed from the reactors from the total amount of unirradiated separated plutonium loaded into reactor cores by the end of the year 2025. The figures represent the amounts of plutonium, measured at the unirradiated stage, contained in MOX fuel loaded into reactor cores as of the end of 2025. MOX fuel may be temporarily removed from the reactor and stored outside the reactor during periodic utility inspections.

Reference Data (as of the end of the year 2025):

- Plutonium contained in spent fuel, etc. held at reactor facilities and elsewhere: 174,721 kg Pu
- Plutonium contained in spent fuel held at reprocessing facilities: 26,734 kg Pu
- Plutonium contained in trace amounts in radioactive waste and other plutonium recognized as unrecoverable for the time being: 141 kg Pu

The Balance of Separated Plutonium held in Japan as of the end of the year 2025.

Unit: kg Pu

< Changes during the year 2025 > (Note 1)

Total amount loaded into reactors and irradiated	—
Receipts and shipments at facilities	1,283
Increase/decrease within facility processes	△ 5
Net increase/decrease	1,278

[Reprocessing Facilities]

From reprocessing separation/purification process to co-conversion raw material storage ^(Note 1)			
Inventory as of January 1, 2025 (the end of the year 2024)			3,784
Increase/ decrease	Increase due to receipts (total received during the year 2025)		0
	Decrease due to shipments (total shipped during the year 2025)		△ 0
	Change within reprocessing facility processes ^(Note 2)		△ 4
	Breakdown	Transfer to retained waste	△ 1.0
		Retransfer from retained waste	0.9
		Nuclear loss	△ 0.5
		Measured discard	△ 0.0
Material unaccounted for (MUF)		△ 3.2	
Inventory as of December 31, 2025			3,781

[Fuel Fabrication Facilities]

[Fuel Fabrication Facilities]			
From MOX powder feedstock to fuel assembly fabrication (Note 1)			
Inventory as of January 1, 2025 (the end of the year 2024)			3,908
Increase/decrease	Increase due to receipts (total received during the year 2025)		0
	Decrease due to shipments (total shipped during the year 2025)		Δ 0
	Change within fuel fabrication facility processes (Note 2)		Δ 1
	Breakdown	Nuclear loss	Δ 1.8
		Material unaccounted for (MUF)	0.5
Inventory as of December 31, 2025			3,907

[Nuclear Reactors and Other Facilities]

"Fast Reactors", "Commercial Power Reactors", and "R&D Facilities, etc." (Note 1)			
Inventory as of January 1, 2025 (the end of the year 2024)			941
Increase/decrease	Increase due to receipts (total received during the year 2025)		1,283
	Decrease due to newly loading into reactors and irradiation (total loaded and irradiated during the year 2025)		—
	Decrease due to shipments (total shipped during the year 2025)		△ 0
	Change within reactor facilities, etc. (Note 2)		△ 0
	Breakdown	Nuclear loss, etc.	△ 0.0
Inventory as of December 31, 2025			2,224

Note 1: The total may not add up exactly due to rounding. "Δ" indicates a consequential decrease.

Note 2: The breakdown of increases/decreases in processes at each facility includes, in addition to receipts into and shipments from the facility, inventory changes in nuclear material accountancy (transfer to retained waste, retransfer from retained waste, nuclear loss, measured discard and others), and material unaccounted for. The definitions of inventory changes and material unaccounted for are given below. These are concepts recognized internationally in nuclear material accountancy. For clarity in this table, decreases in plutonium inventory are shown as negative values (Δ) and increases as positive values (without a sign). Therefore, the notation may differ from standard nuclear material accountancy conventions.

- Transfer to retained waste:
Amount of nuclear fuel material that are removed from book inventory, which is deemed to be in unrecoverable status for the time being but which is held, such as plutonium contained in high-level or low-level radioactive liquid generated during the recovery of nuclear fuel materials from spent fuel solutions.
- Retransfer from retained waste:
Amount of nuclear fuel material that was previously retained as waste but has been returned to the book inventory.
- Nuclear loss:
Amount of the loss (decrease) of nuclear fuel material due to natural decay.
- Measured discard:
Amount of nuclear fuel material that has been measured, or estimated on the basis of measurements, and disposed of in such a way (vitrification, etc.) that it is not suitable for further nuclear use.
- Material unaccounted for (MUF):
The difference between "the book inventory" and "the physical inventory", the latter of which is determined through actual measurement during physical inventory verification. MUF may arise from measurement errors or from adhesion of plutonium to equipment in facilities that handle plutonium in powder or liquid form.

The Status of Separated Plutonium in Japan (2025)

[Separated plutonium held abroad]

Total amount held abroad	34,481
---------------------------------	--------

(Changes within facilities)

[Total amount irradiated] Amount of plutonium loaded into reactors and irradiated	—
Change within reactor facilities, etc.	1,283

[Inventory]

Fresh fuel assemblies, etc.	2,224
-----------------------------	-------

Nuclear Reactors and Other Facilities

Spent Fuels

Total amount shipped out	0
--------------------------	---

Total amount in Japan	9,911
------------------------------	-------

(Changes within facilities)

[Total amount separated] Amount of plutonium contained in spent fuel sent for reprocessing	—
[Amount recovered] Amounts of plutonium recovered after separation and conversion	—

Change within reprocessing facility processes	△4
---	----

[Inventory]

MOX powder, etc.	3,781
------------------	-------

Reprocessing Facilities

Total amount shipped out	—
--------------------------	---

Fuel Fabrication Facilities

(Changes within facilities)

[Amount used] Amount of plutonium used for fuel fabrication	—
---	---

Change within fuel fabrication facility processes	△1
---	----

[Inventory]

MOX powder, etc.	3,267
Fresh fuel assemblies, etc.	640
Total	3,907

(Note 1) "Inventory" shows the figures as of the end of the year 2025.
 (Note 2) "Changes within facilities" represents the figures for the one-year period of 2025.
 (Note 3) "△" indicates a decrease.

The Amounts of Plutonium Held in Japan as of the end of the year 2025 published
by the IAEA under *the Guidelines for the Management of Plutonium*

(Previous year's figures in brackets)

Annual figures for holdings of civil unirradiated plutonium*¹

(Unit: t Pu)

1. Unirradiated separated plutonium in product stores at reprocessing plants	3.8	(3.8)
2. Unirradiated separated plutonium in the course of manufacture or fabrication and plutonium contained in unirradiated semi-fabricated or unfinished products at fuel or other fabricating plants or elsewhere	3.3	(3.3)
3. Plutonium contained in unirradiated MOX fuel, including that loaded into a reactor core prior to use, or other unirradiated plutonium in fabricated products at reactor sites or elsewhere	2.8	(1.4)
4. Unirradiated separated plutonium held elsewhere	0.1	(0.1)
[Sum of lines 1-4 above]* ²	[9.9	(8.6)]
(i) Plutonium included in lines 1-4 above belonging to foreign bodies.	0	(0)
(ii) Plutonium in any of the forms in lines 1-4 above held in locations in other countries and therefore not included above.	34.5* ³	(35.8* ³)
(iii) Plutonium not included in lines 1-4 above which is in international shipment prior to its arrival in the recipient State.	0	(0)

Estimated amounts of plutonium contained in spent civil reactor fuel*⁴

(Unit: t Pu)

1. Plutonium contained in spent fuel at civil reactor sites.	175	(164)
2. Plutonium contained in spent fuel at reprocessing plants.	27	(27)
3. Plutonium contained in spent fuel held elsewhere.	<0.5	(<0.5)
[Sum of lines 1-3 above]* ⁵	[201	(191)]
Definitions:		
Line 1 : covers estimated amounts of plutonium contained in fuel discharged from civil reactors		
Line 2 : covers estimated amounts of plutonium contained in fuel received at reprocessing plants but not yet reprocessed.		

*1: Rounded to 100 kg plutonium.

*2, *5: All totals have been calculated for convenience and are not subject to publication by the IAEA.

*3: Loss of Pu-241 due to radioactive decay is taken into account in the assessment of the amount of fissile plutonium held at the overseas reprocessing plants.

*4: Rounded to 1,000 kg plutonium.

The Amounts of Plutonium Held in Each Country as of the end of the year 2024 published by the IAEA under *the Guidelines for the Management of Plutonium*

(Unit:t Pu)

	Unirradiated plutonium * ¹	Plutonium contained in spent fuel * ²
United States	49.4	841
Russia	66.1	208
United Kingdom	140.9	31
France	113.7	311.8
China	Unreported	Unreported
Japan	8.6	191
Germany	0.0	130.6
Belgium	(< 50kg * ³)	50
Switzerland	< 2kg	24

The figures for Japan correspond to those shown in Reference 4.

The figures for other countries were compiled by the Office for Atomic Energy Policy, Cabinet office of Japan, based on the data published by the IAEA.

*¹: The total amounts of unirradiated separated plutonium in product stores of reprocessing plants, in the course of manufacture or fabrication, plutonium contained in unirradiated MOX fuel or other fabricated products at reactor sites etc., and held elsewhere. Each item is rounded to 100 kg plutonium, and items reported as less than 50 kg are not included in the totals.

*²: The total amounts of plutonium contained in spent fuel at civil reactor sites, at reprocessing plants, or held elsewhere. Each item is rounded to 1,000 kg plutonium, and items reported as less than 500 kg are not included in the totals.

*³: The amount of unirradiated separated plutonium in the course of manufacture or fabrication, plutonium contained in unirradiated MOX fuel or other fabricated products at reactor sites etc., and held elsewhere, is less than 50 kg for each category.

About the Guidelines for the Management of Plutonium

February 1994:

The nine countries concerned (the United States, Russia, the United Kingdom, France,

China, Japan, Germany, Belgium and Switzerland) began deliberations on the establishment of an international framework to enhance the transparency of plutonium utilization.

December 1997:

The nine countries adopted *the Guidelines for the Management of Plutonium* which, together with the basic principles governing the utilization of plutonium, provided for the publication of plutonium holdings and other related measures.

March 1998:

The IAEA published for the first time the plutonium holdings of each country and their policies concerning plutonium management, as reported to the IAEA in accordance with the Guidelines.