

Attachment-2

A Review of Plans for the Utilization of Plutonium to be Recovered at the Rokkasho Reprocessing Plant

June 12, 2009

The Federation of Electric Power Companies of Japan

Japan Nuclear Fuel Ltd. (JNFL) has been performing active tests at the Rokkasho Reprocessing Plant (RRP) since March 2006 using spent fuel. These tests result in the separation of plutonium as a product of reprocessing. To ensure transparency in the use of this plutonium, each electric power company drew up a plutonium utilization plan for fiscal 2009 and announced it on March 6 this year.

Later, on April 16, JNFL altered the schedule for starting up the Rokkasho MOX fuel fabrication plant from fiscal 2012 to fiscal 2015. Then, on June 2, the Chairman of the Atomic Energy Commission of Japan (AEC) advised that the electric power companies review the plutonium utilization plan in order to ensure the transparency of plutonium usage. In response, the electric power companies have revised the program for fiscal 2009 as stated in the attachment.

The electric power companies will continue to carry out pluthermal programs (utilization of plutonium in light water reactors) as quickly as possible and are seeking to implement these programs at 16 to 18 nuclear reactors across the country by fiscal 2015 at the latest, when the MOX fuel fabrication plant comes on line.

In the early stage of the programs, the electric power companies are planning to use MOX fuel manufactured overseas by using plutonium recovered from overseas reprocessing. Once the Rokkasho MOX fuel fabrication plant commences operation, plutonium recovered at RRP will also be used in due course.

Reference:

According to the paper entitled "Concerning the Basic Position on Japan's Use of

Plutonium” decided by the AEC on August 5, 2003, each utility shall announce a "Plutonium Utilization Plan" for its share of the plutonium to be recovered at RRP. In addition, in the “Framework for Nuclear Energy Policy” decided by the AEC on October 11, 2005 and resolved by the Cabinet on October 14, 2005, the utilities are expected to announce their plans for the utilization of plutonium in an appropriate manner.

- Attachments

- (1) Plans for the Utilization of Plutonium to be Recovered at the Rokkasho Reprocessing Plant in FY2009
- (2) Amount of Plutonium Owned by the Japanese Utilities (as of the end of December 2008)

Plans for the Utilization of Plutonium to be Recovered at the Rokkasho Reprocessing Plant (RRP), FY2009

Federation of Electric Power Companies of Japan

Owner	Amount of reprocessing *1	Amount of plutonium *2			Purpose of use (used as LWR fuel) *3		
	Amount of spent fuel to be reprocessed in FY2009 (tU)*4	Amount of plutonium retained by the end of FY2008*5 (tPuf)*6	Amount of plutonium expected to be recovered in FY2009 (tPuf)*6	Amount of plutonium expected to be retained by the end of FY2009*7 (tPuf)*6	Place to be used	Estimated annual usage *8 (tPuf per year) *6	Timing of the start of utilization*9 and estimate of the period required for utilization*10
Hokkaido EPCo	14	0.1	0.0	0.1	Tomari Power Station Unit 3	0.2	After FY 2015 for a period equivalent to 0.5 years
Tohoku EPCo	-	0.1	0.0	0.1	Onagawa Nuclear Power Station Unit 3	0.2	After FY 2015 for a period equivalent to 0.5 years
Tokyo EPCo	61	0.8	0.3	1.0	Three to four Tokyo EPCo units, based on continued efforts by Tokyo EPCo to regain public trust from local communities at sites	0.9 – 1.6	After FY 2015 for a period equivalent to 0.6-1.1 years
Chubu EPCo	16	0.2	0.1	0.3	Hamaoka Nuclear Power Station Unit 4	0.4	After FY 2015 for a period equivalent to 0.6 years
Hokuriku EPCo	3	0.0	0.0	0.0	Shika Nuclear Power Station	0.1	After FY 2015 for a period equivalent to 0.1 years
Kansai EPCo	12	0.6	0.2	0.8	Takahama Power Station Units 3 and 4; one or two units at Ohi Power Station	1.1 – 1.4	After FY 2015 for a period equivalent to 0.6-0.7 years
Chugoku EPCo	11	0.1	0.0	0.1	Shimane Nuclear Power Station Unit 2	0.2	After FY 2015 for a period equivalent to 0.6 years
Shikoku EPCo	19	0.1	0.1	0.2	Ikata Power Station Unit 3	0.4	After FY 2015 for a period equivalent to 0.5 years
Kyushu EPCo	18	0.3	0.1	0.4	Genkai Nuclear Power Station Unit 3	0.4	After FY 2015 for a period equivalent to 1.1 years
Japan Atomic Power Company (JAPC)	5	0.1	0.1	0.2	Tsuruga Power Station Unit 2; Tokai Daini Power Station	0.5	After FY 2015 for a period Equivalent to 0.4 years
Subtotal	160	2.3	0.9	3.2		4.4 – 5.4	
Electric Power Development Company (EPDC)		Amount to be transferred from other utilities*11			Ohma Nuclear Power Station	1.1	
Total	160	2.3	0.9	3.2		5.5 – 6.5	

The above plans shall be updated and detailed as future progress is made in the pluthermal program, such as the start of operation of Rokkasho MOX fuel fabrication plant, etc..

- *1 "Amount of reprocessing" is based on JNFL's reprocessing program.
- *2 "Amount of plutonium" represents the estimated amount of plutonium to be recovered from reprocessing at the RRP by the end of FY2008, in FY2009 and the total amount by the end of FY2009. Recovered plutonium is to be allocated to the utilities in proportion to the amount of fissile plutonium contained in the spent fuel they have delivered to JNFL's RRP. Therefore, plutonium will also be allocated to the utilities whose spent fuel is not actually reprocessed each fiscal year. Eventually, however, plutonium will be allocated in proportion to the amount of fissile plutonium contained in the spent fuel contracted for reprocessing by each utility.
- *3 In addition to use as LWR fuel, some plutonium may be transferred to JAEA for R&D purposes. Specific amounts of plutonium to be transferred by each utility will be made public once such amounts have been determined.
- *4 Total amount of spent fuel differs due to rounding to an integer.
- *5 Since JNFL made public a "Notification of change on the construction plan for the reprocessing plant" on May 29, 2008, November 25, 2008 and January 30, 2009 in which JNFL's amount of reprocessing in FY2007 was changed from 210tU to 181tU (on May29, 2008) reflecting actual result and reprocessing program in FY2008 was changed from 395tU to 150tU (on November 25, 2008) and from 150tU to 104tU (on January 30, 2009), this amount of plutonium is modified to reflect these changes.
- *6 The amount of plutonium is described as the amount of fissile plutonium (Puf). (Total amount of fissile plutonium may differ due to rounding to the first decimal place.)
- *7 "Amount of plutonium expected to be retained by the end of FY2009" is the sum of the "Amount of plutonium retained by the end of FY2008" and "Amount of plutonium expected to be recovered in FY2009", but may differ due to rounding to the first decimal place.
- *8 "Estimated annual usage" represents the annual average amount of plutonium contained in MOX fuel to be loaded into power reactors according to each utility's pluthermal program. In some cases, the estimate may include plutonium recovered from overseas reprocessing.
- *9 "Timing of the start of utilization" is defined as after FY2015, when the Rokkasho MOX fuel fabrication plant, to be constructed adjacent to the RRP, is scheduled to commence operation. Until then, plutonium will be stored at RRP in the form of uranium-plutonium mixed oxide powder.
- *10 "Estimate of the period required for utilization" is the "Amount of plutonium expected to be retained by the end of FY2009" divided by the "estimated annual usage." (It does not necessarily reflect the actual period of use, because some of the plutonium is expected to be transferred to EPDC and JAEA, and the "estimated annual usage" may include the use of the plutonium recovered from the overseas reprocessing in some cases.)
- *11 The specific amount to be transferred to EPDC by the utilities will be made public once it has been determined.

(Reference)

Amount of Plutonium (as of the end of December 2008)

(unit:tonnes Puf)

Owner	Amount in Japan				Amount overseas			Total A+B+C+D+E
	JAEA A*	JNFL B	Power station C	Subtotal A+B+C	Recovered in France D	Recovered in U.K. E	Subtotal D+E	
Hokkaido EPCo	-	0.0	-	0.0	0.1	-	0.1	0.1
Tohoku EPCo	0.0	0.0	-	0.1	0.2	0.1	0.3	0.3
Tokyo EPCo	0.1	0.4	0.3	0.8	2.6**	4.6	7.1	7.9
Chubu EPCo	0.1	0.1	-	0.2	1.7**	0.6	2.3	2.5
Hokuriku EPCo	-	0.0	-	0.0	0.1	-	0.1	0.1
Kansai EPCo	0.2	0.3	-	0.5	6.6**	1.8	8.4	8.9
Chugoku EPCo	0.0	0.0	-	0.1	0.4	0.3	0.7	0.8
Shikoku EPCo	0.1	0.1	-	0.1	0.6**	0.6	1.2	1.4
Kyushu EPCo	0.1	0.2	-	0.3	1.0**	0.8	1.9	2.1
JAPC	0.1	0.1	-	0.2	0.5	2.7	3.1	3.3
(EPDC)								
Total	0.7	1.2	0.3	2.2	13.8	11.4	25.2	27.4

※Totals may not add up owing to rounding to the first decimal place.

* Excludes plutonium already provided to Japan Atomic Energy Agency (JAEA) for research and development purposes.

** includes plutonium in MOX fuel assemblies that already fabricated, are under fabrication and are to fabricate.