V. Nuclear Power

1. Nuclear Power Generation

(1) General Data on Nuclear Power Plants in Operation

	Fukushima Daiichi Nuclear Power Station						Fukushima Daini	
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 1	Unit 2
Output (MW)	460	784	784	784	784	1,100	1,100	1,100
Decided on by the Council (Number)	Dec. 25, '68* (49)	Dec. 22, '67 (47)	May 23, '69 (50)	Jun. 30, '71 (55)	Feb. 26, '71 (54)	Dec. 17, '71 (57)	Jun. 7, '72 (59)	Mar. 17, '75 (66)
Application for License to Install [Section 23 of the Nuclear Regulation Law]	Nov. 19, '68*	Sep. 18, '67	Jul. 1, '69	Aug. 5, '71	Feb. 22, '71	Dec. 21, '71	Aug. 28, '72	Dec. 21, '76
Date of License Granted	Apr. 7, '69*	Mar. 29, '68	Jan. 23, '70	Jan. 13, '72	Sep. 23, '71	Dec. 12, '72	Apr. 30, '74	Jun. 26, '78
Start of Construction Work (construction project authorized) [Electricity Enterprises Law Article 47]	Sep. 29, '67	May 27, '69	Oct. 17, '70	May 8, '72	Dec. 22, '71	Mar. 16, '73	Aug. 21 '75	Jan. 23, '79
(Start of Foundation Excavation)	Apr. 1, '67	Jan. 18, '69	Aug. 25, '70	Sep. 12, '72	Dec. 22, '71	May 18, '73	Nov. 1, '75	Feb. 28, '79
Start of Commercial Operation	Mar. 26, '71	Jul. 18, '74	Mar. 27, '76	Oct. 12, '78	Apr. 18, '78	Oct. 24, '79	Apr. 20, '82	Feb. 3, '84
Number of Fuel Assemblies Loaded (Tons-U)	69	94	94	94	94	132	132	132
(Pieces)	400	548	548	548	548	764	764	764
Type of Reactor Container	Mark I	Mark I	Mark I	Mark I	Mark I	Mark II	Mark II	Mark II Advanced
Domestic Content (%)	56	53	91	91	93	63	98	99
Main Contractor	G E	G E Toshiba	Toshiba	Hitachi	Toshiba	G E Toshiba	Toshiba	Hitachi
Location	Ohkuma-machi, Futaba-gun, Fukushima Pref.				Futaba-machi, Futaba-gun, Fukushima Pref.		Naraha-machi, Futaba-gun, Fukushima Pref.	

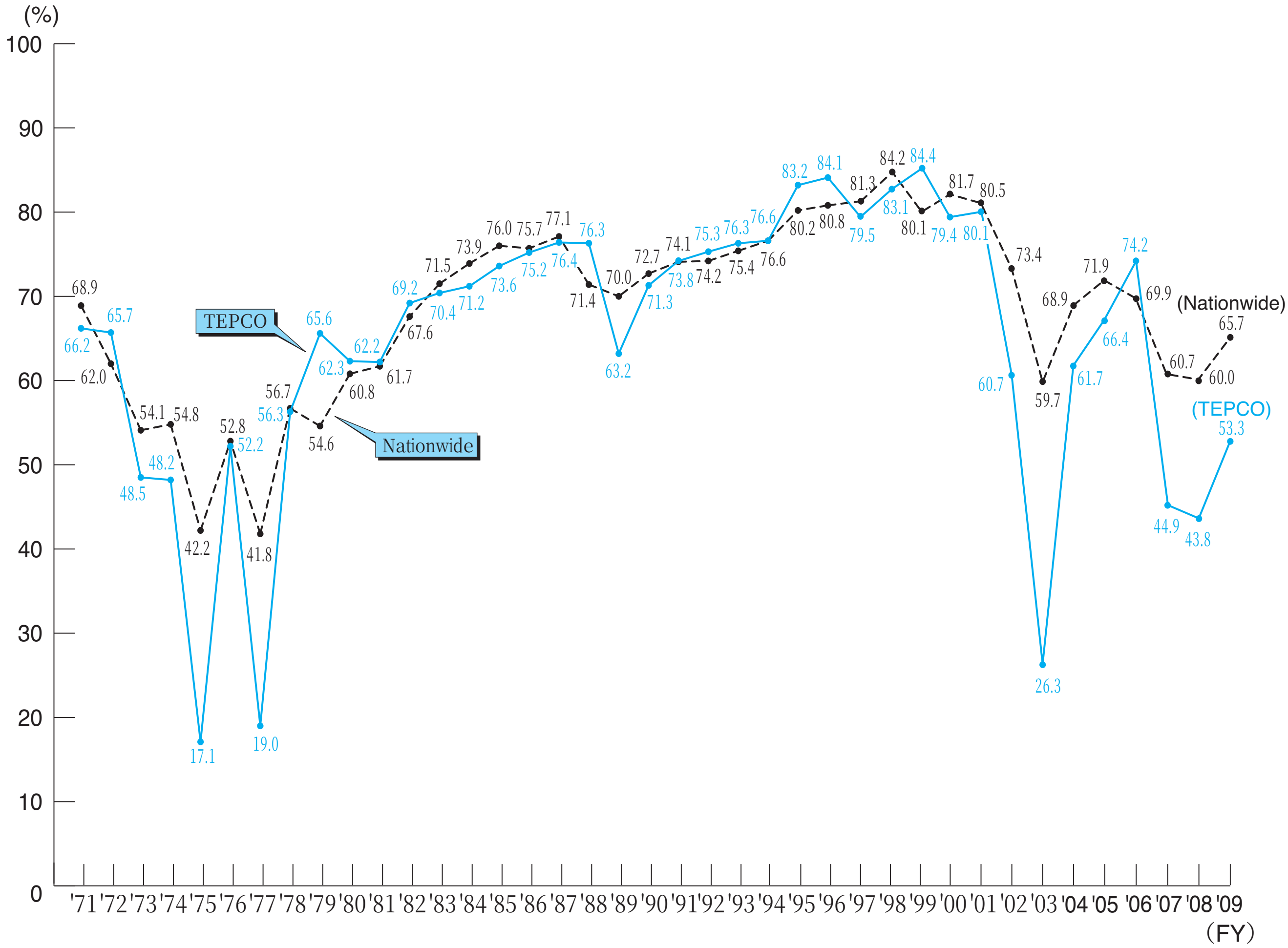
Notes: 1. Figures for fuels loaded indicate the weight (in tons-U) of uranium fuel in the upper row and the number (in pieces) of fuel assemblies in the lower row.

2. For Fukushima Daiichi Unit 1, the dates (*) given indicate those after a change in capacity (from 400 MW to 460 MW).

(as of the end of March 2010)

Nuclear Power Station			Kashiwazaki-Kariwa Nuclear Power Station						
	Unit 3	Unit 4	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,356	1,356
	Mar. 15, '77	Jul. 14, '78	Jul. 4, '74	Mar. 26, '81	Mar. 27, '85	Mar. 27, '85	Mar. 26, '81	Mar. 18, '88	Mar. 18, '88
	(71)	(75)	(65)	(84)	(99)	(99)	(84)	(108)	(108)
	Aug. 16, '78	Aug. 16, '78	Mar. 20, '75	May 11, '81	Apr. 11, '85	Apr. 11, '85	May 11, '81	May 23, '88	May 23, '88
	Aug. 4, '80	Aug. 4, '80	Sep. 1, '77	May 6, '83	Apr. 9, '87	Apr. 9, '87	May 6, '83	May 15, '91	May 15, '91
	Nov. 10, '80	Nov. 10, '80	Nov. 4, '78	Aug. 22, '83	Jun. 16, '87	Jun. 16, '87	Aug. 22, '83	Aug. 23, '91	Aug. 23, '91
	Dec. 1, '80	Dec. 1, '80	Dec. 1, '78	Oct. 26, '83	Jul. 1, '87	Feb. 5, '88	Oct. 26, '83	Sep. 17, '91	Feb. 3, '92
	Jun. 21, '85	Aug. 25, '87	Sep. 18, '85	Sep. 28, '90	Aug. 11, '93	Aug. 11, '94	Apr. 10, '90	Nov. 7, '96	Jul. 2 '97
	132	132	132	132	132	132	132	150	150
	764	764	764	764	764	764	764	872	872
	Mark II Advanced	Mark II Advanced	Mark II	Mark II Advanced	Mark II Advanced	Mark II Advanced	Mark II Advanced	Made of reinforced concrete	Made of reinforced concrete
	99	99	99	99	99	99	99	89	89
	Toshiba	Hitachi	Toshiba	Toshiba	Toshiba	Hitachi	Hitachi	Toshiba Hitachi G E	Hitachi Toshiba G E
	Tomioka-machi, Futaba-gun, Fukushima Pref.		Kashiwazaki-shi, Niigata Pref.				Kashiwazaki-shi and Kariwa-mura, Niigata Pref.		

(2) Nuclear Power Plant Capacity Factor Trend



Notes:

1. Figures decreased in FY 2002 and FY 2003 due to the suspension of a large number of nuclear plants for inspection and repair.
2. The capacity utilization rates do not include preoperation tests. The figures do not necessarily add up to the total shown because fractions were rounded off.
3. $\text{Capacity factor} = \dfrac{\text{Electricity generation}}{\text{Authorized capacity} \times \text{Number of calendar hours}} \times 100\ (\%)$

(3) Nuclear Power Plant Performance

Nuclear Plant Unit No. (start date)	Fukushima Daiichi						Fukushima Daini				Kashiwazaki-Kariwa							Total	Remarks		
	No 1 (3·26·'71)	No 2 (7·18·'74)	No 3 (3·27·'76)	No 4 (10·12·'78)	No 5 (4·18·'78)	No 6 (10·24·'79)	No 1 (4·20·'82)	No 2 (2·3·'84)	No 3 (6·21·'85)	No 4 (8·25·'87)	No 1 (9·18·'85)	No 2 (9·28·'90)	No 3 (8·11·'93)	No 4 (8·11·'94)	No 5 (4·10·'90)	No 6 (11·7·'96)	No 7 (7·2·'97)		National Average	BWR	PWR
Output (MW)	460	784	784	784	784	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,356	1,356	17,308	45,083	25,551	19,366
FY 1971	66.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66.2	68.9	67.4	72.4
1972	65.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65.7	62.0	68.6	52.8
1973	48.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48.5	54.1	62.0	43.2
1974	26.2	66.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48.2	54.8	55.2	52.2
1975	16.3	16.5	99.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.1	42.2	35.4	46.6
1976	24.8	47.7	72.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52.2	52.8	55.6	49.1
1977	6.0	3.9	41.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.0	41.8	29.0	51.2
1978	40.4	54.6	43.5	82.9	68.3	-	-	-	-	-	-	-	-	-	-	-	-	56.3	56.7	58.5	54.1
1979	58.3	65.7	50.8	59.5	70.9	98.0	-	-	-	-	-	-	-	-	-	-	-	65.6	54.6	64.2	42.6
1980	55.0	45.2	68.8	68.2	68.7	64.1	-	-	-	-	-	-	-	-	-	-	-	62.3	60.8	65.0	55.7
1981	29.7	46.6	76.1	70.8	69.6	65.5	-	-	-	-	-	-	-	-	-	-	-	62.2	61.7	62.4	60.7
1982	53.8	80.0	40.6	63.2	62.0	70.3	98.1	-	-	-	-	-	-	-	-	-	-	69.2	67.6	67.2	68.2
1983	63.4	63.1	55.0	91.1	56.9	81.1	69.0	100.0	-	-	-	-	-	-	-	-	-	70.4	71.5	70.6	72.6
1984	92.1	56.4	66.7	71.3	81.9	63.4	68.3	79.5	-	-	-	-	-	-	-	-	-	71.2	73.9	72.2	76.2
1985	46.7	53.7	77.4	64.9	75.8	58.3	74.4	84.2	96.4	-	99.7	-	-	-	-	-	-	73.6	76.0	74.1	78.4
1986	65.9	85.1	85.7	56.3	60.6	67.6	90.1	84.3	74.1	-	72.9	-	-	-	-	-	-	75.2	75.7	75.9	75.8
1987	61.7	71.3	57.1	79.6	53.9	88.4	82.4	74.4	77.1	99.8	82.6	-	-	-	-	-	-	76.4	77.1	77.2	77.3
1988	97.1	62.3	63.2	93.9	90.6	71.1	65.6	77.6	71.1	75.3	84.3	-	-	-	-	-	-	76.3	71.4	72.9	69.9
1989	13.7	80.2	93.7	69.8	81.4	39.2	66.5	87.2	0.0	77.8	78.0	-	-	-	-	-	-	63.2	70.0	66.5	74.6
1990	64.3	66.1	50.7	62.5	60.1	90.9	65.8	73.9	33.8	96.4	62.9	95.2	-	-	99.8	-	-	71.3	72.7	72.9	72.6
1991	31.1	45.8	60.1	88.6	77.0	76.6	89.4	74.3	67.0	79.1	90.3	74.8	-	-	77.0	-	-	74.1	73.8	75.0	72.4
1992	71.6	62.3	89.5	71.8	87.7	62.5	70.9	62.4	97.9	61.3	84.9	81.5	-	-	75.4	-	-	75.3	74.2	74.1	74.4
1993	52.7	84.4	74.0	59.5	64.3	57.1	61.1	97.6	74.3	83.0	74.6	94.7	99.8	-	78.7	-	-	76.3	75.4	76.7	74.7
1994	100.0	34.9	61.2	90.1	64.4	99.9	79.6	76.1	49.8	89.4	76.1	79.1	79.1	63.0	98.7	-	-	76.6	76.6	77.8	75.2
1995	79.4	76.0	67.8	92.3	80.4	73.8	100.0	73.2	90.9	84.0	81.9	83.5	85.5	90.5	81.5	-	-	83.2	80.2	82.5	77.6
1996	45.1	88.4	97.2	74.4	96.9	65.9	73.0	87.7	96.1	73.6	91.7	74.3	100.0	87.1	85.6	100.0	-	84.1	80.8	83.5	77.5
1997	99.7	81.9	15.0	50.7	73.0	86.6	66.7	92.1	81.1	87.2	74.2	100.0	86.8	81.5	76.3	83.0	100.0	79.5	81.3	79.7	83.4
1998	84.0	36.0	64.6	95.8	81.5	81.3	75.9	80.2	89.7	100.0	78.8	88.4	73.1	88.1	100.0	93.5	84.5	83.1	84.2	84.6	83.7
1999	69.3	72.8	66.8	92.9	68.4	85.6	100.0	88.7	75.2	87.8	87.6	89.2	83.4	100.0	84.3	90.1	73.9	84.4	80.1	79.5	80.9
2000	72.2	78.4	99.9	66.4	49.6	68.7	78.4	75.9	99.7	71.9	95.6	70.6	100.0	66.4	75.8	81.7	86.1	79.4	81.7	79.9	84.1
2001	37.5	69.0	85.5	88.3	89.5	95.2	74.8	92.2	31.6	86.3	74.1	99.1	75.7	69.2	88.3	80.7	99.0	80.1	80.5	78.6	82.9
2002	56.9	99.7	29.3	46.0	86.3	67.4	76.9	25.5	46.1	53.6	42.4	40.0	35.7	76.7	92.2	82.4	70.0	60.7	73.4	61.9	89.1
2003	0.0	0.0	62.5	2.4	55.0	25.0	57.5	0.0	6.9	0.0	0.0	0.0	0.0	69.1	0.0	91.3	45.9	26.3	59.7	39.0	87.9
2004	0.0	64.6	36.7	69.0	58.1	24.9	49.2	59.2	67.5	37.4	85.2	75.6	75.6	37.1	91.7	75.3	90.6	61.7	68.9	63.4	76.5
2005	47.4	63.9	89.7	30.5	67.1	72.8	86.4	66.0	28.9	58.0	19.5	69.3	85.9	100.8	74.4	71.2	78.4	66.4	71.9	65.2	81.5
2006	72.5	45.8	72.7	76.2	59.7	82.1	74.6	100.6	87.8	41.1	93.4	89.7	79.7	31.5	65.9	98.9	71.2	74.2	69.9	63.9	79.2
2007	40.8	91.7	65.5	86.3	73.1	62.8	75.1	52.4	76.7	76.7	9.2	6.5	29.5	29.6	0.0	7.3	29.9	44.9	60.7	49.7	77.8
2008	54.5	86.0	90.5	70.2	80.5	95.2	89.1	81.6	73.1	93.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.8	60.0	51.1	73.7
2009	91.7	73.4	71.2	82.6	86.5	80.0	93.6	93.4	82.1	71.5	0.0	0.0	0.0	0.0	0.0	55.1	72.3	53.3	65.7	55.5	80.6

Note: $$\text{Capacity factor} = \frac{\text{Electricity generation}}{\text{Authorized capacity} \times \text{Number of calendar hours}} \times 100\ (\%)$$

(4) Problem Occurrence

Problems to be Reported in Accordance with the Electricity Utilities Industry Law and the Law on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors

		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Total (FY 2000-2009)	Cumulative
Fukushima Daiichi	Unit 1	0	0	0	0	0	0	0	1	2	0	3	37
	Unit 2	1	0	0	0	1	2	1	0	0	0	5	29
	Unit 3	0	0	0	0	0	1	0	0	1	1	3	19
	Unit 4	0	0	0	0	0	0	2	0	0	0	2	9
	Unit 5	0	0	0	0	0	1	1	0	1	0	3	14
	Unit 6	1	0	0	0	0	1	0	0	0	0	2	13
	Subtotal	2	0	0	0	1	5	4	1	4	1	18	121
Fukushima Daini	Unit 1	1	0	0	0	0	0	1	0	0	0	2	13(6)
	Unit 2	0	2	1	0	0	1	0	1	0	0	5	9
	Unit 3	0	0	0	0	0	0	0	0	1	0	1	8
	Unit 4	1	0	0	1	0	0	1	0	0	1	4	6
	Subtotal	2	2	1	1	0	1	2	1	1	1	12	36(6)
Kashiwazaki-Kariwa	Unit 1	0	1	0	0	2	0	0	1*	0	0	4	7
	Unit 2	1	0	0	0	0	0	0	0	0	0	1	4
	Unit 3	0	0	0	0	0	0	0	1	0	0	1	2
	Unit 4	2	0	0	0	0	0	0	0	0	0	2	4
	Unit 5	0	0	0	0	1	1	0	0	0	0	2	3
	Unit 6	1	1	0	0	0	0	0	2	1	0	5	7(2)
	Unit 7	0	0	0	0	0	0	0	0	0	0	0	2(1)
	Subtotal	4	2	0	0	3	1	0	4	1	0	15	29(3)
Total		8	4	1	1	4	7	6	6	6	2	45	186(9)

Notes:
1. The cumulative total indicates the number of problems that have occurred since each unit entered service.
2. The figures in parentheses indicate the number of occurrences before entering service and are described separately.
3. Unit 1 of each nuclear power plant includes common facilities. Common Facilities include incinerators, solid radioactive wastes storages and port facility, etc.

* The figure represents overflow stream occurred at the operating floors of Unit 1 to Unit 2 due to the Niigata Chuetsu-Oki Earthquake (July 16, 2007).

(5) Annual Production of Solid Radioactive Wastes

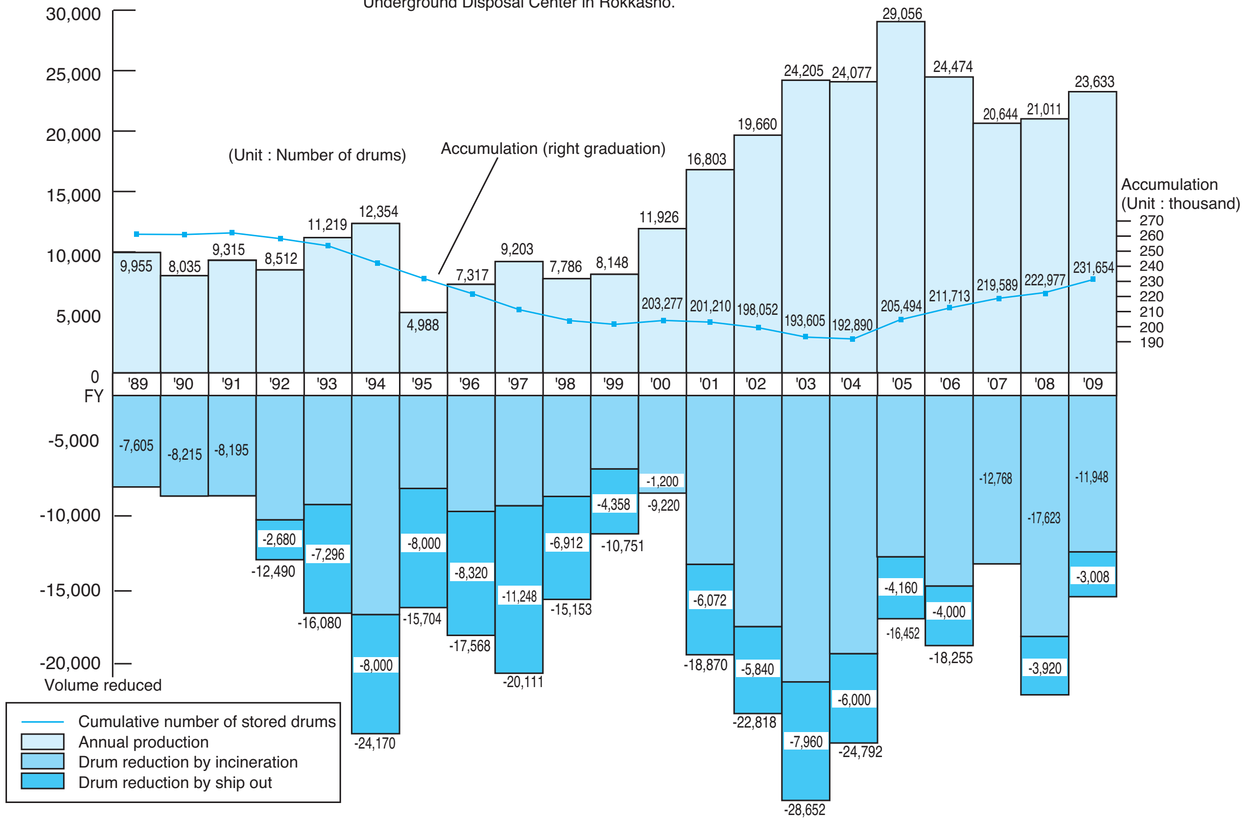
Contents		Unit	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09
Number of Drums	Fukushima Daiichi	Number	6,101	5,696	8,579	5,493	3,429	4,545	4,295	4,879	6,579	8,916	13,994	12,972	19,689	17,651	20,169	17,979	16,694	16,626	16,938
	Fukushima Daini	Number	2,546	2,096	1,698	5,936	914	1,046	1,510	867	660	730	1,353	3,281	3,390	3,566	4,760	2,871	3,259	2,302	2,471
	Kashiwazaki-Kariwa	Number	656	720	874	925	645	914	1,324	995	669	808	862	761	980	2,114	4,127	3,474	691	2,083	4,224
	Total	Number	9,303	8,512	11,151	12,354	4,988	6,505	7,129	6,741	7,908	10,454	16,209	17,014	24,059	23,331	29,056	24,324	20,644	21,011	23,633
Number of Other Stored Items	Fukushima Daiichi	Number of equivalents to drums	12	0	68	0	0	812	2,074	1,045	240	1,472	594	2,646	146	746	0	150	0	0	0
	Fukushima Daini	Number of equivalents to drums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Kashiwazaki-Kariwa	Number of equivalents to drums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	Number of equivalents to drums	12	0	68	0	0	812	2,074	1,045	240	1,472	594	2,646	146	746	0	150	0	0	0
Reduction of Number of Drums by Incineration	Fukushima Daiichi	Number	7,573	9,009	8,456	8,997	7,704	9,190	8,269	8,078	6,065	7,878	11,556	12,347	16,481	15,691	10,374	12,448	11,484	12,629	10,607
	Fukushima Daini	Number	144	252	328	7,173	0	58	594	163	221	18	1,102	4,607	4,161	3,101	1,900	1,794	1,257	1,021	1,285
	Kashiwazaki-Kariwa	Number	478	549	0	0	0	0	0	0	107	124	140	24	50	0	18	13	27	53	56
	Total	Number	8,195	9,810	8,784	16,170	7,704	9,248	8,863	8,241	6,393	8,020	12,798	16,978	20,692	18,792	12,292	14,255	12,768	13,703	11,948
Reduction of Number of Drums by Ship Out	Fukushima Daiichi	Number	0	2,680	7,296	8,000	8,000	8,320	11,248	6,912	4,358	1,200	4,000	3,840	5,960	4,000	3,200	4,000	0	1,920	3,008
	Fukushima Daini	Number	0	0	0	0	0	0	0	0	0	0	2,072	2,000	2,000	2,000	960	0	0	2,000	0
	Kashiwazaki-Kariwa	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	Number	0	2,680	7,296	8,000	8,000	8,320	11,248	6,912	4,358	1,200	6,072	5,840	7,960	6,000	4,160	4,000	0	3,920	3,008
Cumulative Number of Stored Drums	Fukushima Daiichi	Number	244,620	238,627	231,454	219,950	207,675	194,710	179,488	169,377	165,531	165,371	163,809	160,594	157,842	155,802	162,397	163,928	169,138	171,215	174,538
	Fukushima Daini	Number	15,742	17,586	18,956	17,719	18,633	19,621	20,537	21,241	21,680	22,392	20,571	17,245	14,474	12,939	14,839	15,916	17,918	17,199	18,385
	Kashiwazaki-Kariwa	Number	2,547	2,718	3,592	4,517	5,162	6,076	7,400	8,395	8,957	9,641	10,363	11,100	12,030	14,144	18,253	21,714	22,378	24,408	28,576
	Total	Number	262,909	258,931	254,002	242,186	231,470	220,407	207,425	199,013	196,168	197,404	194,743	188,939	184,346	182,885	195,489	201,558	209,434	212,822	221,499
Cumulative Number of Other Stored Items	Fukushima Daiichi	Number of equivalents to drums	162	162	230	230	230	1,042	3,116	4,161	4,401	5,873	6,467	9,113	9,259	10,005	10,005	10,155	10,155	10,155	10,155
	Fukushima Daini	Number of equivalents to drums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Kashiwazaki-Kariwa	Number of equivalents to drums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	Number of equivalents to drums	162	162	230	230	230	1,042	3,116	4,161	4,401	5,873	6,467	9,113	9,259	10,005	10,005	10,155	10,155	10,155	10,155

Notes:
1. Solid waste includes low-level radioactive waste from which water used in the plant has been evaporated and which has been condensed, and the waste has been packed into a drum and set in concrete, and low-level radioactive waste that has been packed inside a drum, for example filter material or water or cloth used in plant work which has been compacted and incinerated.
2. Reduction of number of drums by ship out means the number of drums sent to the Rokkasho Low Level Radioactive Waste Underground Disposal Center located at Rokkasho-mura in Aomori Prefecture.
3. Storage capacity: Fukushima Daiichi, 284,500 drums; Fukushima Daini, 32,000 drums; Kashiwazaki-Kariwa, 45,000 drums (as of the end of FY 2009)

Annual production : Includes the amount newly occurring as a result of power station operations, the portion of waste returning to storage that occurs in the process of making burial filling affixer when waste is taken from existing stored waste, and incinerator ash occurring in the process of incineration / compaction of existing stored waste.

Drum reduction by incineration: Number of drums shipped from storage area for purpose of incinerating existing stored waste.

Drum reduction by ship out: The number of drums filled with the wastes kept in storage that were sent to the Low-Level Radioactive Waste Underground Disposal Center in Rokkasho.



<Reference> Units of Radioactivity and Radiation

(Conversion Table for International new unit system, SI, and former units)

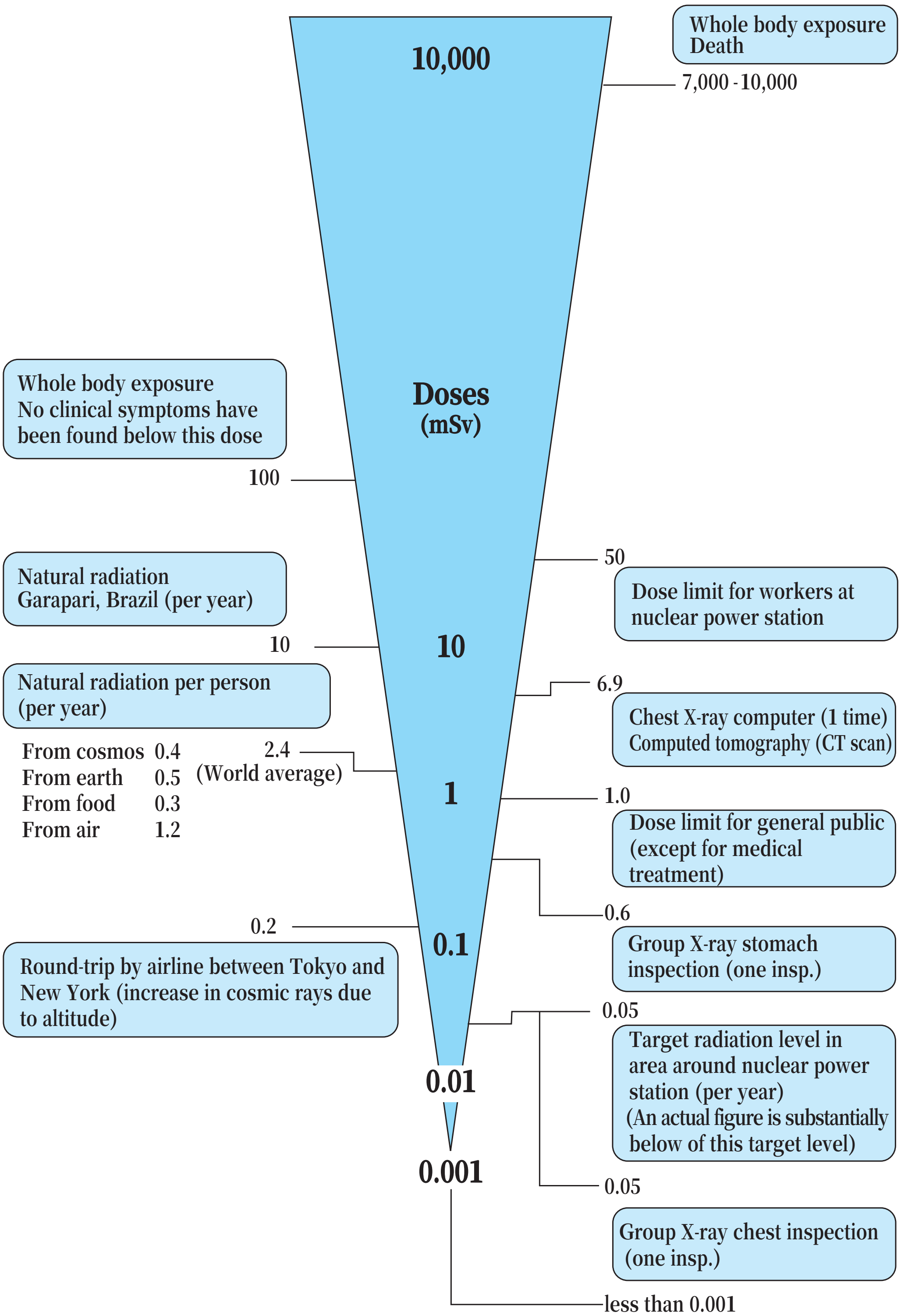
		New Units	Definition	Former Units	Conversion Formula
Unit of Radioactivity: capability to give off radiation		Becquerel, Bq	The number of nuclei that disintegrate in one second, which is an indicator of radioactivity	Curie, Ci	1Ci = 3.7×10^{10} Bq
Units Concerning Radiation Dose	Absorbed Dose: quantity in which radiation absorbed	Gray, Gy	Radiation dose when one joule of energy is absorbed per each 1 kg	Roentgen absorbed dose, rad	1rad = 0.01Gy
	Dose Equivalent: influence degree of radiation received by people	Sievert, Sv	Unit of gray multiplied by the relative biological effectiveness	Roentgen equivalent man, rem	1rem = 0.01 Sv

Relationship of units:

- 1/1,000 of 1 sievert is equivalent to 1 millisievert (mSv).

Note: The former units, curie, rad and rem have been replaced since FY 1989 by the new units, becquerel, gray and sievert, respectively, due to adoption of the law on the international new unit system.

<Reference> Radiation Doses and Their Physical Effects



Notes:
1. For the values in this figure, the effective dose equivalent or effective dose is described.
2. For the amount of natural radiation, the value including the effect of radon by aspiration is described.

Sources: "Report of United Nations Scientific Committee on the Effects of Atomic Radiation 2000" "ICRP Pub 103," etc.

2. Nuclear Fuel Cycle

(1) Outline of Nuclear Fuel Cycle Facilities

	Uranium Enrichment Plant	Low-Level Radioactive Waste Underground Disposal Center	Reprocessing Plant	Vitrified Waste Storage Center	MOX Fuel Fabrication Plant
Site	Oishitai, Rokkasho-mura, Kamikita-gun, Aomori-Prefecture		Iyasakatai, Rokkasho-mura, Kamikita-gun, Aomori-Prefecture		
Project Executor	Japan Nuclear Fuel Limited				
Capacity	Authorized capacity : 1,050 ton-SWU/year (initial operation) Final : 1,500 ton-SWU/year	Authorized capacity : approx. 80,000m^3 (equivalent to 0.4 million drums of 200 ℓ) Projected capacity : approx. 600,000m^3 (equivalent to 3 million drums of 200 ℓ)	Maximum capacity : 800 tU/year Storage capacity for spent fuel : 3,000 tU	Wastes returned from overseas reprocessing plants ; 1,440 canisters of vitrified waste Final : 2,880 canisters	Maximum capacity : 130 tHM/year
Site Square Area	Oishitai approx. 3.6 million m^2 (including roads for plant use only, etc.)		Iyasakatai approx. 3.8 million m^2 (including roads for plant use only, etc.)		
Schedule	Beginning of construction : 1988 Beginning of operation : 1992	Beginning of construction : 1990 Beginning of operation : 1992	Beginning of construction : 1993 Beginning of water flow functional testing : 2001 Beginning of chemical testing : 2002 Beginning of uranium testing : 2004 Beginning of active testing : 2006 Commercial operation : 2010 (planned)	Beginning of construction : 1992 Beginning of operation : 1995	Beginning of construction (planned) : 2010 Beginning of operation (planned) : 2016
Construction Expense	Approx. 250 billion yen	Approx. 160 billion yen*1	Approx. 2,193 billion yen	Approx. 80 billion yen*2	Approx. 190 billion yen

Notes: *1 : Construction expense for 200,000 m^3 low-level radioactive waste (equivalent to Approx. 1 million 200 ℓ drums)

*2 : Construction expense for 1,440 containers of vitrified high-level radio active waste

Note: tU = tones of uranium
In spent fuel, uranium and oxygen are combined. A unit of tones of uranium is the weight of spent fuel minus the weight of oxygen.

(2) Japan's Procurement of Uranium (as of March 2007)

Purchase Contract Type	Supply Countries (country of origin for the portion of import of development)	Contract Quantity (st U_3O_8)
Long- and short-term contracts, and purchase of products	Canada, United Kingdom, South Africa, Australia, France, U.S.A, etc.	Approx. 315,900
Develop-and-import scheme	Niger, Canada, Australia, Kazakhstan	Approx. 82,300
Total		Approx. 398,200

Source: "Nuclear Pocket Book 2009"

Note: st = short ton
Short ton is a unit of weight used mainly in the United States; one short ton is equivalent to approx. 907 kg.

(3) Outline Plan for Plutonium Utilization in Light Water Reactors (MOX utilization)

Plutonium utilization in light water reactors refers to utilizing plutonium in the present nuclear power plants (light water reactors) using MOX fuel, which mixes uranium with plutonium. The electric power industry as a whole is planning to start up the utilization of MOX fuel in 16 to 18 LWR plants by FY 2015.

The plan for MOX fuel utilization in LWRs will play a vitally important role in securing a stable supply of energy in Japan, a resource poor country, in the future.

(4) Amount of Spent Fuel Storage

a. Amount of Spent Fuel Storage

(Unit: Number of fuel assemblies)

Power station	Amount of Storage							Storage Capacity		Amount of Change (For 1 reactor core)
	End of FY 2003	End of FY 2004	End of FY 2005	End of FY 2006	End of FY 2007	End of FY 2008	End of FY 2009	Existing	After Expansion	
Fukushima Daiichi	7,835	8,069	8,153	8,725	9,117	9,657	10,149	15,558	(16,010)	3,356
Fukushima Daini	7,194	5,970	5,532	5,130	5,628	5,614	6,122	10,940	10,940	3,056
Kashiwazaki-Kariwa	10,628	10,980	11,936	11,856	12,372	12,380	12,672	22,479	(22,541)	5,564
Total	25,657	25,019	25,621	25,711	27,117	27,651	28,943	48,977	(49,491)	11,976

(as of the end of March 2010)

Notes:
1. The amount of change for a nuclear reactor refers to the total of fuel assemblies contained in all of the nuclear reactors at each power station. In order to change fuel, each nuclear reactor is operated to allow storage of the amount for 1 reactor core.
2. Figures in parentheses in the storage capacity after expansion column include expanded capacities for spent fuel pools now under construction or in the planning stage and those to be added after the completion of the capacity expansion work.

b. Outline of Common Spent Fuel Storage Facility at Fukushima Daiichi Nuclear Power Station

- Completed in October 1997.
- Scale of facility: Approx. 55 m (W) × approx. 73 m (L) × approx. 35 m (H)
- Storage capacity: 6,840 assemblies (90 assembly racks × 76 units)
  (Approx. 200% of the amount of total reactor core loading)
  Approx. 12 m (W) × approx. 29 m (L) × approx. 11 m (D)
- Storage system: Water pool system
- Accessory equipment
  - Cooling and filtering system : 2 systems (Eventual heat exchange with air)
  - Automatic fuel handling machine : 1 unit
  - Cask transporting system : 1 unit
  - Overhead traveling crane : 2 units (Pool area and cask transport incoming and outgoing area)
  - Transportation cask : 6 casks (Building has a 10 cask storage capacity)

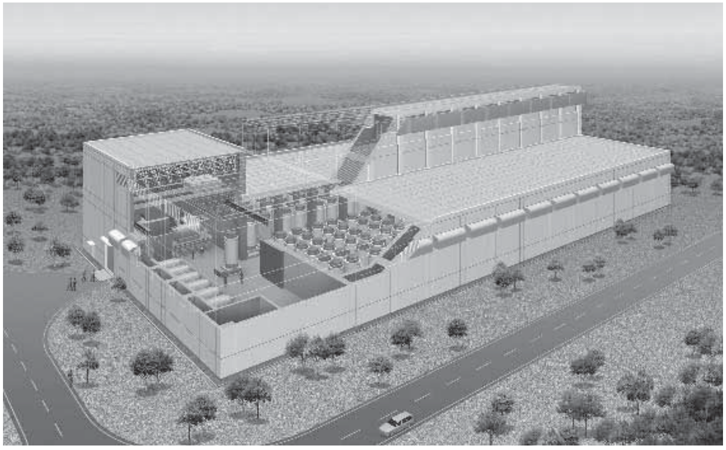
c. Outline of Spent Fuel Storage Cask at Fukushima Daiichi Nuclear Power Station

Item		Large Storage Cask	Medium Storage Cask
Weight		Approx. 115 tons	Approx. 96 tons
Overall Length		Approx. 5.6 m	Approx. 5.6 m
Outside Diameter		Approx. 2.4 m	Approx. 2.2 m
Number of Assemblies Stored		52 assemblies	37 assemblies
Main Structural Materials	Barrel	Alloy steel forging for low temperature service	
	Neutron Shield	Resin (Silicon resin)	
	Primary Cover	Alloy steel forging for low temperature service	
	Secondary Cover	Stainless steel forging	
	Basket	Aluminum alloy with boron additive (boron content: About 1%)	
Internal Filling Gas		Helium gas	
Type of Cover		Double cover system	
Sealing Material		Metal gasket	

(5) Overview of Recycled Fuel Storage Center

In February 2004, TEPCO asked for the cooperation of Aomori Prefecture and Mutsu city in locating of the facility (location cooperation request), and gained approval from the both government in October 2005.
In November 2005, TEPCO and The Japan Atomic Power Company who promotes the business collectively have established Recyclable-Fuel Storage Company in Mutsu city. This company applied to the Minister of Economy, Trade and Industry for permission for spent fuel storage business for "Recycled Fuel Storage Center" in March 2007 via detailed research of the actual place, and acquired the business license in May 2010. The company has begun preparatory work in March 2008.

Conceptual drawing of Recycled Fuel Storage Center



3,000 ton storage building [approx. 130m × 60m × (height) 30m]

	Overview of Recycled Fuel Storage Center
Planned Site of Facility	At Mizukawame, Oaza-Sekine, Mutsu, Aomori Pref.
Main Undertaking	Recyclable-Fuel Storage Co., jointly established by TEPCO and Japan Atomic Power Co.
Start of Operations	Expected to start operation in 2012.
Scale of the Facility	Final storage volume: 5,000 tons-U (3,000 tons-U in the first building) * TEPCO's storage share: approx. 4,000 tons-U * Japan Atomic Power Company's storage share: approx. 1,000 tons-U
Storage Period	The period of use for each facility is 50 years, and the maximum storage period for each cask is also 50 years. * Discussion will be made on removal of stored fuel for recycling within 40 years from start of operations. Note: "Each cask" refers to a storage container that will be put in succession.
Construction Cost	Approx. 100 billion yen (including metal casks) * Metal casks account for 70-80 percent of all construction cost.

(6) Current Status of Nuclear Fuel Reprocessing Contracts

TEPCO has concluded agreements with Nuclear Decommissioning Authority (NDA of the U.K.), AREVA NC (nuclear fuel company in France), Japan Atomic Energy Agency and Japan Nuclear Fuel to reprocess uranium. The following table describes the current status of this endeavor.

(as of the end of March 2010)

Contractors	AREVA NC	NDA	JAEA	JNFL
Reprocessing Plant Name	UP-3 Plant	THORP Plant	Tokai Reprocessing Plant	Rokkasho Reprocessing Plant
Annual Reprocessing Capacity (tU)	1,000/year	1,200/year	40tU · P/year	800/year
Contract Amount (tU)	Approx. 630	Approx. 1,244	Approx. 223	Approx. 12,082
Spent Fuel Delivery Period: Amount Actually Delivered as of the End of March 2010 (tU)	1985 - 1993 Approx. 630	1974 - 1995 Approx. 1,244	1977 - Approx. 223	1998 - Approx. 1,000
Construction and Operation of Reprocessing Plant	November 1989: Operations partially begun. August 1990 : Full scale operations begun.	March 1994 : Operations begun.	Started active test from September 1977. Full start-up in 1981.	Started active test from March 2006. Full scale operations scheduled from 2010.
Amount Actually Reprocessed as of the End of March 2010 : Amount of Spent Fuel Reprocessed by Japanese Electric Utilities (tU)	Approx. 630	Approx. 1,244	Approx. 223	Approx. 122

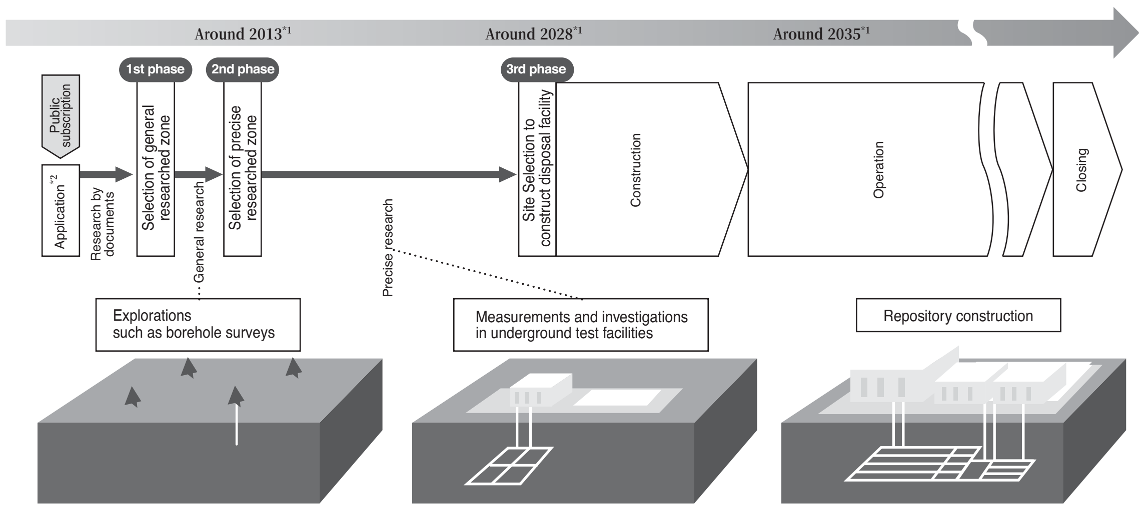
(7) High-Level Radioactive Waste Storage Conditions

High-level radioactive waste (vitrified material) that is returned from France and the U.K. is all stored and managed in Vitrified Waste Storage Center of Japan Nuclear Fuel Ltd. located in Rokkasho-mura, Aomori Prefecture.

	Quantity	TEPCO use	Reprocessing Plant	Arrival Date (in Japan)
1st return	28 canisters	7 canisters	France	April 1995
2nd return	40 canisters	10 canisters	France	March 1997
3rd return	60 canisters	20 canisters	France	March 1998
4th return	40 canisters	0 canisters	France	April 1999
5th return	104 canisters	28 canisters	France	February 2000
6th return	192 canisters	60 canisters	France	February 2001
7th return	152 canisters	28 canisters	France	January 2002
8th return	144 canisters	28 canisters	France	July 2003
9th return	132 canisters	18 canisters	France	March 2004
10th return	124 canisters	0 canisters	France	April 2005
11th return	164 canisters	42 canisters	France	March 2006
12th return	130 canisters	20 canisters	France	March 2007
13th return	28 canisters	7 canisters	U.K.	March 2010
Total	1,338 canisters	268 canisters		

Note: High-level radioactive waste is vitrified and put in stainless canisters that measure approx. 0.4 m in diameter, approx. 1.30 m in height, and weigh approx. 0.5 tons.

<Reference> Schedule of Geological Disposal Project



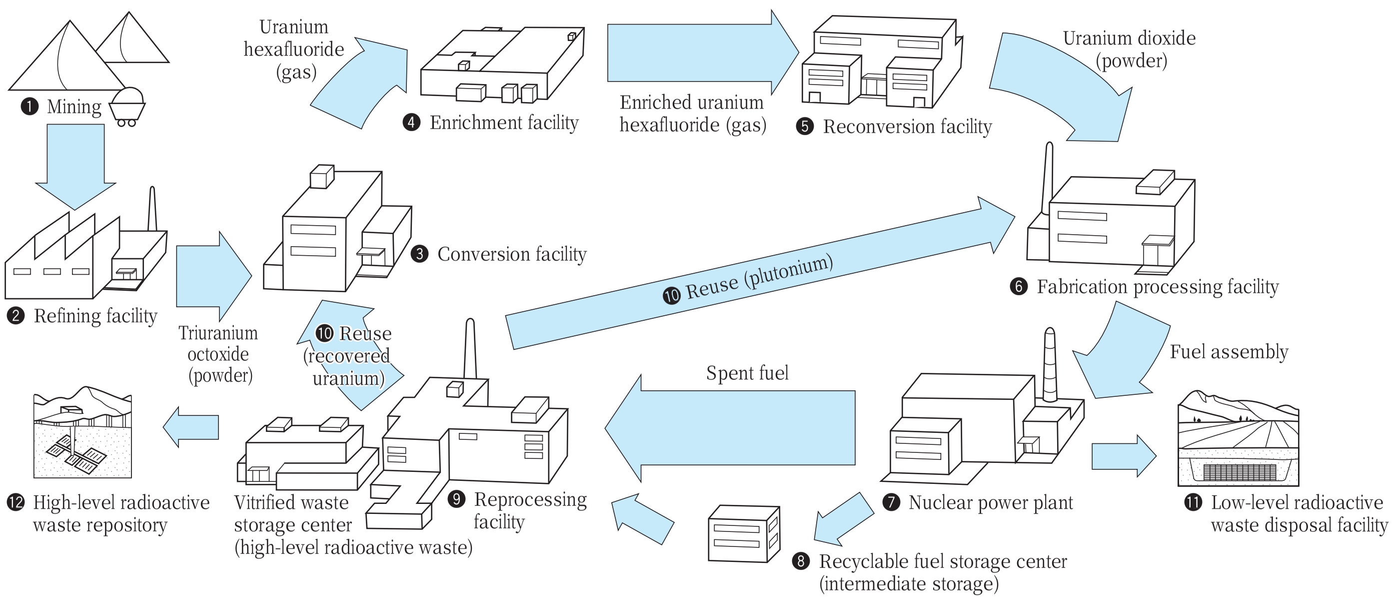
*1 Based on "Final disposal plan (March 2008)"

*2 The government can nominate the site for literature survey, taking account of opinions of local communities. In this case, mayor will express whether they will accept the proposals or not.

Sources: Nuclear Waste Management Organization of Japan (NUMO), "Geological Disposal of Radioactive Waste in Japan"

<Reference> Nuclear Fuel Cycle Concept

* Natural uranium used as fuel for the nuclear power plants is fabricated through a series of processes into a fuel assembly that is then used in nuclear power plants. Spent fuel contains reusable uranium and newly produced plutonium. Reprocessing spent fuel recovers this valuable, reusable material, which can be recycled. This process from mining uranium ore to recycling of spent fuel is called the "nuclear fuel cycle."



❶ Mining:	Digging uranium ore from a mine.
❷ Refining facility:	Extracting uranium from ore and turning it into triuranium octoxide (yellow powder called "yellow cake").
❸ Conversion facility:	Converting triuranium octoxide into gaseous uranium hexafluoride by removing impurities and adding fluoride.
❹ Enrichment facility:	Increasing the percentage of "combustible" uranium 235 content, which is no more than 0.7 percent in uranium hexafluoride, to 3-5 percent.
❺ Reconversion facility:	Converting enriched uranium hexafluoride into powdery uranium dioxide.
❻ Fabrication processing facility:	Baking powdery uranium into fuel pellets, putting them in zirconium alloy fuel rod, and adding dozens of such fuel rods into the fuel assembly.
❼ Nuclear power plant:	Bring the fuel assembly into nuclear fission in nuclear reactor (combustion) to generate electricity. Nuclear fuel continues burning for four to five years.
❽ Recyclable fuel storage center:	Spent fuel from nuclear power plant is stored as recyclable fuel until reprocessed.
❾ Reprocessing facility:	Extracting uranium and newly produced plutonium from used nuclear fuel through chemical treatment processes.
❿ Reuse:	Uranium and plutonium recovered through reprocessing are transported to conversion and fabrication processing facilities to be reused as fuel.
⓫ Low-level radioactive waste disposal facility:	Low-level radioactive waste produced in facility operation and dismantling is buried underground with most appropriate methods according to the waste's nuclear concentration content.
⓬ High-level radioactive waste repository:	High-level radioactive waste, which is vitrified, is stored for 30 to 50 years for cooling, and buried underground below 300 meters from the surface, for good.