Attachment

Exposure Dose Distribution

1. Effective Dose from External Exposure

Table 1 shows the distribution of external exposure dose of workers who were involved in radiation work at the Fukushima Daiichi Nuclear Power Station for the past three month.

Table 1. External Exposure Dose

Dose Ranges (mSv)	April 2018			May 2018			June 2018		
	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total
Above 100	0	0	0	0	0	0	0	0	0
75-100	0	0	0	0	0	0	0	0	0
50-75	0	0	0	0	0	0	0	0	0
20-50	0	0	0	0	0	0	0	0	0
10-20	0	0	0	0	0	0	0	0	0
5-10	0	26	26	0	18	18	0	3	3
1-5	13	509	522	15	481	496	29	460	489
1 or less	1001	5840	6841	927	5820	6747	911	5812	6723
Total	1014	6375	7389	942	6319	7261	940	6275	7215
Maximum (mSv)	2.40	8.40	8.40	1.90	9.40	9.40	2.68	6.82	6.82
Average (mSv)	0.11	0.33	0.30	0.12	0.30	0.28	0.15	0.27	0.25

・The values of the exposure dose and the number of the workers in the table above are subject to change, because there are times when APD data are replaced with monthly dose data measured by integral dosimeters. Or dose data of workers who wore only an integral dosimeter (ex., workers who entered only the Main Anti-earthquake Building) need to be updated in the table after the publication of the data.

2. Sum of External and Internal Exposure Dose (Effective Dose)

Table 2 shows the distribution of cumulative exposure dose of workers who are involved in radiation work at Fukushima Daiichi for five years, starting on April 1, 2016. Table 3 shows the distribution of cumulative exposure dose in the fiscal year of 2018. Two different periods of time are shown in the Table 2: from April 1, 2016 to May 31, 2018 and from April 1, 2016 to June 30, 2018, and Table 3: from April 1, 2018 to May 31, 2018 and from April 1, 2018 to June 30, 2018 for comparison.

Table 2. Cumulative Exposure Dose for Five Years

Dose Ranges (mSv)	April 2016 - May 2018			April 2016 - June 2018			Difference		
	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total
Above 100	0	0	0	0	0	0	0	0	0
75-100	0	0	0	0	0	0	0	0	0
50-75	0	35	35	0	38	38	0	3	3
20-50	9	1012	1021	10	1044	1054	1	32	33
10-20	101	1769	1870	106	1790	1896	5	21	26
5-10	146	1957	2103	147	1973	2120	1	16	17
1-5	496	4456	4952	506	4446	4952	10	-10	0
1 or less	1185	8096	9281	1176	8145	9321	-9	49	40
Total	1937	17325	19262	1945	17436	19381	8	111	119
Maximum (mSv)	24.96	71.80	71.80	25.98	73.98	73.98	-	-	-
Average (mSv)	2.12	4.82	4.55	2.18	4.89	4.62	-	-	-

・The values of the exposure dose and the number of the workers in the table above are subject to change, because there are times when APD data are replaced with monthly dose data measured by integral dosimeters. Or dose data of workers who wore only an integral dosimeter (ex., workers who entered only the Main Anti-earthquake Building) need to be updated in the table after the publication of the data.

・No significant internal exposure has been reported since October 2011.

Table 3. Cumulative Exposure Dose in the Fiscal Year of 2018

Dose Ranges (mSv)	April 2018 - May 2018			April 2018 - June 2018			Difference		
	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total
Above 100	0	0	0	0	0	0	0	0	0
75-100	0	0	0	0	0	0	0	0	0
50-75	0	0	0	0	0	0	0	0	0
20-50	0	0	0	0	0	0	0	0	0
10-20	0	16	16	0	32	32	0	16	16
5-10	0	88	88	2	177	179	2	89	91
1-5	53	891	944	107	1197	1304	54	306	360
1 or less	1034	6052	7086	1042	6068	7110	8	16	24
Total	1087	7047	8134	1151	7474	8625	64	427	491
Maximum (mSv)	3.50	14.50	14.50	6.18	16.64	16.64	-	-	-
Average (mSv)	0.20	0.57	0.52	0.31	0.76	0.70	-	-	-

・The values of the exposure dose and the number of the workers in the table above are subject to change, because there are times when APD data are replaced with monthly dose data measured by integral dosimeters. Or dose data of workers who wore only an integral dosimeter (ex., workers who entered only the Main Anti-earthquake Building) need to be updated in the table after the publication of the data.

3. Sum of External and Internal Exposure Dose of Workers Exposed to Especially High Radiation (Effective Dose)

Table 4 shows the distribution of cumulative exposure dose of workers exposed to especially high radiation.*1

Table 4. Cumulative Exposure Dose (workers exposed to especially high radiation)

Dose Ranges (mSv)	March 2011 - September 2015
Above 100	1
75-100	191
50-75	233
20-50	267
10-20	186
5-10	129
1-5	145
1 or less	51
Total	1203
Maximum (mSv)	102.69
Average (mSv)	36.49

(Since October 2015, TEPCO Holdings has opted not to report to the Labour Standards Inspection Office about workers exposed to especially high radiation.)

*1. Workers exposed to especially high radiation means workers who are involved in operations in which they could be exposed to the emergency exposure dose limit (100mSv), which is stipulated in "Ordinance on Prevention of Ionizing Radiation Hazards, Chapter 7." In more detail, they are workers engaged in the work to maintain the function of the cooling facility to cool down the reactor facility or the spent fuel tank in the reactor facility, the steam turbine and its related facilities or the surrounding area where the radiation doses exceed 0.1mSv/h. Or they are workers who would engage in keeping running the function to control or prevent the release of a large number of radioactive materials should it be likely to occur due to malfunction or damage of the reactor facility.

So far workers who have worked as “workers exposed to especially high radiation” are all TEPCO employees.

*2. The number of “workers exposed to especially high radiation” each month is the number of the workers who reported working as such workers in a given month and were engaged in that work. The figures in the cumulative data during the period from March 2011 to September

2015 in Table 4 above include the numbers of workers who have been reported to work as “workers exposed to especially high radiation” at least once.

*3. The values of the exposure dose and the number of the workers in the table above are subject to change, because there are times when APD data are replaced with monthly dose data measured by integral dosimeters. Or the dose data of workers who wore only an integral dosimeter (ex., workers who entered only the Main Anti-earthquake Building) need to be updated in the table after the publication of the data.

*4. The figure shown in the dose range, “Above 100mSv,” in the cumulative data during the period from March 2011 to September 2015 is the figure when the March 2011 data of the internal exposure dose were reevaluated in July 2013.

4. Equivalent Dose

Table 5 and Table 6 show equivalent dose to the skin and the lens of the eyes of the workers, respectively, who were involved in radiation work at the Fukushima Daiichi Nuclear Power Station for the past three months.

Table 5. Equivalent Dose to the Skin

Dose Ranges (mSv)	April 2018			May 2018			June 2018		
	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total
Above 500	0	0	0	0	0	0	0	0	0
300-500	0	0	0	0	0	0	0	0	0
250-300	0	0	0	0	0	0	0	0	0
200-250	0	0	0	0	0	0	0	0	0
150-200	0	0	0	0	0	0	0	0	0
100-150	0	0	0	0	0	0	0	0	0
75-100	0	0	0	0	0	0	0	0	0
50-75	0	0	0	0	0	0	0	0	0
20-50	0	3	3	0	0	0	0	0	0
10-20	0	21	21	0	12	12	0	7	7
5-10	0	67	67	0	65	65	0	26	26
1-5	14	699	713	16	641	657	29	577	606
1 or less	1000	5585	6585	926	5601	6527	911	5665	6576
Total	1014	6375	7389	942	6319	7261	940	6275	7215
Maximum (mSv)	2.70	23.70	23.70	1.90	16.00	16.00	2.68	16.80	16.80
Average (mSv)	0.12	0.52	0.46	0.12	0.46	0.42	0.15	0.36	0.33

・The values of the exposure dose and the number of the workers in the table above are subject to change, because there are times when APD data are replaced with monthly dose data measured by integral dosimeters. Or the dose data of workers who wore only an integral dosimeter (ex., workers who entered only the Main Anti-earthquake Building) need to be updated in the table after the publication of the data.

・Equivalent dose is a measure of the radiation dose to organs and tissues, and the equivalent dose limit to the skin is 500mSv/year (the emergency exposure dose limit is 1Sv).

・Equivalent dose to the skin is measured at a depth of 70 micrometers from the skin surface. When the equivalent dose is measured with a dosimeter other than the one put on around the chest and the abdomen, for example, a finger dosimeter, the maximum measurement value is counted as the equivalent dose.

Table 6. Equivalent Dose to the Lens of the Eyes

Dose Ranges (mSv)	April 2018			May 2018			June 2018		
	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total
Above 150	0	0	0	0	0	0	0	0	0
100-150	0	0	0	0	0	0	0	0	0
75-100	0	0	0	0	0	0	0	0	0
50-75	0	0	0	0	0	0	0	0	0
20-50	0	0	0	0	0	0	0	0	0
10-20	0	1	1	0	3	3	0	7	7
5-10	0	38	38	0	16	16	0	26	26
1-5	13	591	604	15	545	560	29	577	606
1 or less	1001	5745	6746	927	5755	6682	911	5665	6576
Total	1014	6375	7389	942	6319	7261	940	6275	7215
Maximum (mSv)	2.40	11.80	11.80	1.90	12.50	12.50	2.68	16.80	16.80
Average (mSv)	0.11	0.39	0.35	0.12	0.34	0.31	0.15	0.36	0.33

・The values of the exposure dose and the number of the workers in the table above are subject to change, because there are times when APD data are replaced with monthly dose data measured by integral dosimeters. Or the dose data of workers who wore only an integral dosimeter (ex., workers who entered only the Main Anti-earthquake Building) need to be updated in the table after the publication of the data.

・Equivalent dose is a measure of the radiation dose to organs and tissues, and the equivalent dose limit to the lens of the eye is 150mSv/year (the emergency exposure dose limit is 300mSv).

・The equivalent dose to the lens of the eyes is measured at a depth of 70 micrometers from the skin surface using a dosimeter put on around the chest or the abdomen, and thus the shielding effect of face masks is not taken into consideration.

5. Cumulative Equivalent Dose

Table 7 and Table 8 show the distribution of cumulative equivalent dose to the skins and the lens of the eyes of the workers, respectively, who were involved in radiation work at the Fukushima Daiichi Nuclear Power Station during two different periods of time, from April 1, 2018 to May 31, 2018 and from April 1, 2018 to June 30, 2018 for comparison.

Table 7. Equivalent Dose to the Skin

Dose Ranges (mSv)	April 2018 - May 2018			April 2018 - June 2018			Difference		
	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total
Above 500	0	0	0	0	0	0	0	0	0
300-500	0	0	0	0	0	0	0	0	0
250-300	0	0	0	0	0	0	0	0	0
200-250	0	0	0	0	0	0	0	0	0
150-200	0	0	0	0	0	0	0	0	0
100-150	0	0	0	0	0	0	0	0	0
75-100	0	0	0	0	0	0	0	0	0
50-75	0	0	0	0	0	0	0	0	0
20-50	0	6	6	0	17	17	0	11	11
10-20	0	75	75	0	114	114	0	39	39
5-10	0	182	182	4	257	261	4	75	79
1-5	58	1135	1193	115	1460	1575	57	325	382
1 or less	1029	5649	6678	1032	5626	6658	3	-23	-20
Total	1087	7047	8134	1151	7474	8625	64	427	491
Maximum (mSv)	3.60	37.00	37.00	6.18	37.23	37.23	-	-	-
Average (mSv)	0.21	0.88	0.79	0.32	1.13	1.02	-	-	-

・The values of the exposure dose and the number of the workers in the table above are subject to change, because there are times when APD data are replaced with monthly dose data measured by integral dosimeters. Or the dose data of workers who wore only an integral dosimeter (ex., workers who entered only the Main Anti-earthquake Building) need to be updated in the table after the publication of the data.

Table 8. Equivalent Dose to the Lens of the Eyes

Dose Ranges (mSv)	April 2018 - May 2018			April 2018 - June 2018			Difference		
	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total	TEPCO Employees	Contractors	Total
Above 150	0	0	0	0	0	0	0	0	0
100-150	0	0	0	0	0	0	0	0	0
75-100	0	0	0	0	0	0	0	0	0
50-75	0	0	0	0	0	0	0	0	0
20-50	0	0	0	0	2	2	0	2	2
10-20	0	18	18	0	48	48	0	30	30
5-10	0	123	123	4	245	249	4	122	126
1-5	55	1027	1082	109	1396	1505	54	369	423
1 or less	1032	5879	6911	1038	5783	6821	6	-96	-90
Total	1087	7047	8134	1151	7474	8625	64	427	491
Maximum (mSv)	3.51	20.00	20.00	6.18	21.02	21.02	-	-	-
Average (mSv)	0.21	0.65	0.59	0.32	0.92	0.84	-	-	-

・The values of the exposure dose and the number of the workers in the table above are subject to change, because there are times when APD data are replaced with monthly dose data measured by integral dosimeters. Or the dose data of workers who wore only an integral dosimeter (ex., workers who entered only the Main Anti-earthquake Building) need to be updated in the table after the publication of the data.