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)	February 2018			March 2018			April 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	56	56	0	69	69	0	22	22
1-5	50	791	841	46	768	814	12	501	513
1 or less	941	6353	7294	935	6394	7329	931	5838	6769
Total	991	7200	8191	981	7231	8212	943	6361	7304
Maximum (mSv)	3.83	9.80	9.80	2.96	8.83	8.83	2.39	8.34	8.34
Average (mSv)	0.21	0.43	0.41	0.17	0.45	0.42	0.11	0.30	0.28

・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 2017. Two different periods of time are shown in the Table 2: from April 1, 2016 to March 31, 2018 and from April 1, 2016 to April 30, 2018, and Table 3: from April 1, 2018 to April 30, 2018 for comparison.

Table 2. Cumulative Exposure Dose for Five Years

Dose Ranges (mSv)	April 2016 - March 2018			April 2016 - April 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	23	23	0	30	30	0	7	7
20-50	8	928	936	8	966	974	0	38	38
10-20	95	1747	1842	98	1756	1854	3	9	12
5-10	142	1924	2066	144	1949	2093	2	25	27
1-5	491	4446	4937	503	4446	4949	12	0	12
1 or less	1180	7944	9124	1174	8038	9212	-6	94	88
Total	1916	17012	18928	1927	17185	19112	11	173	184
Maximum (mSv)	24.05	68.50	68.50	24.50	70.62	70.62	-	-	-
Average (mSv)	2.03	4.68	4.41	2.07	4.74	4.47	-	-	-

・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		
	TEPCO Employees	Contractors	Total
Above 100	0	0	0
75-100	0	0	0
50-75	0	0	0
20-50	0	0	0
10-20	0	0	0
5-10	0	22	22
1-5	12	501	513
1 or less	931	5838	6769
Total	943	6361	7304
Maximum (mSv)	2.39	8.34	8.34
Average (mSv)	0.11	0.30	0.28

・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)	February 2018			March 2018			April 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	1	1	0	3	3	0	0	0
10-20	0	24	24	0	18	18	0	8	8
5-10	2	142	144	2	185	187	0	66	66
1-5	70	968	1038	55	971	1026	12	635	647
1 or less	919	6065	6984	924	6054	6978	931	5652	6583
Total	991	7200	8191	981	7231	8212	943	6361	7304
Maximum (mSv)	9.10	22.00	22.00	5.90	36.00	36.00	2.39	17.53	17.53
Average (mSv)	0.26	0.63	0.59	0.19	0.68	0.62	0.12	0.42	0.38

・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)	February 2018			March 2018			April 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	9	9	0	8	8
5-10	0	93	93	0	125	125	0	66	66
1-5	56	952	1008	48	941	989	12	635	647
1 or less	935	6154	7089	933	6156	7089	931	5652	6583
Total	991	7200	8191	981	7231	8212	943	6361	7304
Maximum (mSv)	4.00	10.60	10.60	2.96	11.90	11.90	2.39	17.53	17.53
Average (mSv)	0.22	0.53	0.49	0.17	0.58	0.53	0.12	0.42	0.38

・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 April 30, 2018 for comparison.

Table 7. Equivalent Dose to the Skin

Dose Ranges (mSv)	April 2018		
	TEPCO Employees	Contractors	Total
Above 500	0	0	0
300-500	0	0	0
250-300	0	0	0
200-250	0	0	0
150-200	0	0	0
100-150	0	0	0
75-100	0	0	0
50-75	0	0	0
20-50	0	0	0
10-20	0	8	8
5-10	0	66	66
1-5	12	635	647
1 or less	931	5652	6583
Total	943	6361	7304
Maximum (mSv)	2.39	17.53	17.53
Average (mSv)	0.12	0.42	0.38

・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		
	TEPCO Employees	Contractors	Total
Above 150	0	0	0
100-150	0	0	0
75-100	0	0	0
50-75	0	0	0
20-50	0	0	0
10-20	0	8	8
5-10	0	66	66
1-5	12	635	647
1 or less	931	5652	6583
Total	943	6361	7304
Maximum (mSv)	2.39	17.53	17.53
Average (mSv)	0.12	0.42	0.38

・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.