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)	July 2016			August 2016			September 2016		
	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total	TEPCO's 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	3	3	0	0	0	0	0	0
5-10	0	79	79	0	19	19	0	22	22
1-5	12	792	804	41	532	573	18	654	672
1 or less	1138	7849	8987	1125	7951	9076	1014	7886	8900
Total	1150	8723	9873	1166	8502	9668	1032	8562	9594
Maximum (mSv)	1.92	10.70	10.70	4.39	7.10	7.10	3.41	7.28	7.28
Average (mSv)	0.11	0.41	0.38	0.17	0.28	0.27	0.14	0.31	0.29

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

Table 2. Cumulative Exposure Dose for Five Years

Dose Ranges (mSv)	April 2016 - August 2016			April 2016 - September 2016			Difference		
	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total	TEPCO's 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	25	25	0	30	30	0	5	5
10-20	0	208	208	0	282	282	0	74	74
5-10	12	572	584	16	665	681	4	93	97
1-5	233	2836	3069	256	3340	3596	23	504	527
1 or less	1248	7689	8937	1269	7496	8765	21	-193	-172
Total	1493	11330	12823	1541	11813	13354	48	483	531
Maximum (mSv)	9.19	35.81	35.81	9.51	36.15	36.15	-	-	-
Average (mSv)	0.57	1.41	1.31	0.65	1.58	1.47	-	-	-

・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 2016

Dose Ranges (mSv)	April 2016 - August 2016			April 2016 - September 2016			Difference		
	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total	TEPCO's 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	25	25	0	30	30	0	5	5
10-20	0	208	208	0	282	282	0	74	74
5-10	12	572	584	16	665	681	4	93	97
1-5	233	2836	3069	256	3340	3596	23	504	527
1 or less	1248	7689	8937	1269	7496	8765	21	-193	-172
Total	1493	11330	12823	1541	11813	13354	48	483	531
Maximum (mSv)	9.19	35.81	35.81	9.51	36.15	36.15	-	-	-
Average (mSv)	0.57	1.41	1.31	0.65	1.58	1.47	-	-	-

・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.

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)	July 2016			August 2016			September 2016		
	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total	TEPCO's 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	2	2	0	2	2	0	0	0
10-20	0	48	48	0	4	4	0	0	0
5-10	0	175	175	0	51	51	0	24	24
1-5	14	1002	1016	50	753	803	19	805	824
1 or less	1136	7496	8632	1116	7692	8808	1013	7733	8746
Total	1150	8723	9873	1166	8502	9668	1032	8562	9594
Maximum (mSv)	4.40	33.70	33.70	4.39	21.10	21.10	3.41	7.28	7.28
Average (mSv)	0.13	0.64	0.58	0.18	0.40	0.37	0.14	0.35	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)	July 2016			August 2016			September 2016		
	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total	TEPCO's 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	23	23	0	0	0	0	0	0
5-10	0	115	115	0	37	37	0	24	24
1-5	12	932	944	44	649	693	19	805	824
1 or less	1138	7653	8791	1122	7816	8938	1013	7733	8746
Total	1150	8723	9873	1166	8502	9668	1032	8562	9594
Maximum (mSv)	1.92	13.20	13.20	4.39	8.70	8.70	3.41	7.28	7.28
Average (mSv)	0.12	0.51	0.47	0.17	0.33	0.31	0.14	0.35	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, 2016 to August 31, 2016 and from April 1, 2016 to September 30, 2016 for comparison.

Table 7. Equivalent Dose to the Skin

Dose Ranges (mSv)	April 2016 - August 2016			April 2016 - September 2016			Difference		
	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total	TEPCO's 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	5	5	0	5	5	0	0	0
75-100	0	3	3	0	3	3	0	0	0
50-75	0	2	2	0	2	2	0	0	0
20-50	0	169	169	0	199	199	0	30	30
10-20	1	423	424	2	489	491	1	66	67
5-10	22	778	800	25	875	900	3	97	100
1-5	244	2743	2987	265	3098	3363	21	355	376
1 or less	1226	7207	8433	1249	7142	8391	23	-65	-42
Total	1493	11330	12823	1541	11813	13354	48	483	531
Maximum (mSv)	15.30	123.70	123.70	16.20	124.04	124.04	-	-	-
Average (mSv)	0.63	2.23	2.04	0.71	2.39	2.19	-	-	-

・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 2016 - August 2016			April 2016 - September 2016			Difference		
	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total	TEPCO's 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	2	2	0	2	2	0	0	0
20-50	0	89	89	0	104	104	0	15	15
10-20	0	306	306	0	385	385	0	79	79
5-10	12	681	693	18	782	800	6	101	107
1-5	237	2791	3028	257	3226	3483	20	435	455
1 or less	1244	7461	8705	1266	7314	8580	22	-147	-125
Total	1493	11330	12823	1541	11813	13354	48	483	531
Maximum (mSv)	9.19	50.50	50.50	9.51	53.43	53.43	-	-	-
Average (mSv)	0.58	1.76	1.62	0.66	1.94	1.80	-	-	-

・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.