

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 in the past three months.

Table 1. External Exposure Dose

Dose Ranges (mSv)	June 2016			July 2016			August 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	6	6	0	3	3	0	0	0
5-10	0	56	56	0	79	79	0	13	13
1-5	26	833	859	12	792	804	38	478	516
1 or less	1166	7928	9094	1138	7849	8987	968	7826	8794
Total	1192	8823	10015	1150	8723	9873	1006	8317	9323
Maximum (mSv)	2.00	13.81	13.81	1.92	10.70	10.70	4.39	6.35	6.35
Average (mSv)	0.16	0.41	0.38	0.11	0.41	0.38	0.17	0.24	0.23

• 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 in the five years, starting on April 1, 2016. Table 3 shows the distribution of cumulative exposure dose in the fiscal year of 2016. The tables show the data in two different periods of time, from April 1, 2016 to July 31, 2016 and from April 1, 2016 to August 31, 2016 for comparison.

Table 2. Cumulative Exposure Dose in the Five Years

Dose Ranges (mSv)	April 2016 - July 2016			April 2016 - August 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	14	14	0	23	23	0	9	9
10-20	0	156	156	0	205	205	0	49	49
5-10	4	465	469	12	565	577	8	100	108
1-5	182	2477	2659	222	2822	3044	40	345	385
1 or less	1254	7742	8996	1238	7700	8938	-16	-42	-58
Total	1440	10854	12294	1472	11315	12787	32	461	493
Maximum (mSv)	6.22	33.36	33.36	9.19	35.71	35.71	-	-	-
Average (mSv)	0.46	1.25	1.16	0.56	1.38	1.29	-	-	-

• 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.

• 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 - July 2016			April 2016 - August 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	14	14	0	23	23	0	9	9
10-20	0	156	156	0	205	205	0	49	49
5-10	4	465	469	12	565	577	8	100	108
1-5	182	2477	2659	222	2822	3044	40	345	385
1 or less	1254	7742	8996	1238	7700	8938	-16	-42	-58
Total	1440	10854	12294	1472	11315	12787	32	461	493
Maximum (mSv)	6.22	33.36	33.36	9.19	35.71	35.71	-	-	-
Average (mSv)	0.46	1.25	1.16	0.56	1.38	1.29	-	-	-

* 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.

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

(From 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 in the past three months.

Table 5. Equivalent Dose to the Skin

Dose Ranges (mSv)	June 2016			July 2016			August 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	5	5	0	2	2	0	0	0
10-20	0	23	23	0	48	48	0	0	0
5-10	0	166	166	0	175	175	0	33	33
1-5	37	1158	1195	14	1002	1016	40	597	637
1 or less	1155	7471	8626	1136	7496	8632	966	7687	8653
Total	1192	8823	10015	1150	8723	9873	1006	8317	9323
Maximum (mSv)	4.50	40.70	40.70	4.40	33.70	33.70	4.39	8.60	8.60
Average (mSv)	0.18	0.64	0.58	0.13	0.64	0.58	0.17	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 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)	June 2016			July 2016			August 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	15	15	0	23	23	0	0	0
5-10	0	115	115	0	115	115	0	33	33
1-5	28	996	1024	12	932	944	40	597	637
1 or less	1164	7697	8861	1138	7653	8791	966	7687	8653
Total	1192	8823	10015	1150	8723	9873	1006	8317	9323
Maximum (mSv)	2.00	13.81	13.81	1.92	13.20	13.20	4.39	8.60	8.60
Average (mSv)	0.16	0.51	0.47	0.12	0.51	0.47	0.17	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 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 July 31, 2016 and from April 1, 2016 to August 31, 2016 for comparison.

Table 7. Equivalent Dose to the Skin

Dose Ranges (mSv)	April 2016 - July 2016			April 2016 - August 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	4	4	0	5	5	0	1	1
75-100	0	3	3	0	2	2	0	-1	-1
50-75	0	1	1	0	3	3	0	2	2
20-50	0	129	129	0	159	159	0	30	30
10-20	1	366	367	1	417	418	0	51	51
5-10	10	687	697	22	756	778	12	69	81
1-5	188	2507	2695	229	2744	2973	41	237	278
1 or less	1241	7157	8398	1220	7229	8449	-21	72	51
Total	1440	10854	12294	1472	11315	12787	32	461	493
Maximum (mSv)	14.10	108.30	108.30	15.29	110.78	110.78	-	-	-
Average (mSv)	0.51	2.01	1.84	0.61	2.15	1.97	-	-	-

- 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 - July 2016			April 2016 - August 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	0	0	0	2	2	0	2	2
20-50	0	70	70	0	88	88	0	18	18
10-20	0	250	250	0	307	307	0	57	57
5-10	4	578	582	12	666	678	8	88	96
1-5	184	2491	2675	227	2783	3010	43	292	335
1 or less	1252	7465	8717	1233	7469	8702	-19	4	-15
Total	1440	10854	12294	1472	11315	12787	32	461	493
Maximum (mSv)	6.22	44.80	44.80	9.19	50.36	50.36	-	-	-
Average (mSv)	0.46	1.58	1.45	0.57	1.73	1.60	-	-	-

- 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.

End