

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)	December 2016			January 2017			February 2017		
	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	4	4	0	5	5	0	2	2
5-10	2	46	48	0	69	69	0	115	115
1-5	16	856	872	24	785	809	48	1114	1162
1 or less	1144	7665	8809	1105	7729	8834	989	7508	8497
Total	1162	8571	9733	1129	8588	9717	1037	8739	9776
Maximum (mSv)	6.24	12.60	12.60	2.40	11.00	11.00	3.02	12.54	12.54
Average (mSv)	0.16	0.41	0.38	0.15	0.42	0.38	0.17	0.50	0.46

• 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 2016. Two different periods of time are shown in the Table 2 and Table 3: from April 1, 2016 to January 31, 2017 and from April 1, 2016 to February 28, 2017 for comparison.

Table 2. Cumulative Exposure Dose for Five Years

Dose Ranges (mSv)	April 2016 - January 2017			April 2016 - February 2017			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	114	114	0	152	152	0	38	38
10-20	11	770	781	14	934	948	3	164	167
5-10	62	1179	1241	73	1290	1363	11	111	122
1-5	376	4152	4528	397	4305	4702	21	153	174
1 or less	1194	7183	8377	1183	7145	8328	-11	-38	-49
Total	1643	13398	15041	1667	13826	15493	24	428	452
Maximum (mSv)	11.91	38.83	38.83	12.78	38.83	38.83	-	-	-
Average (mSv)	1.05	2.52	2.36	1.14	2.76	2.58	-	-	-

• 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 - January 2017			April 2016 - February 2017			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	114	114	0	152	152	0	38	38
10-20	11	770	781	14	934	948	3	164	167
5-10	62	1179	1241	73	1290	1363	11	111	122
1-5	376	4152	4528	397	4305	4702	21	153	174
1 or less	1194	7183	8377	1183	7145	8328	-11	-38	-49
Total	1643	13398	15041	1667	13826	15493	24	428	452
Maximum (mSv)	11.91	38.83	38.83	12.78	38.83	38.83	-	-	-
Average (mSv)	1.05	2.52	2.36	1.14	2.76	2.58	-	-	-

• 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)	December 2016			January 2017			February 2017		
	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	4	4	0	15	15	0	0	0
10-20	0	34	34	0	55	55	0	5	5
5-10	2	106	108	0	142	142	0	161	161
1-5	22	1074	1096	32	981	1013	49	1289	1338
1 or less	1138	7353	8491	1097	7395	8492	988	7284	8272
Total	1162	8571	9733	1129	8588	9717	1037	8739	9776
Maximum (mSv)	9.30	47.40	47.40	2.40	42.20	42.20	3.02	18.37	18.37
Average (mSv)	0.18	0.59	0.54	0.16	0.66	0.60	0.18	0.59	0.55

• 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)	December 2016			January 2017			February 2017		
	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	7	7	0	8	8	0	5	5
5-10	2	68	70	0	103	103	0	161	161
1-5	16	976	992	26	912	938	49	1289	1338
1 or less	1144	7520	8664	1103	7565	8668	988	7284	8272
Total	1162	8571	9733	1129	8588	9717	1037	8739	9776
Maximum (mSv)	9.30	19.40	19.40	2.40	12.10	12.10	3.02	18.37	18.37
Average (mSv)	0.17	0.47	0.43	0.15	0.49	0.45	0.18	0.59	0.55

• 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 January 31, 2016 and from April 1, 2016 to February 28, 2017 for comparison.

Table 7. Equivalent Dose to the Skin

Dose Ranges (mSv)	April 2016 - January 2017			April 2016 - February 2017			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	6	6	0	6	6	0	0	0
75-100	0	4	4	0	4	4	0	0	0
50-75	0	33	33	0	41	41	0	8	8
20-50	1	497	498	1	573	574	0	76	76
10-20	16	1047	1063	20	1135	1155	4	88	92
5-10	65	1183	1248	78	1316	1394	13	133	146
1-5	384	3737	4121	400	3879	4279	16	142	158
1 or less	1177	6891	8068	1168	6872	8040	-9	-19	-28
Total	1643	13398	15041	1667	13826	15493	24	428	452
Maximum (mSv)	21.40	125.00	125.00	21.44	125.00	125.00	-	-	-
Average (mSv)	1.15	3.82	3.53	1.24	4.08	3.77	-	-	-

• 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 - January 2017			April 2016 - February 2017			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	13	13	0	13	13	0	0	0
20-50	0	236	236	0	297	297	0	61	61
10-20	11	948	959	15	1110	1125	4	162	166
5-10	63	1258	1321	74	1368	1442	11	110	121
1-5	383	3898	4281	403	4031	4434	20	133	153
1 or less	1186	7045	8231	1175	7007	8182	-11	-38	-49
Total	1643	13398	15041	1667	13826	15493	24	428	452
Maximum (mSv)	14.95	59.50	59.50	15.52	67.63	67.63	-	-	-
Average (mSv)	1.07	3.04	2.82	1.17	3.31	3.08	-	-	-

• 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.