

## 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 month.

**Table 1. External Exposure Dose**

Dose Ranges (mSv)	April 2016			May 2016			June 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	0	0	0	0	0	0	5	5
5-10	0	42	42	0	19	19	0	42	42
1-5	16	870	886	9	651	660	23	806	829
1 or less	1097	7853	8950	1128	7748	8876	1026	7764	8790
Total	1113	8765	9878	1137	8418	9555	1049	8617	9666
Maximum (mSv)	1.90	9.78	9.78	2.50	9.70	9.70	1.90	13.47	13.47
Average (mSv)	0.16	0.41	0.38	0.14	0.32	0.30	0.15	0.38	0.35

• 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 in the five years, starting from April 1, 2016. Table 3 shows the distribution of cumulative exposure dose in the fiscal year of 2016.

**Table 2. Cumulative Exposure Dose in the Five Years**

Dose Ranges (mSv)	April 2016 - May 2016			April 2016 - June 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	0	0	0	6	6	0	6	6
10-20	0	22	22	0	57	57	0	35	35
5-10	0	126	126	0	314	314	0	188	188
1-5	61	1430	1491	139	2013	2152	78	583	661
1 or less	1139	7915	9054	1148	7870	9018	9	-45	-36
Total	1200	9493	10693	1287	10260	11547	87	767	854
Maximum (mSv)	3.20	19.28	19.28	4.71	32.12	32.12	-	-	-
Average (mSv)	0.28	0.67	0.62	0.38	0.94	0.87	-	-	-

• 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 - May 2016			April 2016 - June 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	0	0	0	6	6	0	6	6
10-20	0	22	22	0	57	57	0	35	35
5-10	0	126	126	0	314	314	0	188	188
1-5	61	1430	1491	139	2013	2152	78	583	661
1 or less	1139	7915	9054	1148	7870	9018	9	-45	-36
Total	1200	9493	10693	1287	10260	11547	87	767	854
Maximum (mSv)	3.20	19.28	19.28	4.71	32.12	32.12	-	-	-
Average (mSv)	0.28	0.67	0.62	0.38	0.94	0.87	-	-	-

• 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.\*<sup>1</sup>

**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 March 2016 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 March 2016 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)	April 2016			May 2016			June 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	13	13	0	7	7	0	0	0
10-20	0	47	47	0	9	9	0	9	9
5-10	0	186	186	4	79	83	0	87	87
1-5	24	1167	1191	10	996	1006	24	991	1015
1 or less	1089	7352	8441	1123	7327	8450	1025	7530	8555
Total	1113	8765	9878	1137	8418	9555	1049	8617	9666
Maximum (mSv)	2.70	32.70	32.70	5.70	33.00	33.00	1.90	13.47	13.47
Average (mSv)	0.17	0.73	0.67	0.16	0.51	0.47	0.15	0.48	0.44

• 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 2016			May 2016			June 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	1	1	0	0	0	0	0	0
10-20	0	19	19	0	1	1	0	9	9
5-10	0	121	121	0	42	42	0	87	87
1-5	19	1017	1036	9	819	828	24	991	1015
1 or less	1094	7607	8701	1128	7556	8684	1025	7530	8555
Total	1113	8765	9878	1137	8418	9555	1049	8617	9666
Maximum (mSv)	2.00	20.50	20.50	2.50	11.90	11.90	1.90	13.47	13.47
Average (mSv)	0.17	0.55	0.51	0.14	0.40	0.37	0.15	0.48	0.44

• 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 May 31, 2016 and from April 1, 2016 to June 30, 2016 for comparison.

**Table 7. Equivalent Dose to the Skin**

Dose Ranges (mSv)	April 2016 - May 2016			April 2016 - June 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	0	0	0	0	0	0	0	0
75-100	0	0	0	0	2	2	0	2	2
50-75	0	6	6	0	5	5	0	-1	-1
20-50	0	22	22	0	41	41	0	19	19
10-20	0	129	129	0	200	200	0	71	71
5-10	5	327	332	7	537	544	2	210	212
1-5	62	1718	1780	139	2189	2328	77	471	548
1 or less	1133	7291	8424	1141	7286	8427	8	-5	3
Total	1200	9493	10693	1287	10260	11547	87	767	854
Maximum (mSv)	5.90	64.00	64.00	7.10	77.47	77.47	-	-	-
Average (mSv)	0.31	1.13	1.04	0.41	1.44	1.33	-	-	-

• 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.

**Table 8. Equivalent Dose to the Lens of the Eyes**

Dose Ranges (mSv)	April 2016 - May 2016			April 2016 - June 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	0	0	0	0	0
20-50	0	4	4	0	23	23	0	19	19
10-20	0	79	79	0	137	137	0	58	58
5-10	0	233	233	1	440	441	1	207	208
1-5	62	1570	1632	142	2112	2254	80	542	622
1 or less	1138	7607	8745	1144	7548	8692	6	-59	-53
Total	1200	9493	10693	1287	10260	11547	87	767	854
Maximum (mSv)	3.40	28.60	28.60	5.11	36.37	36.37	-	-	-
Average (mSv)	0.28	0.86	0.80	0.39	1.20	1.11	-	-	-

• 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.