

## Exposure Dose Distribution

### 1. External Exposure Dose of Radiation Workers at the Fukushima Daiichi Nuclear Power Station (Effective Dose)

Table 1 shows what levels of external radiation exposure the workers who were involved in radiation work at the Fukushima Daiichi Nuclear Power Station from December 2015 to February 2016 received.

**Table 1**

Dose Ranges (mSv)	December 2015			January 2016			February 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	5	5	0	4	4	0	12	12
5-10	0	73	73	0	60	60	0	69	69
1-5	47	1335	1382	38	1194	1232	45	1411	1456
1 or less	1122	8026	9148	1108	8070	9178	1039	7846	8885
Total	1169	9439	10608	1146	9328	10474	1084	9338	10422
Maximum (mSv)	2.70	13.50	13.50	3.30	16.00	16.00	4.26	12.02	12.02
Average (mSv)	0.21	0.56	0.52	0.20	0.51	0.48	0.21	0.54	0.51

• 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. External and Internal Exposure Doses of Radiation Workers at the Fukushima Daiichi Nuclear Power Station (Effective Dose)

Table 2 shows what levels of both external and internal radiation exposure the workers who were involved in radiation work at the Fukushima Daiichi Nuclear Power Station received during the two different periods of time, from March 11, 2011 to January 31, 2016 and from March 11, 2011 to February 29, 2016, comparing the data figures of the two periods to indicate whether they increased, decreased or were the same. Table 3 shows data on the radiation exposure dose of the workers who were engaged in radiation work at the station during the different periods of time, from April 2015 to January 2016 and from April 2015 to February 2016, and the comparison results of the data figures between those periods are indicated in the table, as well.

**Table 2**

Dose Ranges (mSv)	March 2011 - January 2016			March 2011 - February 2016			Difference		
	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total	TEPCO's Employees	Contractors	Total
Above 250	6	0	6	6	0	6	0	0	0
200-250	1	2	3	1	2	3	0	0	0
150-200	26	2	28	26	2	28	0	0	0
100-150	117	20	137	117	20	137	0	0	0
75-100	316	279	595	317	292	609	1	13	14
50-75	328	1746	2074	329	1770	2099	1	24	25
20-50	633	6420	7053	633	6471	7104	0	51	51
10-20	621	5668	6289	619	5705	6324	-2	37	35
5-10	497	5402	5899	506	5469	5975	9	67	76
1-5	893	9590	10483	899	9591	10490	6	1	7
1 or less	1252	12684	13936	1253	12730	13983	1	46	47
Total	4690	41813	46503	4706	42052	46758	16	239	255
Maximum (mSv)	678.80	238.42	678.80	678.80	238.42	678.80	-	-	-
Average (mSv)	22.44	11.62	12.71	22.41	11.67	12.75	-	-	-

• 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 radiation exposure dose has been reported since October 2011.

**Table 3**

Dose Ranges (mSv)	April 2015 - January 2016			April 2015 - February 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	4	439	443	5	513	518	1	74	75
10-20	35	1614	1649	41	1747	1788	6	133	139
5-10	109	2042	2151	113	2180	2293	4	138	142
1-5	463	5103	5566	501	5134	5635	38	31	69
1 or less	1045	6630	7675	1025	6594	7619	-20	-36	-56
Total	1656	15828	17484	1685	16168	17853	29	340	369
Maximum (mSv)	21.33	40.42	40.42	23.00	42.28	42.28	-	-	-
Average (mSv)	1.61	4.00	3.77	1.71	4.23	3.99	-	-	-

• 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. External and Internal Exposure Doses of “Workers Exposed to Especially High Radiation” (Effective Dose)

Table 4 shows what levels of both external and internal radiation exposure “workers exposed to especially high radiation”<sup>\*1</sup> received.<sup>\*2</sup>

**Table 4**

Dose Ranges (mSv)	December 2015	January 2016	February 2016	March 2011 - February 2016
Above 100	0	0	0	1
75-100	0	0	0	191
50-75	0	0	0	233
20-50	0	0	0	267
10-20	0	0	0	186
5-10	0	0	0	129
1-5	0	0	0	145
1 or less	0	0	0	51
Total	0	0	0	1203
Maximum (mSv)	-	-	-	102.69
Average (mSv)	-	-	-	36.50

(Since October 2015, TEPCO has opted not to report to the Labour Standards Inspection Office on “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 February 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 February 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 doses to the skin and the lens of the eye of the workers, respectively, who were involved in radiation work at the Fukushima Daiichi Nuclear Power Station from December 2015 to February 2016.

**Table 5 (Equivalent dose to the skin)**

Dose Ranges (mSv)	December 2015			January 2016			February 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	3	3	0	7	7	0	1	1
10-20	0	18	18	0	41	41	0	34	34
5-10	0	194	194	0	202	202	0	137	137
1-5	56	1635	1691	45	1537	1582	49	1647	1696
1 or less	1113	7589	8702	1101	7541	8642	1035	7519	8554
Total	1169	9439	10608	1146	9328	10474	1084	9338	10422
Maximum (mSv)	5.00	24.10	24.10	4.20	27.50	27.50	4.26	20.04	20.04
Average (mSv)	0.24	0.76	0.70	0.22	0.78	0.72	0.21	0.68	0.64

• 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 eye)**

Dose Ranges (mSv)	December 2015			January 2016			February 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	1	1
10-20	0	6	6	0	8	8	0	34	34
5-10	0	97	97	0	92	92	0	137	137
1-5	50	1530	1580	39	1458	1497	49	1647	1696
1 or less	1119	7806	8925	1107	7770	8877	1035	7519	8554
Total	1169	9439	10608	1146	9328	10474	1084	9338	10422
Maximum (mSv)	3.10	13.50	13.50	3.30	16.00	16.00	4.26	20.04	20.04
Average (mSv)	0.22	0.63	0.58	0.20	0.60	0.56	0.21	0.68	0.64

• 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 eye 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 face masks have does not affect the measurement results.

## 5. Cumulative Data of Equivalent Dose

Table 7 and Table 8 show the cumulative data (during the two different periods of time, from April 2015 to January 2016 and from April 2015 to February 2016) of equivalent doses to the skin and the lens of the eyes of the workers, respectively, who were engaged in radiation work at the Fukushima Daiichi Nuclear Power Station.

**Table 7 (Equivalent dose to the skin)**

Dose Ranges (mSv)	April 2015 - January 2016			April 2015 - February 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	2	2	0	5	5	0	3	3
50-75	0	59	59	0	74	74	0	15	15
20-50	12	1107	1119	14	1216	1230	2	109	111
10-20	38	1795	1833	44	1879	1923	6	84	90
5-10	122	1939	2061	123	2017	2140	1	78	79
1-5	460	4513	4973	500	4572	5072	40	59	99
1 or less	1024	6408	7432	1004	6400	7404	-20	-8	-28
Total	1656	15828	17484	1685	16168	17853	29	340	369
Maximum (mSv)	34.10	145.74	145.74	34.23	145.78	145.78	-	-	-
Average (mSv)	1.84	5.59	5.24	1.95	5.87	5.50	-	-	-

• 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 eye)**

Dose Ranges (mSv)	April 2015 - January 2016			April 2015 - February 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	1	1	0	1	1	0	0	0
50-75	0	24	24	0	34	34	0	10	10
20-50	4	683	687	5	766	771	1	83	84
10-20	36	1765	1801	45	1913	1958	9	148	157
5-10	112	2021	2133	112	2122	2234	0	101	101
1-5	464	4802	5266	503	4830	5333	39	28	67
1 or less	1040	6532	7572	1020	6502	7522	-20	-30	-50
Total	1656	15828	17484	1685	16168	17853	29	340	369
Maximum (mSv)	23.93	77.60	77.60	24.16	83.86	83.86	-	-	-
Average (mSv)	1.66	4.66	4.38	1.77	4.96	4.66	-	-	-

• 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.