# Exposure Dose Distribution of the Workers at Fukushima Daiichi Nuclear Power Plant

(Updated on 31 March 2016)

### 1 Number of Workers (Later than 11 March 2011)

		Persons	Increase	Emergency Workers(*)	Updated on	
Total Workers		46,758	255	19,675	A COOF 1 2016	
	TEPCO	4,706	16	3,636	As of 29 February 2016 (Obtained on 31 March)	
	Contractors	42,052	239	16,039	(Obtained off 51 March)	

<sup>(\*)</sup> As of November 2014; Including workers to whom emergency dose limits apply

## 2 Radiation Exposure Dose Distributions

#### (1) The distribution of external exposure dose of the workers during the last 3 months

(Numbers of workers who entered each area every month)

tumbers of workers who entered each area every month,										
Effective dose (E)	December 2015			January 2016			February 2016			
mSv	TEPCO	Contractors	Total	TEPCO	Contractors	Total	TEPCO	Contractors	Total	
100 <e< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></e<>	0	0	0	0	0	0	0	0	0	
75 <e≤100< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></e≤100<>	0	0	0	0	0	0	0	0	0	
50 <e≤75< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></e≤75<>	0	0	0	0	0	0	0	0	0	
20 <e≤50< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></e≤50<>	0	0	0	0	0	0	0	0	0	
10 <e≤20< td=""><td>0</td><td>5</td><td>5</td><td>0</td><td>4</td><td>4</td><td>0</td><td>12</td><td>12</td></e≤20<>	0	5	5	0	4	4	0	12	12	
5 <e≤10< td=""><td>0</td><td>73</td><td>73</td><td>0</td><td>60</td><td>60</td><td>0</td><td>69</td><td>69</td></e≤10<>	0	73	73	0	60	60	0	69	69	
1 <e≤5< td=""><td>47</td><td>1,335</td><td>1,382</td><td>38</td><td>1,194</td><td>1,232</td><td>45</td><td>1,411</td><td>1,456</td></e≤5<>	47	1,335	1,382	38	1,194	1,232	45	1,411	1,456	
E≤ 1	1,122	8,026	9,148	1,108	8,070	9,178	1,039	7,846	8,885	
Total	1,169	9,439	10,608	1,146	9,328	10,474	1,084	9,338	10,422	
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	

<sup>(\*)</sup> Exposure doses and the number of workers are subject to change due to the replacement of accumulated doses measured using PAD with monthly doses measured using an integrating dosimeter and the reflection of values for workers wearing only an integrating dosimeter (e.g., workers working only within a seismically isolated building).

#### (2) Combined Cumulative Effective Dose from March 2011 (Internal and External)

2) Combined Cumulative Effective Dose from March 2011 (Internal and External)										
Effective dose (E)	March 2011- January 2016			March 20	)11- Februar	Difference				
mSv	TEPCO	Contractors	Total	TEPCO	Contractors	Total	TEPCO	Contractors	Total	
250 <e< td=""><td>6</td><td>0</td><td>6</td><td>6</td><td>0</td><td>6</td><td>0</td><td>0</td><td>0</td></e<>	6	0	6	6	0	6	0	0	0	
200 <e≤250< td=""><td>1</td><td>2</td><td>3</td><td>1</td><td>2</td><td>3</td><td>0</td><td>0</td><td>0</td></e≤250<>	1	2	3	1	2	3	0	0	0	
150 <e≤200< td=""><td>26</td><td>2</td><td>28</td><td>26</td><td>2</td><td>28</td><td>0</td><td>0</td><td>0</td></e≤200<>	26	2	28	26	2	28	0	0	0	
100 <e≤150< td=""><td>117</td><td>20</td><td>137</td><td>117</td><td>20</td><td>137</td><td>0</td><td>0</td><td>0</td></e≤150<>	117	20	137	117	20	137	0	0	0	
75 <e≤100< td=""><td>316</td><td>279</td><td>595</td><td>317</td><td>292</td><td>609</td><td>1</td><td>13</td><td>14</td></e≤100<>	316	279	595	317	292	609	1	13	14	
50 <e≤75< td=""><td>328</td><td>1,746</td><td>2,074</td><td>329</td><td>1,770</td><td>2,099</td><td>1</td><td>24</td><td>25</td></e≤75<>	328	1,746	2,074	329	1,770	2,099	1	24	25	
20 <e≤50< td=""><td>633</td><td>6,420</td><td>7,053</td><td>633</td><td>6,471</td><td>7,104</td><td>0</td><td>51</td><td>51</td></e≤50<>	633	6,420	7,053	633	6,471	7,104	0	51	51	
10 <e≤20< td=""><td>621</td><td>5,668</td><td>6,289</td><td>619</td><td>5,705</td><td>6,324</td><td>-2</td><td>37</td><td>35</td></e≤20<>	621	5,668	6,289	619	5,705	6,324	-2	37	35	
5 <e≤10< td=""><td>497</td><td>5,402</td><td>5,899</td><td>506</td><td>5,469</td><td>5,975</td><td>9</td><td>67</td><td>76</td></e≤10<>	497	5,402	5,899	506	5,469	5,975	9	67	76	
1 <e≤5< td=""><td>893</td><td>9,590</td><td>10,483</td><td>899</td><td>9,591</td><td>10,490</td><td>6</td><td>1</td><td>7</td></e≤5<>	893	9,590	10,483	899	9,591	10,490	6	1	7	
E≤1	1,252	12,684	13,936	1,253	12,730	13,983	1	46	47	
Total	4,690	41,813	46,503	4,706	42,052	46,758	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	-	-	-	

- (\*) Number of new comers in February 2016 was 255.
- (\*) There has been no significant internal exposure reported since October 2011.
- (\*) Exposure doses and the number of workers are subject to change due to the replacement of accumulated doses measured using PAD with monthly doses measured using an integrating dosimeter and the reflection of values for workers wearing only an integrating dosimeter (e.g., workers working only within a seismically isolated building).

#### (3) Combined Cumulative Effective Dose from April 2015 (Internal and External)

Effective dose (E)	April 2015 - January 2016			April 2015 - February 2016			Difference		
mSv	TEPCO	Contractors	Total	TEPCO	Contractors	Total	TEPCO	Contractors	Total
100 <e< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></e<>	0	0	0	0	0	0	0	0	0
75 <e≤100< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></e≤100<>	0	0	0	0	0	0	0	0	0
50 <e≤75< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></e≤75<>	0	0	0	0	0	0	0	0	0
20 <e≤0< td=""><td>4</td><td>439</td><td>443</td><td>5</td><td>513</td><td>518</td><td>1</td><td>74</td><td>75</td></e≤0<>	4	439	443	5	513	518	1	74	75
10 <e≤20< td=""><td>35</td><td>1,614</td><td>1,649</td><td>41</td><td>1,747</td><td>1,788</td><td>6</td><td>133</td><td>139</td></e≤20<>	35	1,614	1,649	41	1,747	1,788	6	133	139
5 <e≤10< td=""><td>109</td><td>2,042</td><td>2,151</td><td>113</td><td>2,180</td><td>2,293</td><td>4</td><td>138</td><td>142</td></e≤10<>	109	2,042	2,151	113	2,180	2,293	4	138	142
1 <e≤5< td=""><td>463</td><td>5,103</td><td>5,566</td><td>501</td><td>5,134</td><td>5,635</td><td>38</td><td>31</td><td>69</td></e≤5<>	463	5,103	5,566	501	5,134	5,635	38	31	69
E≤1	1,045	6,630	7,675	1,025	6,594	7,619	-20	-36	-56
Total	1,656	15,828	17,484	1,685	16,168	17,853	29	340	369
Maximum(mSv)	21.33	40.42	40.42	23.00	42.28	42.28	1	-	-
Average(mSv)	1.61	4.00	3.77	1.71	4.23	3.99	-	-	-

<sup>(\*)</sup> Exposure doses and the number of workers are subject to change due to the replacement of accumulated doses measured using PAD with monthly doses measured using an integrating dosimeter and the reflection of values for workers wearing only an integrating dosimeter (e.g., workers working only within a seismically isolated building).

## (4) Combined Cumulative Effective Dose of Workers to Whom Emergency Dose Limits Apply\*

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Effective dose (E) mSv	Dec. 2015	Jan. 2016	Feb. 2016	March 2011- February 2016
100 <e< td=""><td>0</td><td>0</td><td>0</td><td>1</td></e<>	0	0	0	1
75 <e≤100< td=""><td>0</td><td>0</td><td>0</td><td>191</td></e≤100<>	0	0	0	191
50 <e≤75< td=""><td>0</td><td>0</td><td>0</td><td>233</td></e≤75<>	0	0	0	233
20 <e≤50< td=""><td>0</td><td>0</td><td>0</td><td>267</td></e≤50<>	0	0	0	267
10 <e≤20< td=""><td>0</td><td>0</td><td>0</td><td>186</td></e≤20<>	0	0	0	186
5 <e≤10< td=""><td>0</td><td>0</td><td>0</td><td>129</td></e≤10<>	0	0	0	129
1 <e≤5< td=""><td>0</td><td>0</td><td>0</td><td>145</td></e≤5<>	0	0	0	145
E≤1	0	0	0	51
Total	0	0	0	1,203
Maximum (mSv)	-	-	-	102.69
Average (mSv)	-	-	-	36.50

- (\*) Workers under the application of the emergency dose limit (100mSv) shown in Article 7 of the Ordinance on Prevention of Ionizing Radiation Hazards.
  - Specifically, they are workers engaged in work to maintain the function of cooling reactors or spent fuel tanks or to maintain the function to control or prevent the release of a huge amount of radioactive material due to trouble or a breakdown at a reactor facility, in an area where radiation dose rates exceed 0.1 mSv/h, around any reactor facilities, steam turbines and related facilities, and the vicinity thereof in the NPP. Until now, all designated workers have been TEPCO employees.
- (\*) The monthly number of workers to whom emergency dose limits apply is the number of workers who have filed applications as such. However, the cumulative number for the period between March 2011 and February 2016 includes those whose designation was removed.
- (\*) Exposure doses and the number of workers are subject to change due to the replacement of accumulated doses measured using PAD with monthly doses measured using an integrating dosimeter and the reflection of values for workers wearing only an integrating dosimeter (e.g., workers working only within a seismically isolated building).
- (\*) The results of re-evaluating committed doses in March 2011 reveal that maximum cumulative effective doses for the period between March 2011 and February 2016 exceeded 100.