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

(Updated on 30 November 2015)

1 Number of Workers (Later than 11 March 2011)

		Persons	Increase	Emergency Workers(*)	Updated on
Total Workers		45,578	336	19,675	As of 31 October 2015
	TEPCO	4,649	11	3,636	(Obtained on 30
	Contractors	40,929	325	16,039	November)

^(*) 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)

Effective dose (E)	August 2015			September 2015			October 2015		
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>1</td><td>1</td><td>0</td><td>16</td><td>16</td><td>0</td><td>9</td><td>9</td></e<=20<>	0	1	1	0	16	16	0	9	9
5 <e<=10< td=""><td>0</td><td>36</td><td>36</td><td>1</td><td>140</td><td>141</td><td>0</td><td>100</td><td>100</td></e<=10<>	0	36	36	1	140	141	0	100	100
1 <e<=5< td=""><td>53</td><td>1,040</td><td>1,093</td><td>51</td><td>1,590</td><td>1,641</td><td>44</td><td>1,654</td><td>1,698</td></e<=5<>	53	1,040	1,093	51	1,590	1,641	44	1,654	1,698
E<= 1	1,083	8,369	9,452	1,144	8,034	9,178	1,037	7,850	8,887
Total	1,136	9,446	10,582	1,196	9,780	10,976	1,081	9,613	10,694
Maximum (mSv)	3.38	10.30	10.30	5.60	15.30	15.30	3.07	14.42	14.42
Average (mSv)	0.21	0.43	0.41	0.24	0.67	0.63	0.19	0.63	0.58

^(*) 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)

Effective dose (E)	011- September 2015		March 2011- October 2015			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>305</td><td>238</td><td>543</td><td>306</td><td>245</td><td>551</td><td>1</td><td>7</td><td>8</td></e<=100<>	305	238	543	306	245	551	1	7	8
50 <e<=75< td=""><td>333</td><td>1,604</td><td>1,937</td><td>333</td><td>1,655</td><td>1,988</td><td>0</td><td>51</td><td>51</td></e<=75<>	333	1,604	1,937	333	1,655	1,988	0	51	51
20 <e<=50< td=""><td>631</td><td>6,197</td><td>6,828</td><td>632</td><td>6,245</td><td>6,877</td><td>1</td><td>48</td><td>49</td></e<=50<>	631	6,197	6,828	632	6,245	6,877	1	48	49
10 <e<=20< td=""><td>612</td><td>5,551</td><td>6,163</td><td>617</td><td>5,594</td><td>6,211</td><td>5</td><td>43</td><td>48</td></e<=20<>	612	5,551	6,163	617	5,594	6,211	5	43	48
5 <e<=10< td=""><td>496</td><td>5,265</td><td>5,761</td><td>494</td><td>5,293</td><td>5,787</td><td>-2</td><td>28</td><td>26</td></e<=10<>	496	5,265	5,761	494	5,293	5,787	-2	28	26
1 <e<=5< td=""><td>847</td><td>9,403</td><td>10,250</td><td>857</td><td>9,457</td><td>10,314</td><td>10</td><td>54</td><td>64</td></e<=5<>	847	9,403	10,250	857	9,457	10,314	10	54	64
E<= 1	1,264	12,322	13,586	1,260	12,416	13,676	-4	94	90
Total	4,638	40,604	45,242	4,649	40,929	45,578	11	325	336
Maximum (mSv)	678.80	238.42	678.80	678.80	238.42	678.80	-	=	-
Average (mSv)	22.47	11.40	12.54	22.47	11.46	12.58	-	-	-

^(*) Number of new comers in October 2015 was 336.

^(*) 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 - September 2015			April 2	2015 - Octol	per 2015	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<=50< td=""><td>0</td><td>159</td><td>159</td><td>0</td><td>250</td><td>250</td><td>0</td><td>91</td><td>91</td></e<=50<>	0	159	159	0	250	250	0	91	91
10 <e<=20< td=""><td>14</td><td>898</td><td>912</td><td>16</td><td>1,052</td><td>1,068</td><td>2</td><td>154</td><td>156</td></e<=20<>	14	898	912	16	1,052	1,068	2	154	156
5 <e<=10< td=""><td>57</td><td>1,555</td><td>1,612</td><td>73</td><td>1,695</td><td>1,768</td><td>16</td><td>140</td><td>156</td></e<=10<>	57	1,555	1,612	73	1,695	1,768	16	140	156
1 <e<=5< td=""><td>326</td><td>4,645</td><td>4,971</td><td>359</td><td>4,893</td><td>5,252</td><td>33</td><td>248</td><td>281</td></e<=5<>	326	4,645	4,971	359	4,893	5,252	33	248	281
E<= 1	1,167	6,801	7,968	1,138	6,672	7,810	-29	-129	-158
Total	1,564	14,058	15,622	1,586	14,562	16,148	22	504	526
Maximum(mSv)	15.43	37.68	37.68	18.50	37.68	37.68	-	-	-
Average(mSv)	1.07	2.89	2.71	1.19	3.21	3.01	-	-	-

^(*) 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*

Effective dose (E) mSv	Aug. 2015	Sep. 2015	Oct. 2015	March 2011- October 2015
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>1</td><td>0</td><td>129</td></e<=10<>	0	1	0	129
1 <e<=5< td=""><td>47</td><td>43</td><td>0</td><td>145</td></e<=5<>	47	43	0	145
E<= 1	532	523	0	51
Total	579	567	0	1,203
Maximum (mSv)	3.38	5.60	-	102.69
Average (mSv)	0.31	0.35	=	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 October 2015 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 October 2015 exceeded 100.