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

(Updated on 30 September 2014)

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

		Persons	Increase	Emergency workers(*)	Updated on	
Total Workers		37,697	567	19,346	As of 31 August,	
	TEPCO	4,307	16	3,391	2014 (Obtained on 30	
	Contractors	33,390	551	15,955	September)	

(\*) As of the end of December 2011; Targeted workers are now being identified by closely examining the database.

# 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)

(itumbers of workers who entered each area every month)									
Effective dose (E)	fective dose (E) June 2014			July 2014			August 2014		
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>26</td><td>26</td><td>0</td><td>49</td><td>49</td><td>0</td><td>6</td><td>6</td></e<=20<>	0	26	26	0	49	49	0	6	6
5 <e<=10< td=""><td>1</td><td>329</td><td>330</td><td>1</td><td>258</td><td>259</td><td>0</td><td>160</td><td>160</td></e<=10<>	1	329	330	1	258	259	0	160	160
1 <e<=5< td=""><td>66</td><td>1,790</td><td>1,856</td><td>39</td><td>1,728</td><td>1,767</td><td>32</td><td>1,255</td><td>1,287</td></e<=5<>	66	1,790	1,856	39	1,728	1,767	32	1,255	1,287
E<= 1	1,056	6,768	7,824	1,092	7,282	8,374	898	7,457	8,355
Total	1,123	8,913	10,036	1,132	9,317	10,449	930	8,878	9,808
Maximum (mSv)	6.80	16.89	16.89	5.40	18.69	18.69	3.40	14.78	14.78
Average (mSv)	0.32	0.95	0.88	0.27	0.89	0.82	0.21	0.66	0.62

(\*) 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).

#### March 2011-August 2014 Effective dose (E) March 2011-July 2014 Difference TEPCO Contractors Total TEPCO Contractors Total TEPCO Contractors Total mSv250<E 0 0 0 0 6 6 6 6 0 200<E<=250 1 2 3 1 2 3 0 0 0 150<E<=200 2 27 2 25 25 27 0 0 0 100<E<=150 118 20 138 118 20 138 0 0 0 75<E<=100 278 155 433 279 160 439 1 5 6 50<E<=75 321 1,402 322 1,425 1 22 23 1,081 1,103 20<E<=50 2 616 4,840 5,456 618 4,920 5,538 80 82 4,479 49 10<E<=20 568 5,047 4,529 5,096 50 567 -1 5<E<=10 462 4,298 4,760 465 4,413 4,878 3 115 118 1 < E < =5751 8,076 8,827 758 8,130 8,888 7 54 61 E <= 11,145 9,886 11.031 1,148 10,111 11,259 3 225 228 37,130 33,3<u>90</u> Total 4,291 32,839 4,307 37,697 16 551 567 678.80 238.42 678.80 678.80 Maximum (mSv) 238.42 678.80 Average (mSv) 23.16 10.76 12.19 23.12 10.76 12.17

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

(\*) The number of new comers in August 2014 was 567.

(\*) 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).

Effective dose (E)	) April 2014-July 2014			April 2014-August 2014			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>C</td></e<>	0	0	0	0	0	0	0	0	C
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>C</td></e<=100<>	0	0	0	0	0	0	0	0	C
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>99</td><td>99</td><td>0</td><td>162</td><td>162</td><td>0</td><td>63</td><td>63</td></e<=50<>	0	99	99	0	162	162	0	63	63
10 <e<=20< td=""><td>4</td><td>653</td><td>657</td><td>7</td><td>767</td><td>774</td><td>3</td><td>114</td><td>117</td></e<=20<>	4	653	657	7	767	774	3	114	117
5 <e<=10< td=""><td>26</td><td>1,198</td><td>1,224</td><td>46</td><td>1,456</td><td>1,502</td><td>20</td><td>258</td><td>278</td></e<=10<>	26	1,198	1,224	46	1,456	1,502	20	258	278
1 <e<=5< td=""><td>386</td><td>4,020</td><td>4,406</td><td>420</td><td>4,260</td><td>4,680</td><td>34</td><td>240</td><td>274</td></e<=5<>	386	4,020	4,406	420	4,260	4,680	34	240	274
E<= 1	997	6,001	6,998	978	6,180	7,158	-19	179	160
Total	1,413	11,971	13,384	1,451	12,825	14,276	38	854	892
Maximum (mSv)	15.80	39.82	39.82	17.63	39.82	39.82	-	-	-
Average (mSv)	1.01	2.65	2.48	1.12	2.93	2.75	-	-	-

(\*) 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	Jun. 2014	Jul. 2014	Aug. 2014	March 2011-August 2014
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>168</td></e<=100<>	0	0	0	168
50 <e<=75< td=""><td>0</td><td>0</td><td>0</td><td>216</td></e<=75<>	0	0	0	216
20 <e<=50< td=""><td>0</td><td>0</td><td>0</td><td>253</td></e<=50<>	0	0	0	253
10 <e<=20< td=""><td>0</td><td>0</td><td>0</td><td>152</td></e<=20<>	0	0	0	152
5 <e<=10< td=""><td>1</td><td>1</td><td>0</td><td>118</td></e<=10<>	1	1	0	118
1 <e<=5< td=""><td>62</td><td>38</td><td>30</td><td>136</td></e<=5<>	62	38	30	136
E<= 1	558	585	526	50
Total	621	624	556	1,094
Maximum (mSv)	6.80	5.40	3.40	102.69
Average (mSv)	0.45	0.37	0.26	36.55

(\*) 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 August 2014 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
- (\*) The results of re-evaluating committed doses in March 2011 reveal that maximum cumulative effective doses for the period between March 2011 and August 2014 exceeded 100.