Amount of Water Injection to the RPV of Fukushima Daiichi Nuclear Power Station Unit 1 ~ 3 <Estimation> (Commence of sea water injection*)~as of 8:00 am, May 15th 2011)

*)On March 12th, 80kL of fresh water injection to Unit 1 was conducted before sea water injection. Some amount of fresh water injection to Unit 3 was conducted before the water source was switched to sea water on March 13th. (note) Since above amount of water injection includes number, which was calculated by temporary flow meter and excludes temporary change of water inflow actual amount of water injection to the RPV may slightly differ.

actual al	induit of water injection to the NFV may signify differ.	_	11.3.0	112.0			
date	Unit 1		Unit 2	Unit 3			
uuto	amount of water(per day) cumulative(sea water) cumulative(fresh water)	er) amount of water(per day)	cumulative (sea water) cumulative (fresh water)	amount of water (per day) cumulative (sea water) umulative (fresh water			
2011/3/12	approx. 31 kL (sea water) approx. 31 kL	7					
2011/3/13	approx. 259 kL (sea water) approx. 290 kL	/		approx. 389 kL (sea water) approx. 389 kL			
		200 11 ()	000 11				
2011/3/14	approx. 56 kL (sea water) approx. 346 kL	approx. 320 kL (sea water)	approx. 320 kL	approx. 505 kL (sea water) approx. 893 kL			
2011/3/15	approx. 259 kL (sea water) approx. 605 kL	approx. 1,872 kL (sea water)	approx. 2,192 kL	approx. 774 kL (sea water) approx. 1,667 kL /			
2011/3/16	approx. 259 kL (sea water) approx. 864 kL	approx. 1,872 kL (sea water)	approx. 4,064 kL	approx. 864 kL (sea water) approx. 2,531 kL			
2011/3/17	approx. 294 kL (sea water) approx. 1,158 kL	approx. 1,157 kL (sea water)	approx. 5,221 kL	approx. 490 kL (sea water) approx. 3,021 kL			
2011/3/18	approx. 475 kL (sea water) approx. 1,633 kL	approx. 802 kL (sea water)	approx. 6,023 kL	approx. 360 kL (sea water) approx. 3,381 kL			
2011/3/19	approx. 449 kL (sea water) approx. 2,082 kL /	approx. 711 kL (sea water)	approx. 6,734 kL /	approx. 494 kL (sea water) approx. 3,875 kL			
2011/3/20	approx. 48 kL (sea water) approx. 2,130 kL	approx. 480 kL (sea water)	approx. 7,214 kL /	approx. 393 kL (sea water) approx. 4,268 kL			
2011/3/21	approx. 38 kL (sea water) approx. 2,167 kL	approx. 384 kL (sea water)	approx. 7,598 kL	approx. 24 kL (sea water) approx. 4,292 kL			
2011/3/22	approx. 42 kL (sea water) approx. 2,209 kL	approx. 261 kL (sea water)	approx. 7,860 kL /	approx. 24 kL (sea water) approx. 4,316 kL			
2011/3/23	approx. 301 kL (sea water) approx. 2,510 kL /	approx. 279 kL (sea water)	approx. 8,138 kL /	approx. 24 kL (sea water) approx. 4,340 kL			
2011/3/24	approx. 226 kL (sea water) approx. 2,736 kL	approx. 278 kL (sea water)	approx. 8,416 kL	approx. 69 kL (sea water) approx. 4,409 kL			
	approx. 106 kL (sea water) approx. 2,842 kL			approx. 271 kL (sea water) approx. 4,680 kL			
2011/3/25		─ approx. 478 kL (sea water)	approx. 8,894 kL /				
	approx. 60 kL (fresh water) / approx. 60 kL		/	approx. 88 kL (fresh water) / approx. 88 kL			
2011/3/26	approx. 173 kL (fresh water) / approx. 233 kL	approx. 207 kL (sea water)	approx. 9,101 kL /	approx. 336 kL (fresh water) / approx. 424 kL			
2011/3/20	approx. 173 kL (fresh water) / approx. 233 kL	approx. 245 kL (fresh water)	/ approx. 245 kL	approx. 336 kL (fresh water)			
2011/3/27	approx. 169 kL (fresh water) / approx. 402 kL	approx. 382 kL (fresh water)	/ approx. 627 kL	approx. 311 kL (fresh water) / approx. 735 kL			
		122 11 /2 1	/	/			
2011/3/28	approx. 169 kL (fresh water) / approx. 571 kL	approx. 169 kL (fresh water)	/ approx. 797 kL	approx. 295 kL (fresh water) / approx. 1,030 kL			
2011/3/29	approx. 196 kL (fresh water) / approx. 767 kL	approx. 168 kL (fresh water)	/ approx. 965 kL	approx. 241 kL (fresh water) / approx. 1,271 kL			
2011/3/30	approx. 192 kL (fresh water) approx. 958 kL	approx. 192 kL (fresh water)	/ approx. 1,157 kL	approx. 167 kL (fresh water) approx. 1,438 kL			
2011/3/31	approx. 192 kL (fresh water) approx. 1,150 kL	approx. 216 kL (fresh water)	/ approx. 1,373 kL	approx. 167 kL (fresh water) approx. 1,605 kL			
			/				
2011/4/1	approx. 184 kL (fresh water) / approx. 1,334 kL	approx. 216 kL (fresh water)	/ approx. 1,589 kL	approx. 167 kL (fresh water) / approx. 1,772 kL			
2011/4/2	approx. 165 kL (fresh water) / approx. 1,499 kL	approx. 213 kL (fresh water)	/ approx. 1,802 kL	approx. 167 kL (fresh water) approx. 1,939 kL			
2011/4/3	approx. 147 kL (fresh water) approx. 1,646 kL	approx. 192 kL (fresh water)	/ approx. 1,994 kL	approx. 173 kL (fresh water) approx. 2,112 kL			
2011/4/4	approx. 144 kL (fresh water) / approx. 1,790 kL	approx. 192 kL (fresh water)	/ approx. 2,185 kL	approx. 168 kL (fresh water) approx. 2,280 kL			
			/				
2011/4/5	approx. 144 kL (fresh water) / approx. 1,934 kL	approx. 192 kL (fresh water)					
2011/4/6	approx. 144 kL (fresh water) / approx. 2,078 kL	approx. 192 kL (fresh water)	/ approx. 2,568 kL	approx. 168 kL (fresh water) approx. 2,616 kL			
2011/4/7	approx. 144 kL (fresh water) / approx. 2,222 kL	approx. 187 kL (fresh water)	/ approx. 2,755 kL	approx. 168 kL (fresh water) / approx. 2,784 kL			
2011/4/8	approx. 144 kL (fresh water) approx. 2,366 kL	approx. 168 kL (fresh water)	/ approx. 2,923 kL	approx. 168 kL (fresh water) / approx. 2,952 kL			
2011/4/9		122 11 /2 1	/				
2011/4/10	approx. 144 kL (fresh water) / approx. 2,654 kL	approx. 168 kL (fresh water)	/ approx. 3,259 kL	approx. 168 kL (fresh water) / approx. 3,288 kL			
2011/4/11	approx. 139 kL (fresh water) / approx. 2,793 kL	approx. 162 kL (fresh water)	/ approx. 3,421 kL	approx. 162 kL (fresh water) / approx. 3,450 kL			
2011/4/12	approx. 144 kL (fresh water) / approx. 2,937 kL	approx. 168 kL (fresh water)	/ approx. 3,589 kL	approx. 168 kL (fresh water) approx. 3,618 kL			
2011/4/13			1 /				
	approx. 144 kL (fresh water) / approx. 3,081 kL	approx. 168 kL (fresh water)					
2011/4/14	approx. 144 kL (fresh water) / approx. 3,225 kL	approx. 168 kL (fresh water)	/ approx. 3,925 kL	approx. 168 kL (fresh water) / approx. 3,954 kL			
2011/4/15	approx. 144 kL (fresh water) / approx. 3,369 kL	approx. 167 kL (fresh water)	/ approx. 4,092 kL	approx. 168 kL (fresh water) / approx. 4,122 kL			
2011/4/16	approx. 144 kL (fresh water) / approx. 3,513 kL	approx. 168 kL (fresh water)	/ approx. 4,260 kL	approx. 168 kL (fresh water) / approx. 4,290 kL			
			1 /				
2011/4/17	approx. 144 kL (fresh water) / approx. 3,657 kL		approx. 4,428 kL				
2011/4/18	approx. 144 kL (fresh water) / approx. 3,801 kL	approx. 168 kL (fresh water)	/ approx. 4,595 kL	approx. 168 kL (fresh water) / approx. 4,626 kL			
2011/4/19	approx. 144 kL (fresh water) / approx. 3,945 kL	approx. 168 kL (fresh water)	/ approx. 4,763 kL	approx. 168 kL (fresh water) / approx. 4,794 kL			
2011/4/20	approx. 134 kL (fresh water) / approx. 4,079 kL	approx. 168 kL (fresh water)	approx. 4,931 kL	approx. 144 kL (fresh water) / approx. 4,938 kL			
2011/4/21	approx. 139 kL (fresh water) approx. 4,218 kL	approx. 169 kL (fresh water)	approx. 5,100 kL	approx. 154 kL (fresh water) approx. 5,092 kL			
2011/4/22	approx. 144 kL (fresh water) / approx. 4,362 kL	approx. 168 kL (fresh water)	/ approx. 5,268 kL	approx. 161 kL (fresh water) / approx. 5,254 kL			
2011/4/23	approx. 143 kL (fresh water) / approx. 4,505 kL	approx. 166 kL (fresh water)	/ approx. 5,434 kL	approx. 160 kL (fresh water) / approx. 5,413 kL			
2011/4/24	approx. 143 kL (fresh water) / approx. 4,649 kL	approx. 167 kL (fresh water)	/ approx. 5,601 kL	approx. 163 kL (fresh water) / approx. 5,576 kL			
2011/4/25	approx. 143 kL (fresh water) / approx. 4,792 kL	approx. 168 kL (fresh water)	/ approx. 5,769 kL	approx. 164 kL (fresh water) approx. 5,741 kL			
			/				
2011/4/26	approx. 145 kL (fresh water) / approx. 4,937 kL	approx. 167 kL (fresh water)	approx. 5,936 kL				
2011/4/27	approx. 200 kL (fresh water) / approx. 5,136 kL	approx. 167 kL (fresh water)	/ approx. 6,103 kL	approx. 161 kL (fresh water) / approx. 6,063 kL			
2011/4/28	approx. 240 kL (fresh water) / approx. 5,376 kL	approx. 168 kL (fresh water)	/ approx. 6,271 kL	approx. 163 kL (fresh water) / approx. 6,226 kL			
2011/4/29	approx. 185 kL (fresh water) approx. 5,562 kL	approx. 167 kL (fresh water)		approx. 159 kL (fresh water) / approx. 6,386 kL			
2011/4/30	approx. 144 kL (fresh water) approx. 5,706 kL	approx. 166 kL (fresh water)		approx. 156 kL (fresh water) / approx. 6,542 kL			
2011/5/1	approx. 144 kL (fresh water) / approx. 5,850 kL	approx. 166 kL (fresh water)		approx. 157 kL (fresh water) / approx. 6,699 kL			
2011/5/2	approx. 143 kL (fresh water) / approx. 5,993 kL	approx. 168 kL (fresh water)	/ approx. 6,937 kL	approx. 163 kL (fresh water) / approx. 6,861 kL			
2011/5/3	approx. 143 kL (fresh water) approx. 6,136 kL	approx. 168 kL (fresh water)	/ approx. 7,105 kL	approx. 165 kL (fresh water) / approx. 7,027 kL			
2011/5/4	approx. 144 kL (fresh water) approx. 6,280 kL	approx. 167 kL (fresh water)		approx. 195 kL (fresh water) / approx. 7,222 kL			
			1 /				
2011/5/5	approx. 144 kL (fresh water) / approx. 6,424 kL	approx. 168 kL (fresh water)		approx. 216 kL (fresh water) / approx. 7,438 kL			
2011/5/6	approx. 172 kL (fresh water) / approx. 6,596 kL	approx. 168 kL (fresh water)		approx. 216 kL (fresh water) / approx. 7,654 kL			
2011/5/7	approx. 192 kL (fresh water) / approx. 6,788 kL	approx. 168 kL (fresh water)	/ approx. 7,776 kL	approx. 216 kL (fresh water) / approx. 7,870 kL			
2011/5/8	approx. 192 kL (fresh water) / approx. 6,980 kL	approx. 168 kL (fresh water)		approx. 216 kL (fresh water) approx. 8,086 kL			
2011/5/9							
	approx. 192 kL (fresh water) / approx. 7,172 kL	approx. 168 kL (fresh water)					
2011/5/10	approx. 192 kL (fresh water) / approx. 7,364 kL	approx. 167 kL (fresh water)	1 /	approx. 216 kL (fresh water) / approx. 8,518 kL			
2011/5/11	approx. 191 kL (fresh water) / approx. 7,556 kL	approx. 168 kL (fresh water)	/ approx. 8,446 kL	approx. 216 kL (fresh water) / approx. 8,733 kL			
2011/5/12	approx. 190 kL (fresh water) / approx. 7,746 kL	approx. 167 kL (fresh water)	/ approx. 8,613 kL	approx. 235 kL (fresh water) / approx. 8,968 kL			
2011/5/13		approx. 166 kL (fresh water)	approx. 8,779 kL				
			1/				
2011/5/14	approx. 192 kL (fresh water) / approx. 8,128 kL	approx. 168 kL (fresh water)	/ approx. 8,947 kL	approx. 337 kL (fresh water) / approx. 9,592 kL			
2011/5/15	approx. 213 kL (fresh water) / approx. 8,341 kL	approx. 168 kL (fresh water)	/ approx. 9,115 kL	approx. 370 kL (fresh water) approx. 9,963 kL			
	total Approx. 11,183 kL	total	Approx. 18,216 kL	total Approx. 14,643 kL			
	7,0000000000000000000000000000000000000		7 pp 107. 10,210 NE	7, pp. 107. 1 1,0 10 RL			

Reference-1 shows the amount of water injection to the RPV which is calculated by readings of flow indicator of fire pump during the period we recorded the water amount of accident management panel (from March 18 to 25th, 2011, though this period differ depend on the unit).

Water injection into the reactor of Fukushima Daiichi NPS Unit 1~3

Below are the water injection volume calculated from the data of meter reading of flow meter of fire fighter pump for reference during the period when measuring was conducted by accident management panel (AM panel).

XIn the case of fire fighter pump where there is no flow meter, calculation was made by translating pressure gauge readings or estimated from the specification of fire fighting pump.

(Note 1) The calculated amount of flow may differ from the actual amount of water injected into the reactor as it includes the result of temporary flow meter estimate and does not take temporary flow rate change into account.

(Note 2) If data was switched between AM panel and flow meter of fire fighter pump* on the same day, summantion of both data was calculated.

example) When calculating the amount on the date of March 19, (1) if flow amount was calculated from the readings of flow meter of fire fighter pump until 12:00 am, (2) and after that, if the amount was measured by AM panel until 24:00 on the same day, it is calculated as (1)+(2).

 □ Status of instruments (reference)

 □ Calculated from the readings of AM panel

Water injection <rough estimate> into the reactor of Unit 1-3 of Fukushima Daiichi NPS

date	F	ukushima Daiichi NPS Unit 1	Fukushima Daiichi I			
date	volume (per day)	accumulated (sea water)	accumulated (fresh water)	volume (per day)	accumulated	
2011/3/17	approx. 294 kL (sea water)	approx. 1,158 kL		approx. 1,157 kL (sea water)	approx. 5,2	
2011/3/18	approx. 475 kL (sea water)	approx. 1,633 kL] /	approx. 802 kL (sea water)	approx. 6,0	
2011/3/19	approx. 449 kL (sea water)	approx. 2,082 kL	/	approx. 711 kL (sea water)	approx. 6,7	
2011/3/20	approx. 48 kL (sea water)	approx. 2,130 kL		approx. 480 kL (sea water)	approx. 7,2	
2011/3/21	approx. 38 kL (sea water)	approx. 2,167 kL		approx. 384 kL (sea water)	approx. 7,5	
2011/3/22	approx. 42 kL (sea water)	approx. 2,209 kL		approx. 261 kL (sea water)	approx. 7,8	
2011/3/23	approx. 301 kL (sea water)	approx. 2,510 kL		approx. 279 kL (sea water)	approx. 8,1	
2011/3/24	approx. 226 kL (sea water)	approx. 2,736 kL	T / I	approx. 278 kL (sea water)	approx. 8,4	
2011/3/25	approx. 106 kL (sea water)	approx. 2,842 kL	V	approx. 478 kL (sea water)	approx. 8,8	
2011/3/23	approx. 60 kL (fresh water)		approx. 60 kL	approx. 4/8 kL (sea water)	арргох. 0,0	
2011/3/26	approx. 173 kL (fresh water		approx. 233 kL	approx. 207 kL (sea water)	approx. 9,1	
2011/ 3/ 20	approx. 175 KE (fresh water)		approx. 200 KL	approx. 245 kL (fresh water)		
		T				
stal until May 15	total	approx 11.18	3 kl l	total	l lappro	

Fukushima Daiichi NPS Unit 2						Fukushima Daiichi NPS Unit 3					
volume	(per day)	accumi	ulated (sea water)	accumulated (fresh water)	١	volume (per day)	accumul	ated (sea water)	accumulated (fresh water)		
approx. 1,157	kL (sea water)	approx.	5,221 kL		approx.	490 kL (sea water)	approx.	3,021 kL			
approx. 802	kL (sea water)	approx.	6,023 kL	/	approx.	360 kL (sea water)	approx.	3,381 kL] /]		
approx. 711	kL (sea water)	approx.	6,734 kL		approx.	494 kL (sea water)	approx.	3,875 kL			
approx. 480	kL (sea water)	approx.	7,214 kL		approx.	393 kL (sea water)	approx.	4,268 kL			
approx. 384	kL (sea water)	approx.	7,598 kL		approx.	24 kL (sea water)	approx.	4,292 kL			
approx. 261	kL (sea water)	approx.	7,860 kL	/	approx.	24 kL (sea water)	approx.	4,316 kL	unstable readings		
approx. 279	kL (sea water)	approx.	8,138 kL	unstable readings (recovered later)	approx.	24 kL (sea water)	approx.	4,340 kL	flow meter fault		
approx. 278	kL (sea water)	approx.	8,416 kL	← flow meter downscale	approx.	69 kL (sea water)	approx.	4,409 kL			
approx. 478	kL (sea water)	opprov	8.894 kL	(temporary downscale had been obs	^{erved} approx.	271 kL (sea water)	approx.	4,680 kL			
approx. 4/8	KL (Sea Water)	approx.	0,034 KL	,	approx.	88 kL (fresh water)			approx. 88 kL		
approx. 207	kL (sea water)	approx.	9,101 kL	/	approx.	336 kL (fresh water)] _		approx. 424 kL		
approx. 245	kL (fresh water)			approx. 245 kL	арргох.	000 KE (II CSII Water)			approx. 424 KE		
to	tal		annroy 18.2	16 ki		total		annroy 14	643 kl		

Notes to where the large variation was observed (estimate)
(Notwithstanding the notes, adjustment of flow rate and change of pump configulation are conducted time to time depends of plant parameter)

| Fukushima Daiichi NPS Unit 3 | volume (per day) | accumulated (sea water) | accumulated (fresh water) | approx. 490 kL (sea water) | \$\frac{\psi_0}{2}\$ 3,021 kL | approx. 360 kL (sea water) | \$\frac{\psi_0}{2}\$ 3,381 kL | approx. 494 kL (sea water) | \$\frac{\psi_0}{2}\$ 3,875 kL | approx. 1,321 kL (sea water) | \$\frac{\psi_0}{2}\$ 5,196 kL | approx. 1,625 kL (sea water) | \$\frac{\psi_0}{2}\$ 6,821 kL | approx. 1,637 kL (sea water) | \$\frac{\psi_0}{2}\$ 8,458 kL | approx. 1,633 kL (sea water) | \$\frac{\psi_0}{2}\$ 8,458 kL | approx. 1,633 kL (sea water) | \$\frac{\psi_0}{2}\$ 10,091 kL |

pump flowmeter etc*

Calculated AM panerl⇒Readings of fire fighter

88 kL

424 kL

kL

date	Fu		
date	volume (per day)	accumulated (sea water)	accumulated (fresh water)
2011/3/17	approx. 294 kL (sea water)	approx. 1,158 kL	
2011/3/18	approx. 475 kL (sea water)	approx. 1,633 kL] /
2011/3/19	approx. 475 kL (sea water)	approx. 2,109 kL	
2011/3/20	approx. 1,020 kL (sea water)	approx. 3,129 kL	flow rate adjustment
2011/3/21	approx. 1,317 kL (sea water)	approx. 4,446 kL	configuration changed to two pumps
2011/3/22	approx. 1,593 kL (sea water)	approx. 6,039 kL	. /
2011/3/23	approx. 799 kL (sea water)	approx. 6,839 kL	flow rate adjustment
2011/3/24	approx. 226 kL (sea water)	approx. 7,065 kL	(swtch to feed water line) flow adjustment
2011/3/25	approx. 106 kL (sea water)	approx. 7,171 kL	
2011/3/23	approx. 60 kL (fresh water)		approx. 60 kL
2011/3/26	approx. 173 kL (fresh water)	configuration change to one pump	approx. 233 kL
otal until May 15	total	approx. 15,51	2 kL

r)		١	olume (per	r day)	accumu	lated (s	ea water)	accumula	ated (fresh water)
7		approx.	1,157 kL	(sea water)	approx.	5,221	kL		
	Г	approx.	791 kL	(sea water)	approx.	6,012	kL	flow adju	stment
	L	approx.	784 kL	(sea water)	approx.	6,796	kL		/
	L	approx.	792 kL	(sea water)	approx.	7,588	kL		/
s	L	approx.	811 kL	(sea water)	approx.	8,399	kL		
	L	approx.	816 kL	(sea water)	approx.	9,215	kL		/
	L	approx.	806 kL	(sea water)	approx.	10,021	kL	/	/
	L	approx.	785 kL	(sea water)	approx.	10,806	kL		
\dashv		approx.	483 kL	(sea water)	approx.	11,289	kL	flow adju:	stment
	L	approx.	207 kL	(sea water)	approx.	11,497	kL	,	ounone .
		approx.	245 kL	(fresh water)				approx.	245 kL
_]			total	·		approx.	20,6	12 k	L

Fukushima Daiichi NPS Unit 2

approx.	1,625	kL	(sea water)	約	6,821	kL	
approx.	1,637	kL	(sea water)	約	8,458	kL	
approx.	1,633	kL	(sea water)	約	10,091	kL	/
approx.	1,481	kL	(sea water)	約	11,572	kL	flow adjus
approx.	271	kL	(sea water)	約	11,843	kL	one pump
approx.	88	kL	(fresh water)	configura configura	tion changed	to two pump	approx.
approx.	336	kL	(fresh water)				approx.
	•			•	•	•	•
	t	otal			approx.	21,8	805 k