

Revised

<Reference>

## Revision of a part of the plan on Fuel Removal from the spent fuel pool of Unit 4, Fukushima Daiichi NPS

**June 18, 2014**

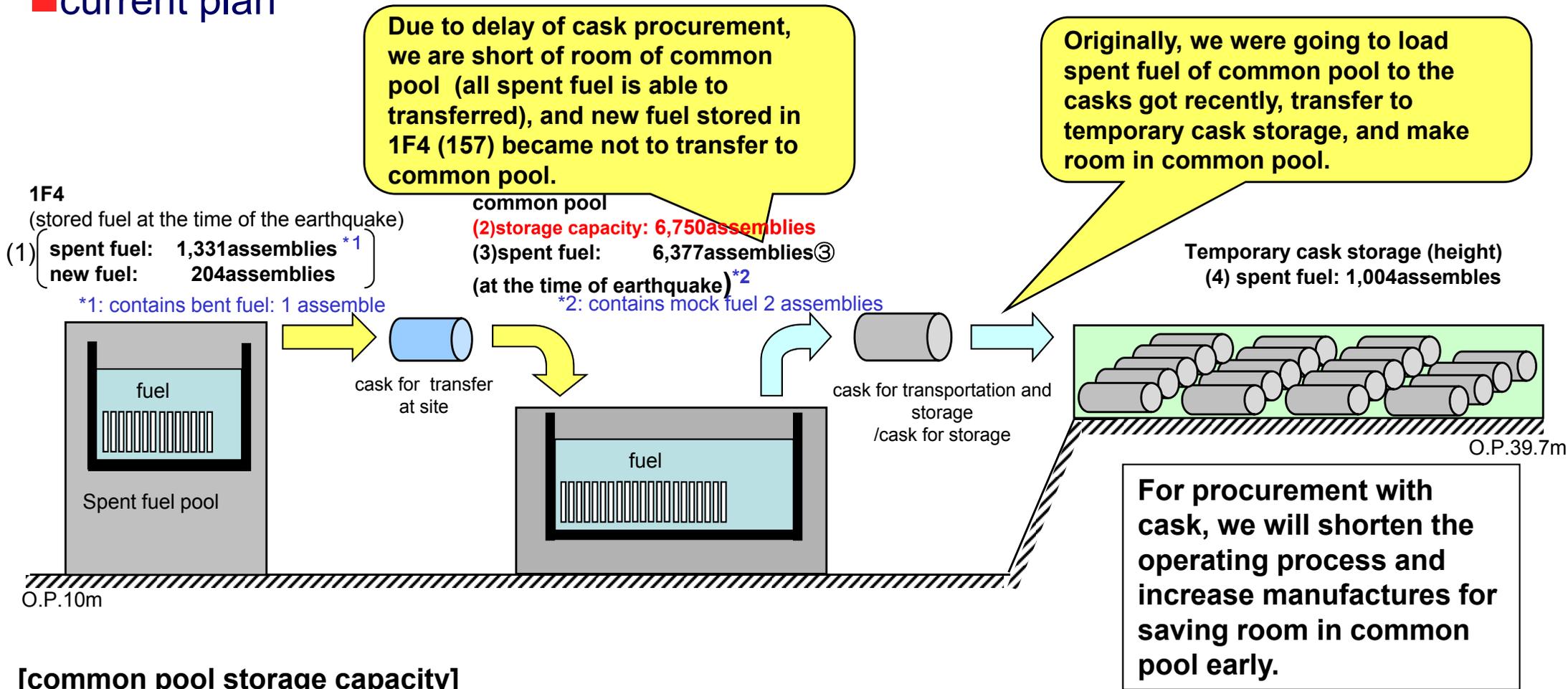
**Tokyo Electric Power Company**

# Summary

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- On November 2013, we started to transfer fuel from spent fuel pool to common pool (as of June 16, 2014, Unirradiated (New) fuel:22; Spent fuel: 1,056; Sum: 1,078 assemblies have transferred).
- To make room to store fuel of Unit 4, we are getting casks to store fuel in temporary cask storage facility, and removing fuel stored in common pool.
- For the present, we removed fuel from common pool (19 casks) and made room for all spent fuel of Unit 4 (1,331 assemblies). But the approving procedure for part of casks is delay, we have some difficulty before making room to store new fuel (157 assemblies) so as to complete all fuel removal in 2014.
- Then, we discussed the measure to get room for storage and are considering that we transfer part of new fuel in Unit 4 to Unit 6 to store temporarily.  
→ Hereafter, we are going to file for approval changing the schedule.

## ■ current plan



### [common pool storage capacity]

$$6,750^{(2)} - (6,377^{(3)} - 1,004^{(4)} + 1,535 [1,331+204]^{(1)}) \rightarrow \text{short for total 157 assemblies}^{*3}$$

(1): Fuel stored in 1F4 at the time of the earthquake: received 1,535 assemblies (spent fuel: 1,331 assemblies; new fuel: 204 assemblies)

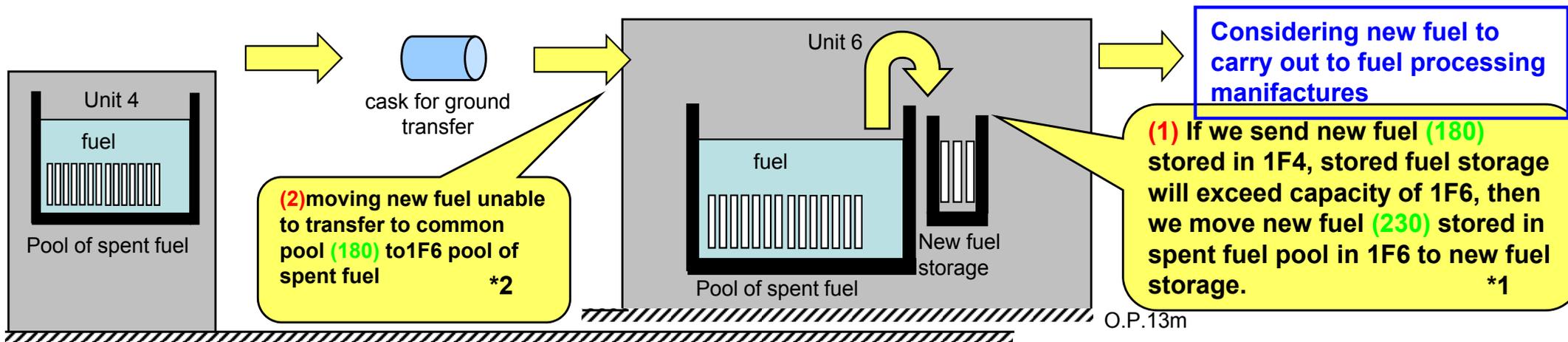
(2): Common pool capacity after replacement of damaged fuel racks: 6,750 assemblies  
(not contain 49 for rack of damaged fuel)

(3): spent fuel stored in common pool at the time of the earthquake: 6,377 assemblies

(4): fuel newly loaded to dry storage cask: 1,004 assemblies (dry cask: 11; cask for transportation/storage: 8)

\*3: Bent fuel is not included because it will be stored in rack of damaged fuel to be set in future.

■ Issue: make room for new fuel 180 assemblies unable to move to common pool



O.P.10m

O.P.13m

**Unit 4**  
Due to shortage of room of common pool, fuel to seek to place to transfer (157)

All new fuel stored in 1F4 (180 assemblies) to transfer to 1F6 \*1

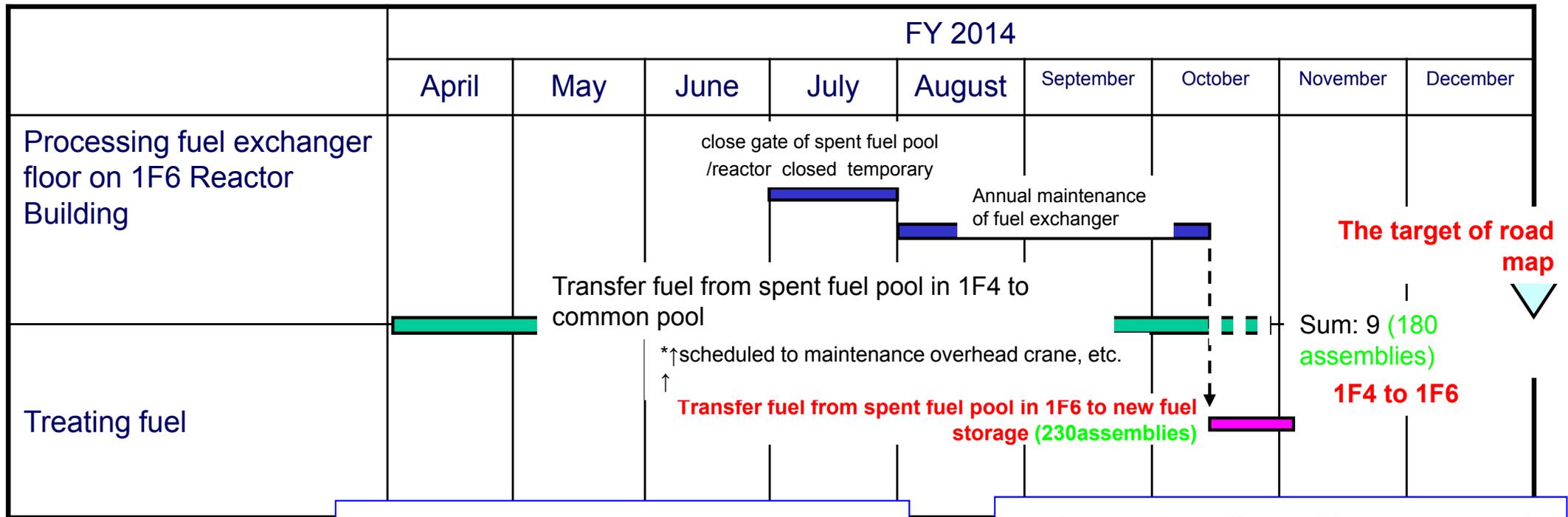
**Spent fuel pool in 1F6**  
(capacity: 1,770 assemblies)  
(storage in 2014)  
new fuel: 248 assemblies  
spent fuel: 1,458 assemblies  
(sum: 1,706 assemblies)

**New fuel storage in 1F6**  
(capacity: 230 assemblies)  
230/248 new fuel stored in 1F6 will be transferred \*1

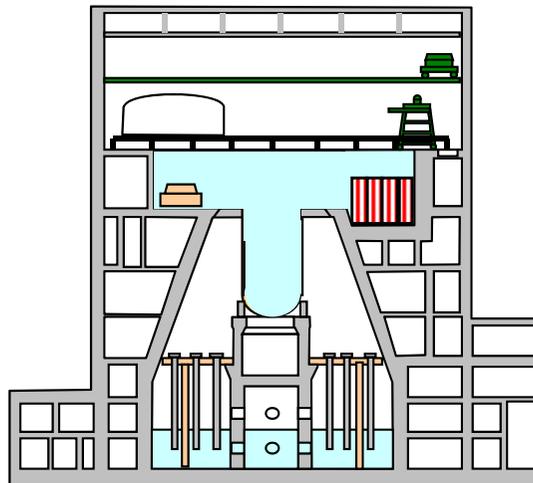
\*1 As capacity of 1F6 is 230 assemblies, we are considering transfer 230 over 248 of new fuel stored in spent fuel pool in 1F6 to new fuel storage in 1F6, and new fuel (180) in 1F4 to spent fuel pool in 1F6 temporary. (\* new fuel had been stored in 1F4 (24) were transferred to common pool.

\*2 We are considering fuel to transfer directly to new fuel storage to expand area to transfer. As is likely to rise atmosphere dose rate, with construction of shield etc., our operation will not be affected.

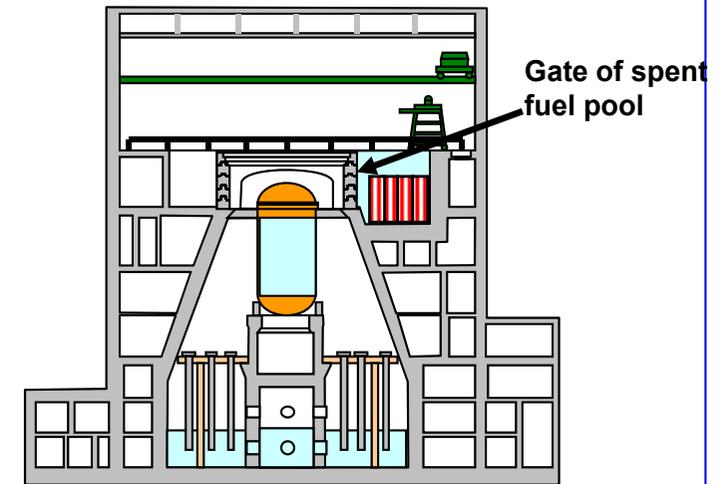
# New fuel transfer schedule (draft)



[pool gate open]: current



[pool gate closed]: enable to treat cask



For treating cask, gate of spent fuel pool will be closed temporarily, and reactor will be shut down temporarily.

# <Reference> The way of estimating shortage of common pool volume

**Fuel without 1F4 deformed fuel (1 assembly) will be stored in conventional rack**

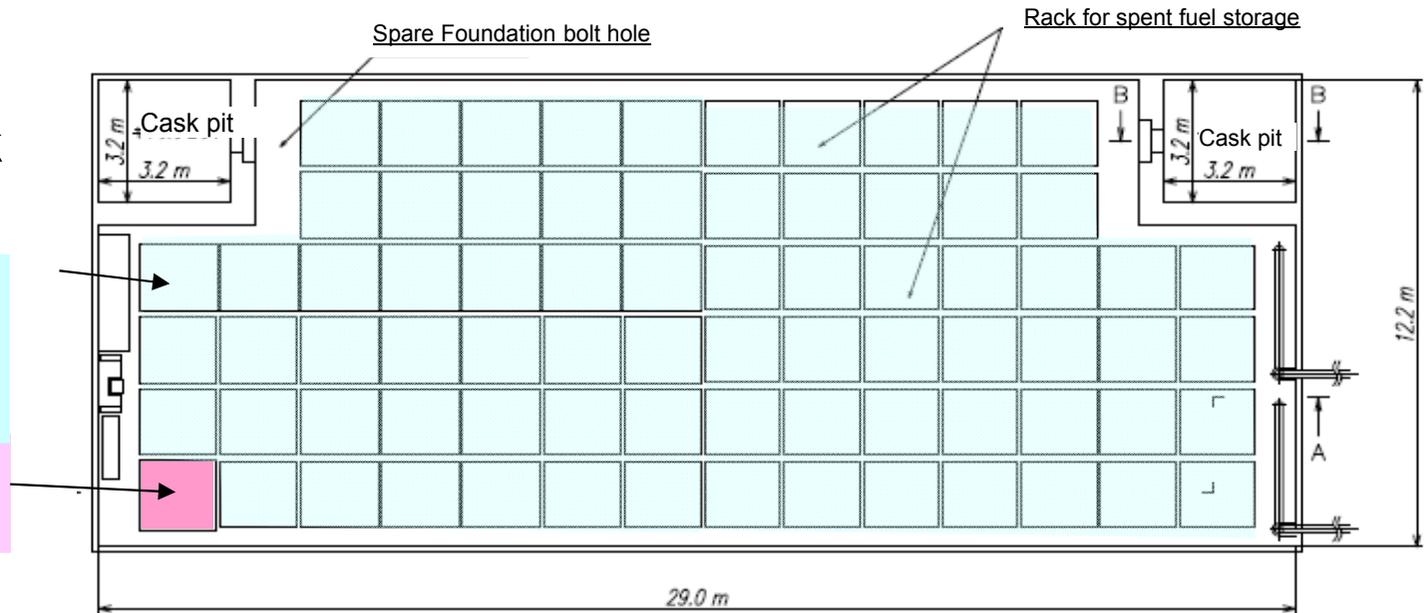


conventional rack  
(capacity: 6,750 assemblies  
(90 assemblies × 75))

rack for deformed/damaged fuel  
(capacity: 49 assemblies × 1)



1F4 deformed fuel(1 assembly) will be stored after transferred to rack for deformed/damaged fuel.



Common pool storage (current outlook)

1F4 (before transporting to common pool)

Non-defected fuel: 1,534 assemblies

Defected fuel: 1 assembly ※6,907 = 6,377(stored at the time of earthquake) - 1,004(loaded to cask) + 1,534(1F4)



	To store	Stored in common pool
Non-defected fuel	6,907 assemblies	6,750 assemblies
Defected fuel	1 assembly	49 assemblies



**more 157 assemblies need to be stored**

Fuel rack in common pool also contains 2 mock fuels, so they are counted as storage.