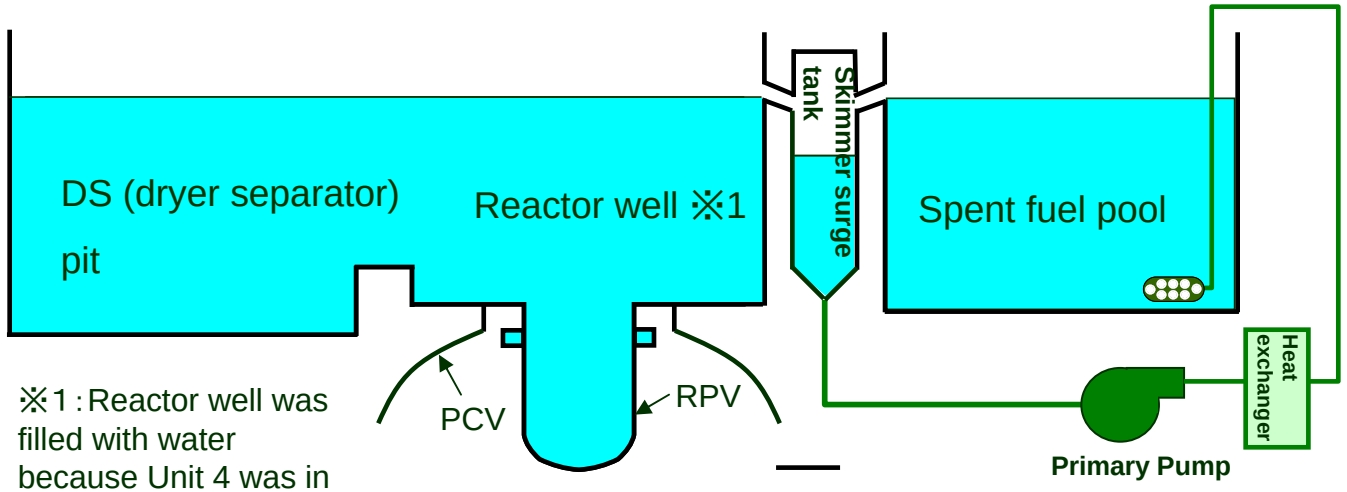
The skimmer surge tank drawdown at the Unit 4 spent fuel pool

January 23, 2012

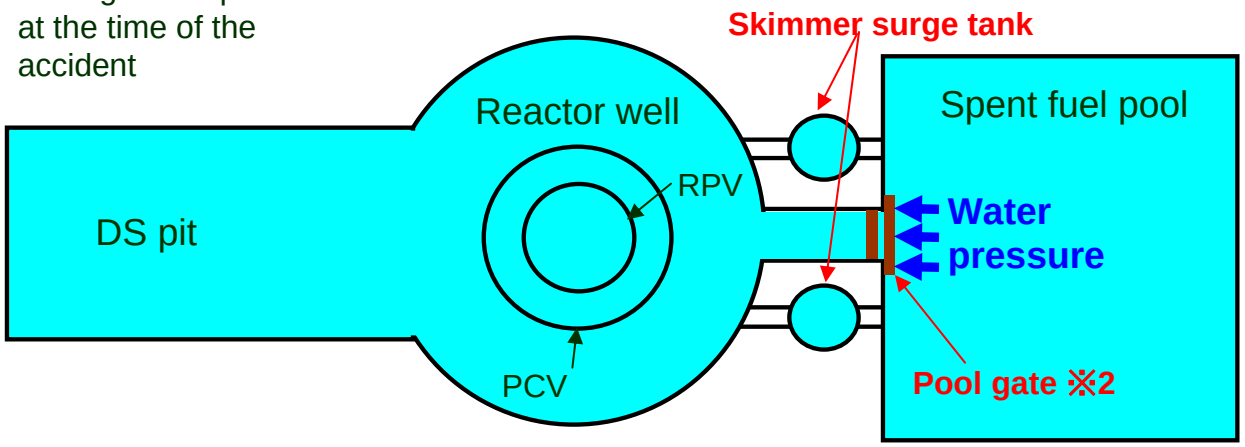
Tokyo Electric Power Company

1. Outline

- **Found the skimmer surge tank drawdown after the earthquake at 14:28 on Jan. 1.**
- **The earthquake made the gate seal between the spent fuel pool and reactor weakened, and some water moved from the pool to the reactor well.**



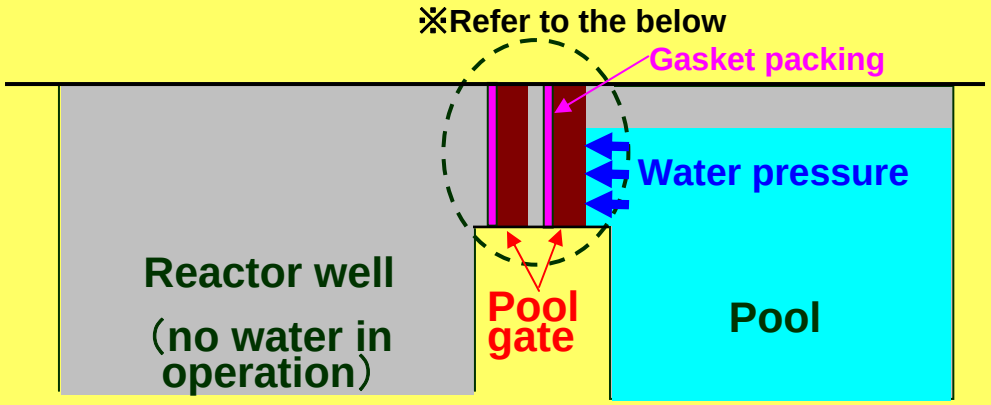
※1 : Reactor well was filled with water because Unit 4 was in the regular inspection at the time of the accident

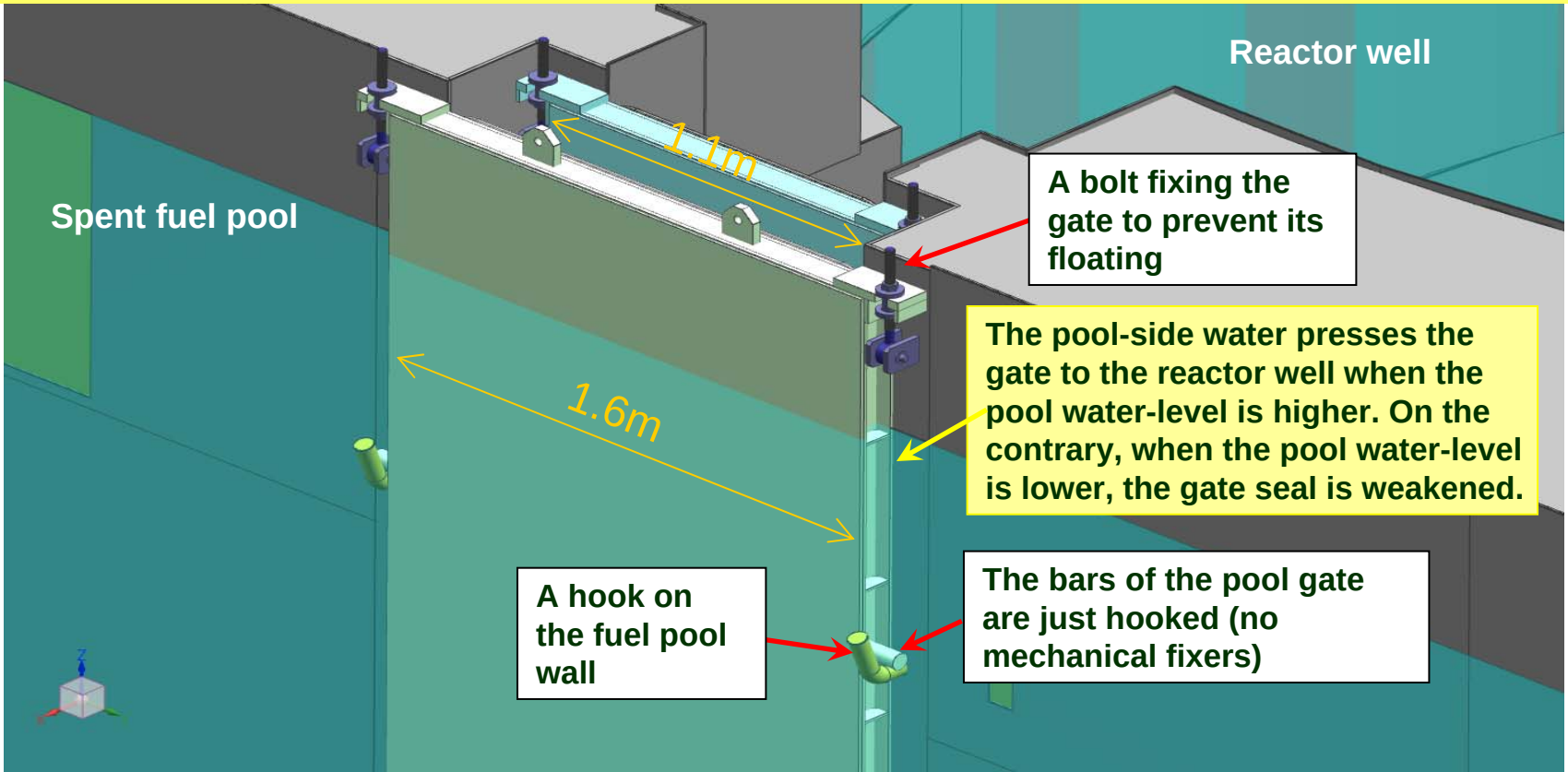


※2 : The water pressure is much lesser than that in operation because of little difference of the water level between the reactor well and the spent fuel pool. This causes the gate seal weakened.

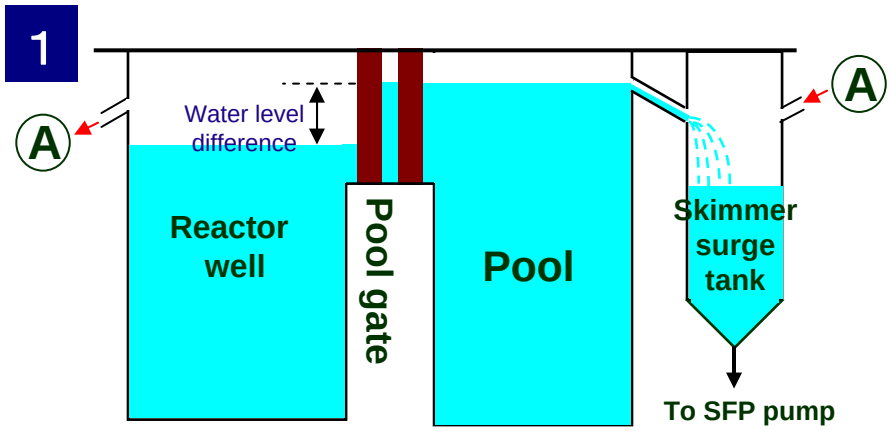
2. Pool gate structure

- The water pressure in the pool, pressing the gasket packing on the wall, makes the gate sealed
- The gate is set over the three hooks and fixed by bolts to prevent the gate floating

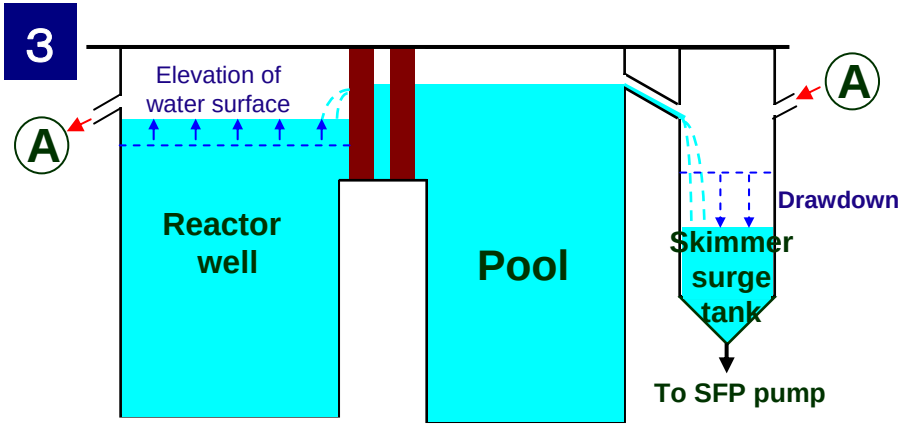




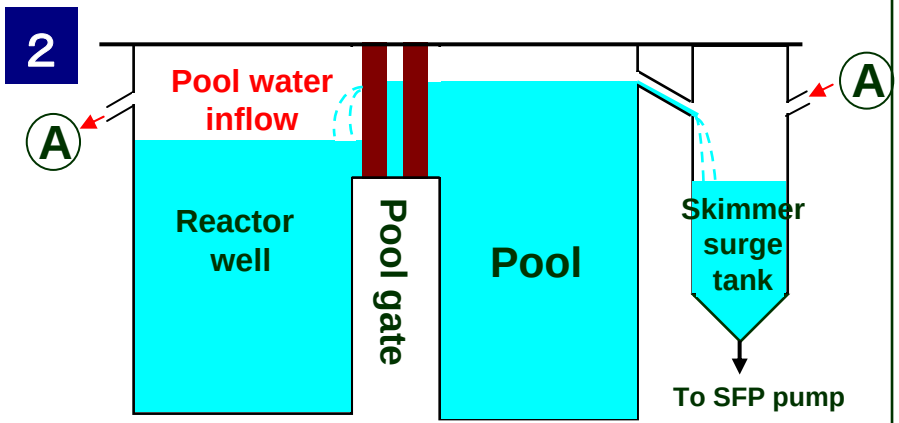
3. Estimated mechanism of skimmer surge tank drawdown



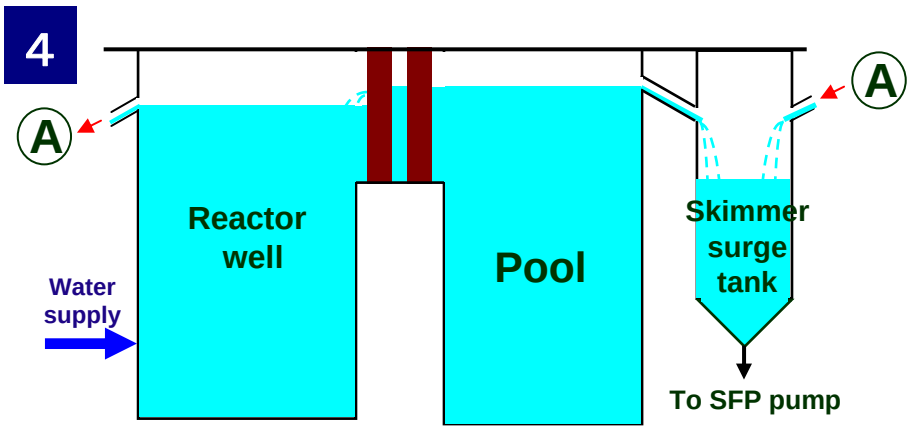
Before the earthquake, the water level of the reactor well was lower than that of the pool, and pool gate was sealed



The pool water flowing to the reactor well elevates its water-level and decreases water-flow from the pool to the skimmer surge tank, and results in the skimmer drawdown.



Estimated that the earthquake made pool gate moved and its seal weakened, and the pool water flowed into the reactor well through the pool gate space



When water was supplied till the reactor well overflowed (Ⓐ in the figure)、the skimmer surge tank drawdown was recovered as well as before the earthquake

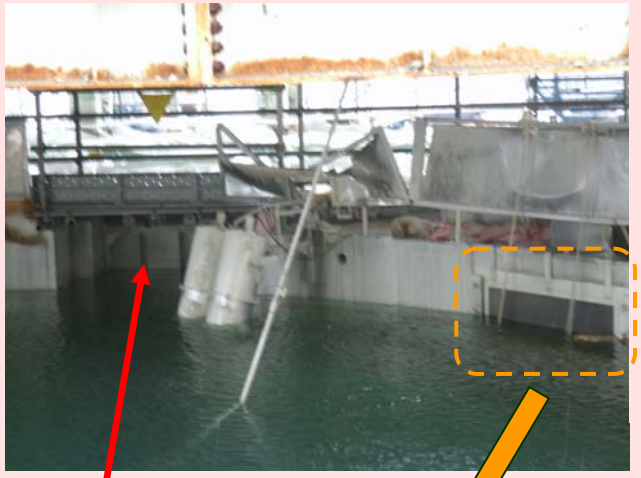
4. Management of pool water-level

◆ Water flow from pool to reactor well

- The overflow from the reactor well to the skimmer surge tank was found on the patrol of Jan. 6 and 22. Estimated that this water circulating might continue

→ Pool → Reactor well → Skimmer surge tank

Status of reactor well (Jan.22)



Pool gate

◆ Management of pool water-level from now

- Overseeing the pool water-level as well as the **reactor well (indicator & camera)**, and managing both the pool and reactor well water-level
- Keeping reactor well water-level around the overflow level→when the reactor well water-level decreases with natural evaporation, supplying it with water.

Skimmer surge tank inlet

Water surface