

Cause Investigation of Water Level Decreases inside H4 East Area and H4 Area Dikes

< Reference >
December 27, 2013
Tokyo Electric Power Company

- Investigation result
 - The concrete dikes and foundations have no damages such as a crack that may have lead to leakage.
- Likely causes
 - Deterioration of water stop seal applied to concrete casting joints, as in the case of leakage from the H5 area dike (which occurred on December 21, 2013)
 - Leakage of rainwater inside the dike to the outside of the foundation and dike as a result of its penetration into a casting joint through a deteriorated part and its traveling through crashed stones underneath the costing joint or the foundation.



Condition of the concrete casting joint
(H4 East area)

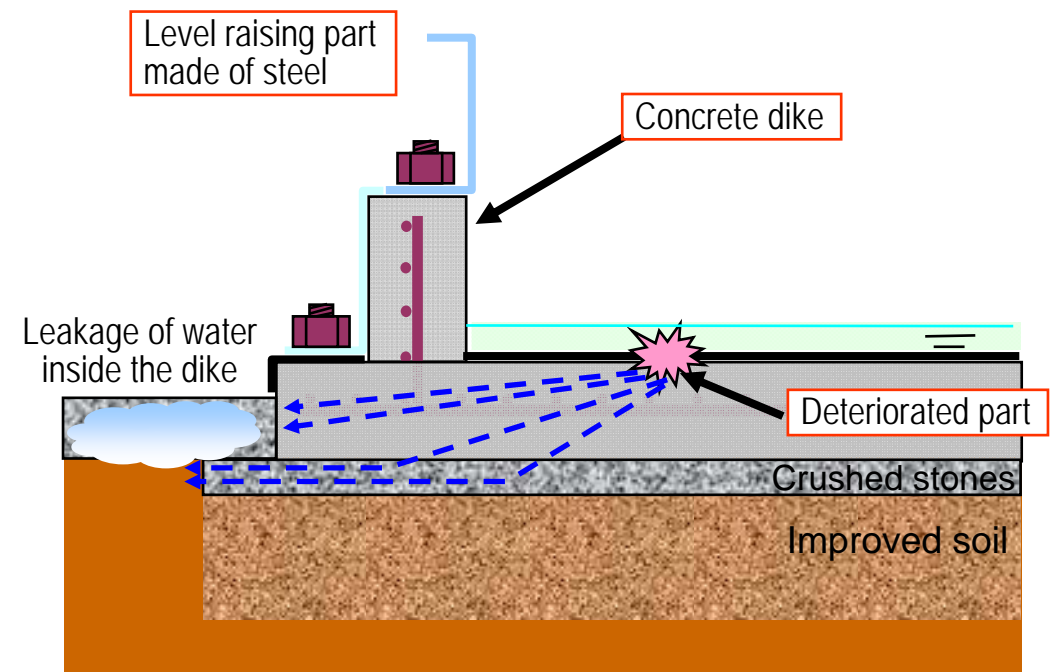


Illustration of the leakage
(leakage of water inside the H5 area dike)

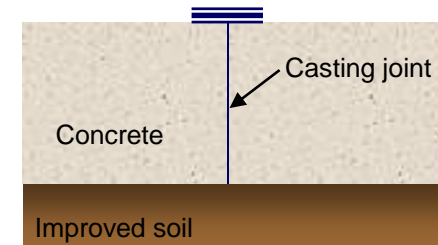
Measures taken against water level decreases inside dikes (1)

Water stop measures within the dike

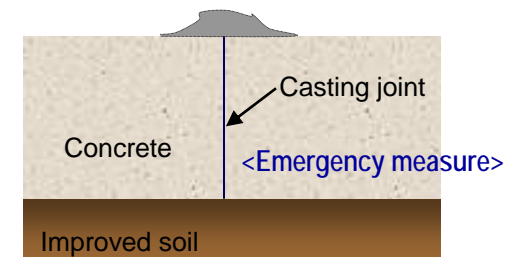
- As an **emergency measure**, deteriorated water stop sheets for casting joints were removed, and epoxy putty caulking was applied.
 → After this emergency measure was taken, a test using water was conducted inside the dike, which proved that water level decreases had stopped (on December 26 and 27 in the H4 and H4 East areas).
- As a **mid- and long-term measure**, the inside of the dike will be covered with urethane waterproof coating so that leakage from a crack, a casting joint, etc. can be prevented.

* Other than the H5 and H4 areas, H1 East, H2, H6 and H9 areas have been provided with water stop sheets of the same type for casting joints. These areas, however, have already been coated with urethane.

Before the measure was taken:
Provided with asphaltic waterproof material



After the measure was taken:
Coated with underwater epoxy putty



Month and year	December 2013									January 2014			February	
Date	23	24	25	26	27	28	29	30	31	Early	Mid	Late	Early	Mid
H5	Water removal and cleansing									Water removal and cleansing			Coating	
H4 East	Water removal and cleansing				Emergency measure using epoxy putty						Water removal and cleansing		Coating	
H4		Water removal and cleansing								Water removal and cleansing		Coating		Mid- and long-term measure using urethane coating
H4 North				Water removal and cleansing						Water removal and cleansing			Coating	

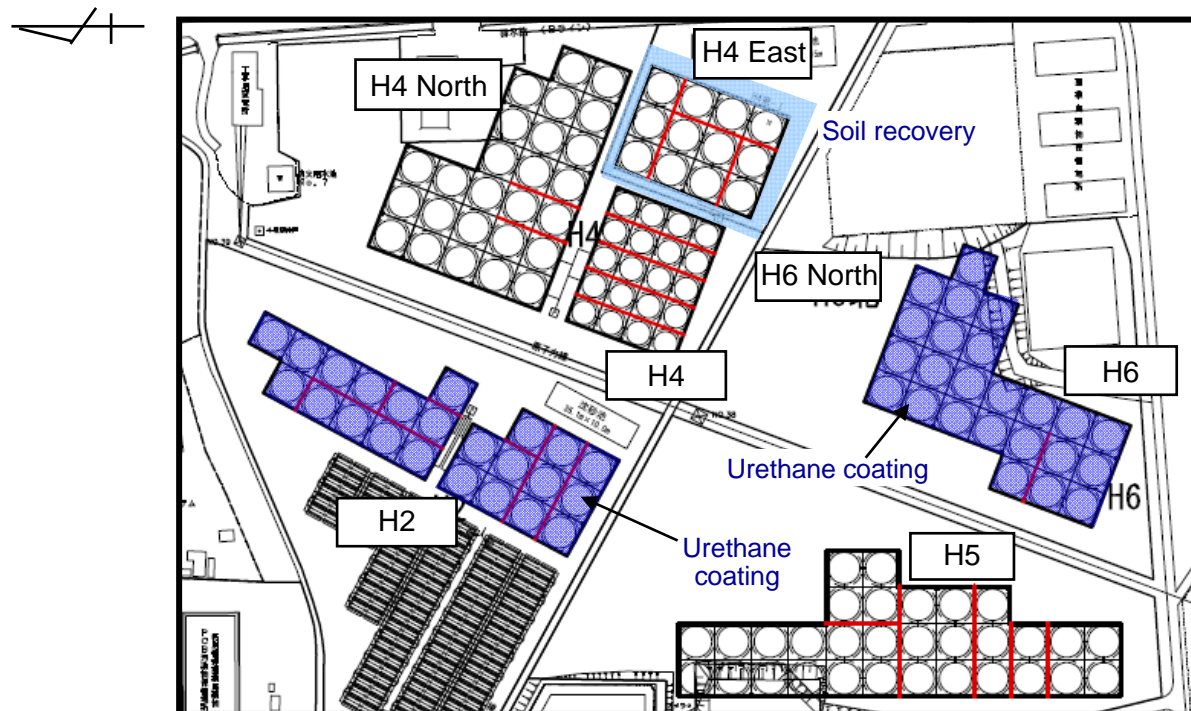
Measures taken against water level decreases inside dikes (2)

■ Mitigation of contamination

- Recovery of soil likely to have been contaminated in the surrounding area (on December 26 to 28 [Schedule])

■ Intensified monitoring

- Monitoring of the trends of water levels inside the dikes, which are measured in daily patrols,
- Intensification of observation at the observation holes E-2, E-5, and F-1, etc.



* Based on the previous experience, the range of soil recovery will be basically set to approx. 0.5 m in depth and approx. 3 m in width. The range may be enlarged as necessary.

[Legend]

- Existing water stop seal (subject to repair)
- Area already coated with urethane
- Area subject to soil recovery

