Drop in Water Levels in the Fukushima Daiichi Unit 1 and Unit 3 Primary Containment Vessels (Continued report)

<Reference Document>
March 4, 2021
Tokyo Electric Power Company Holdings Inc.
Fukushima Decontamination & Decommissioning
Engineering Company

- The following is an update on the status of the drop in water levels in the primary containment vessels (PCV) of Units 1 and 3 that was announced on February 19.

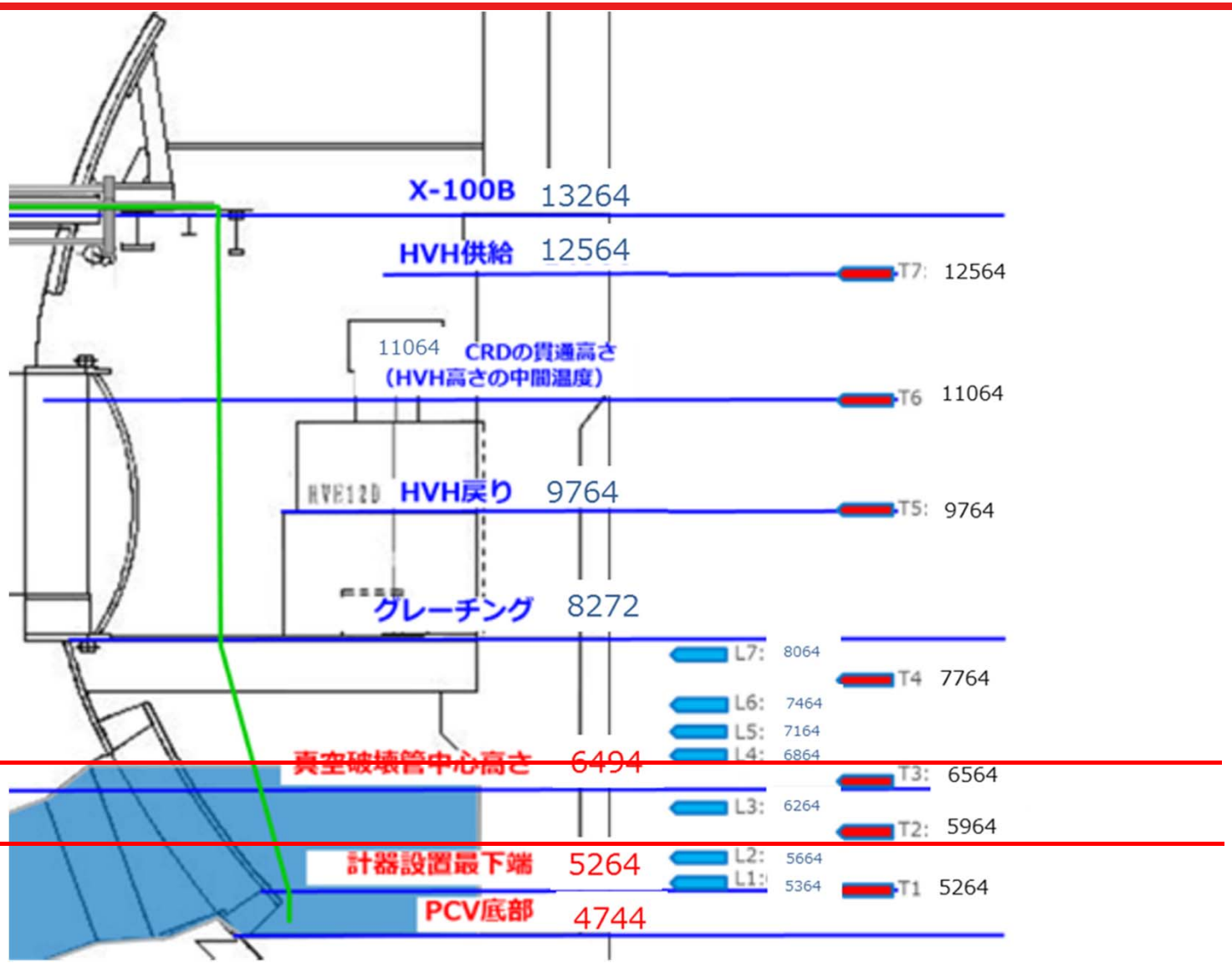
- The current conditions are as follows: [as of 11 AM, March 4]
  Unit 1: Current water level is between the installation locations of temperature gauge T2(T.P.+5,964mm) and water level gauge L2 (T.P.+5,664mm). (The elevation of the bottom of the PCV is T.P.+4,744mm)
  Unit 3: Current water level is between the installation locations of water level gauge L3(T.P.+10,064mm) and water level gauge L2 (T.P.+9,264mm). (The elevation of the bottom of the PCV is T.P.+4,044mm)
  ※ Water level inside the PCV (calculated by converting the head water pressure of the suppression chamber pressure): T.P.+9,533mm
  (Calculated value as of 5 PM, February 19: T.P.+9,623mm)
  Trends will be continually monitored.
  No significant fluctuations have been seen with temperatures at the bottom of the PCV's, containment vessel gas management system radiation or monitoring posts at site boundaries.

- Approximately 3.0m³ per hour of cooling water is being continually injected into the Unit 1 PCV, and water level is being continuously monitored. Fuel debris is being kept cool and there has been no significant increase in parameters such as temperatures or dust discharge volumes. However, if the water level falls below the lowest water level gauge, L1, it will become impossible to monitor the water level inside the PCV using water gauges. Furthermore, since the water level gauges are contact-activated, if the water level falls below L2 and continues to drop, it will be impossible to predict when the water level will fall below L1. Therefore, in order to monitor water level in a stable manner the amount of cooling water being injected will be increased if the water level falls below L2.

- Assuming the water level continues to decrease as it has, it is predicted that PCV water level could drop to the height of water level gauge L2 by around March 5 at the earliest. Therefore, we plan to increase the amount of cooling water being injected around that time (increase from the current approximately 3.0 m³/hour to approximately 4.0 m³/hour).

- At Unit 3, our calculations suggest that PCV water level is fairly stable, but we will continue to monitor trends.

Unit 1 primary containment vessel temperature gauge/water level gauge installation heights

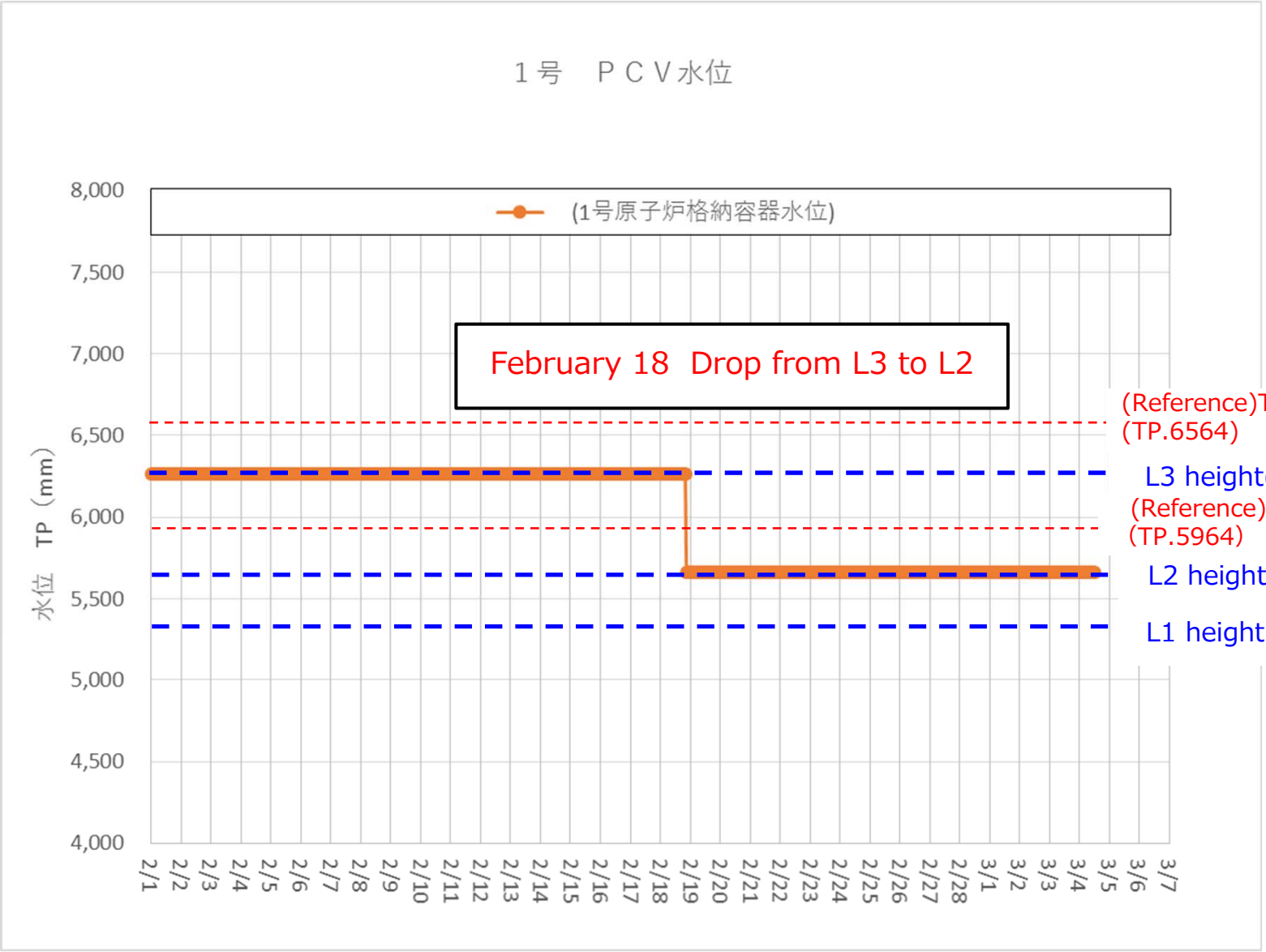


Water level on February 13 prior to the earthquake

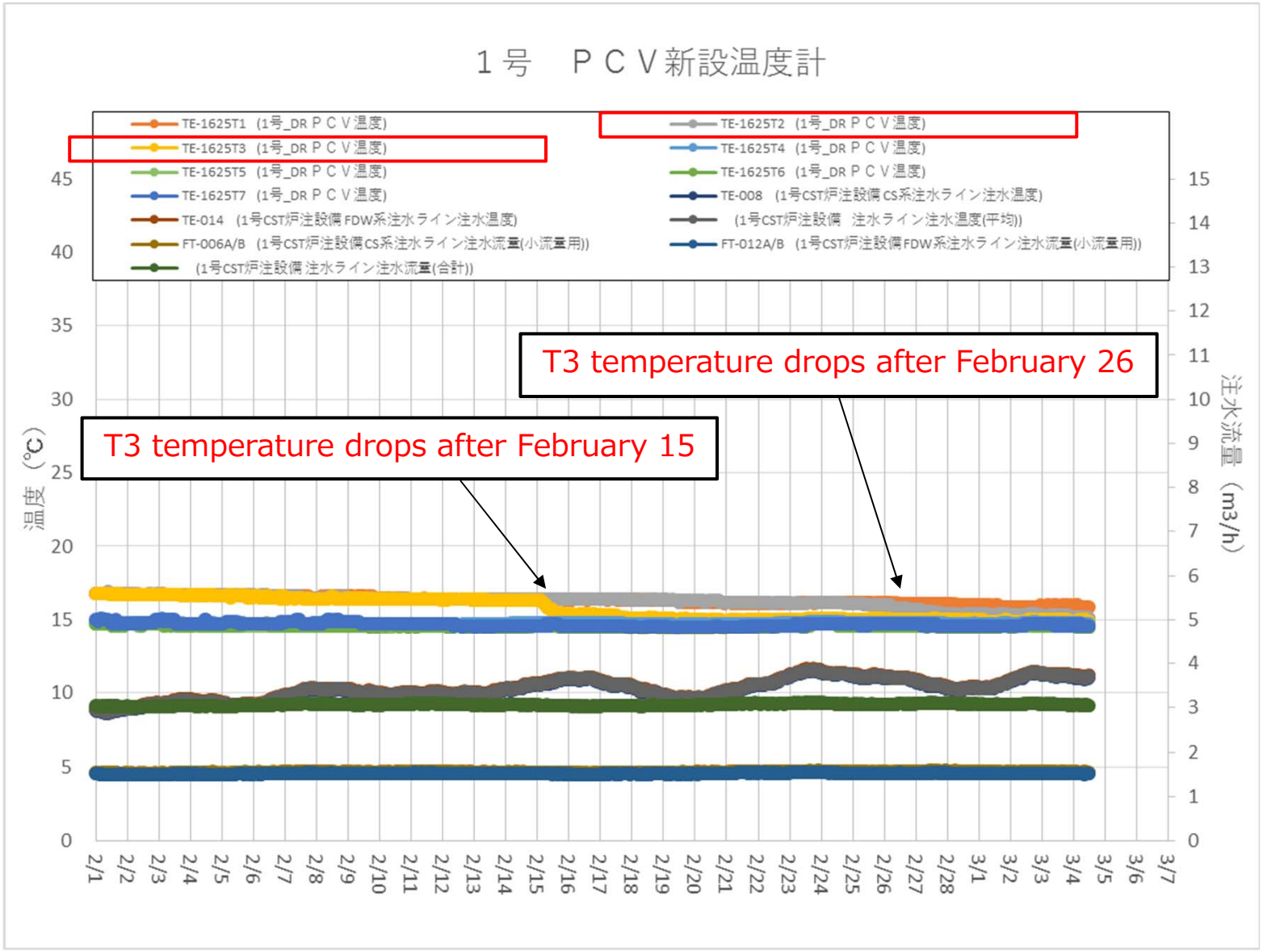
Current water level (March 4) (estimated)

Installation height is indicated using elevation (T.P.)

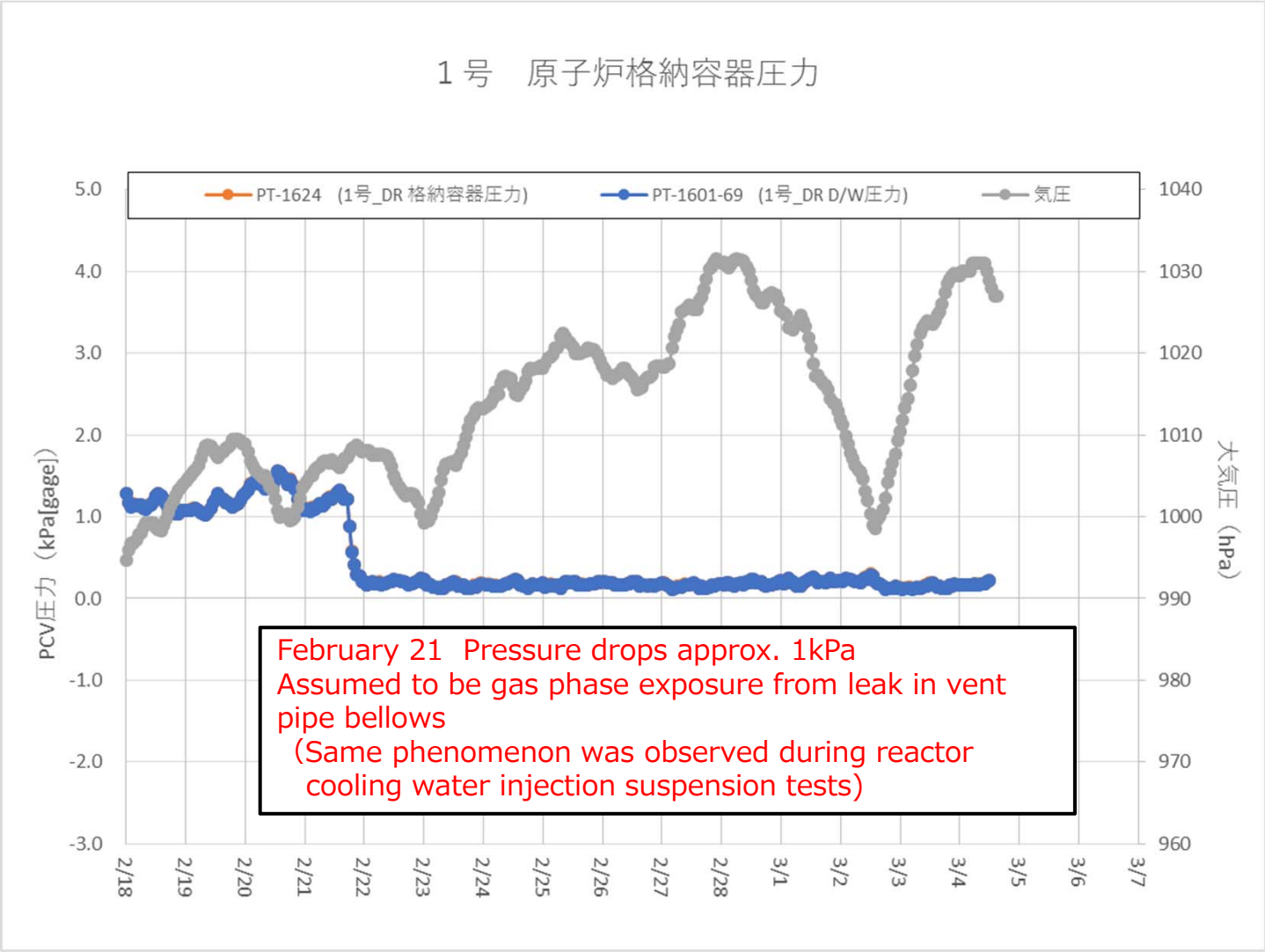
Unit 1 primary containment vessel water level



Unit 1 primary containment vessel temperatures

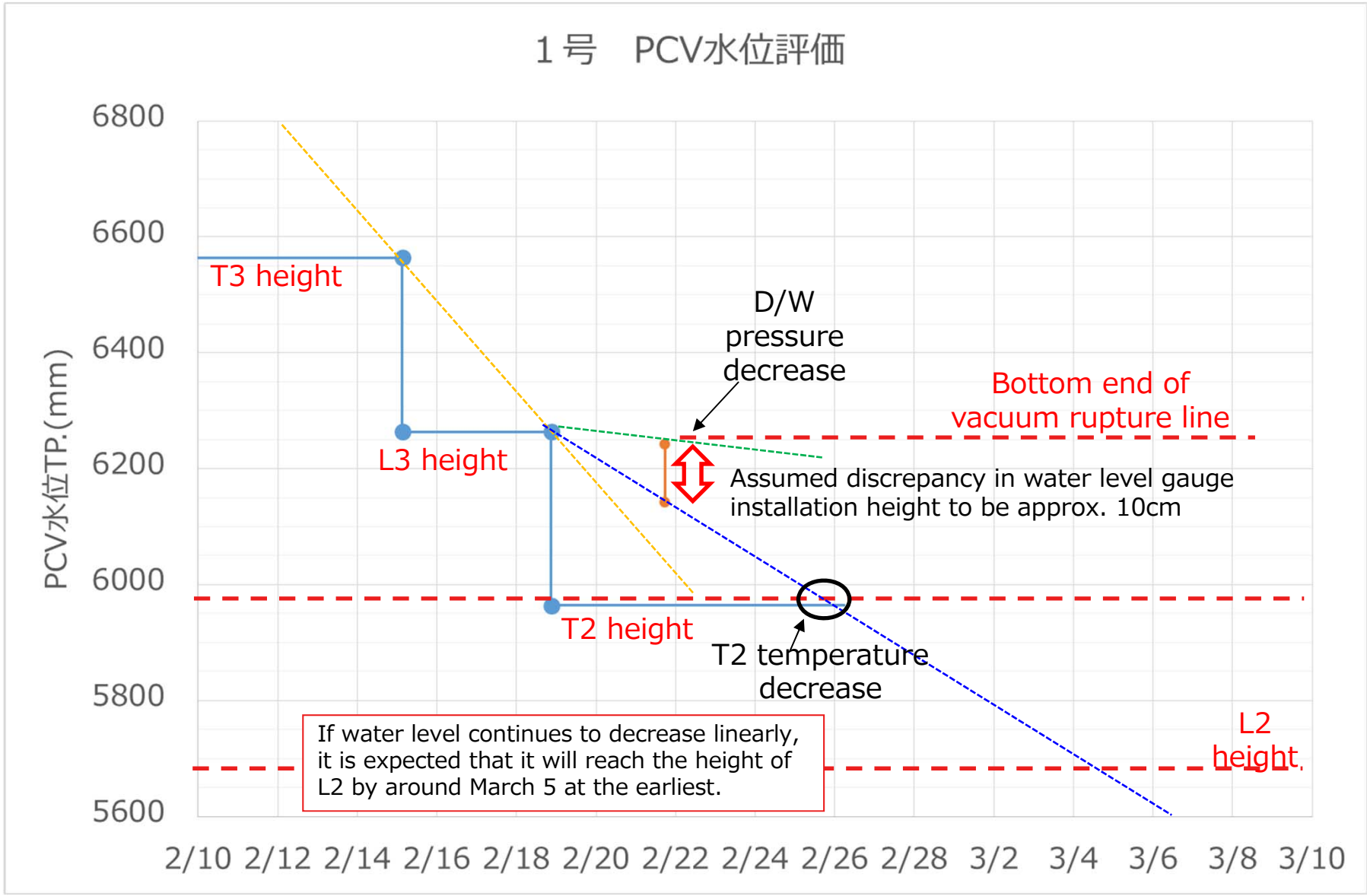


Unit 1 primary containment vessel pressure



※　Unit 3 has remained about the same (approx. 0.4kPa) during the PCV water level decrease.

Unit 1 Predicted primary containment vessel water level fluctuations



Method/procedure for increasing the amount of cooling water injected into the reactor at Unit 1

■ Criteria and action

- The amount of cooling water being injected will be increased by +1m³/hour if the water level in the PCV falls to the height of the L2 water level gauge.

■ Objective

- In order to enable water level to be continually monitored with water level gauges, the amount of cooling water being injected shall be increased as a precaution if water level falls below L2 in order to prevent the water level in the PCV from falling to the height of L1, which is the lowermost contact point

■ Procedure

- The amount of cooling water being injected shall be immediately increased as soon as the PCV water level falls below the height of L2

＜Unit 1＞

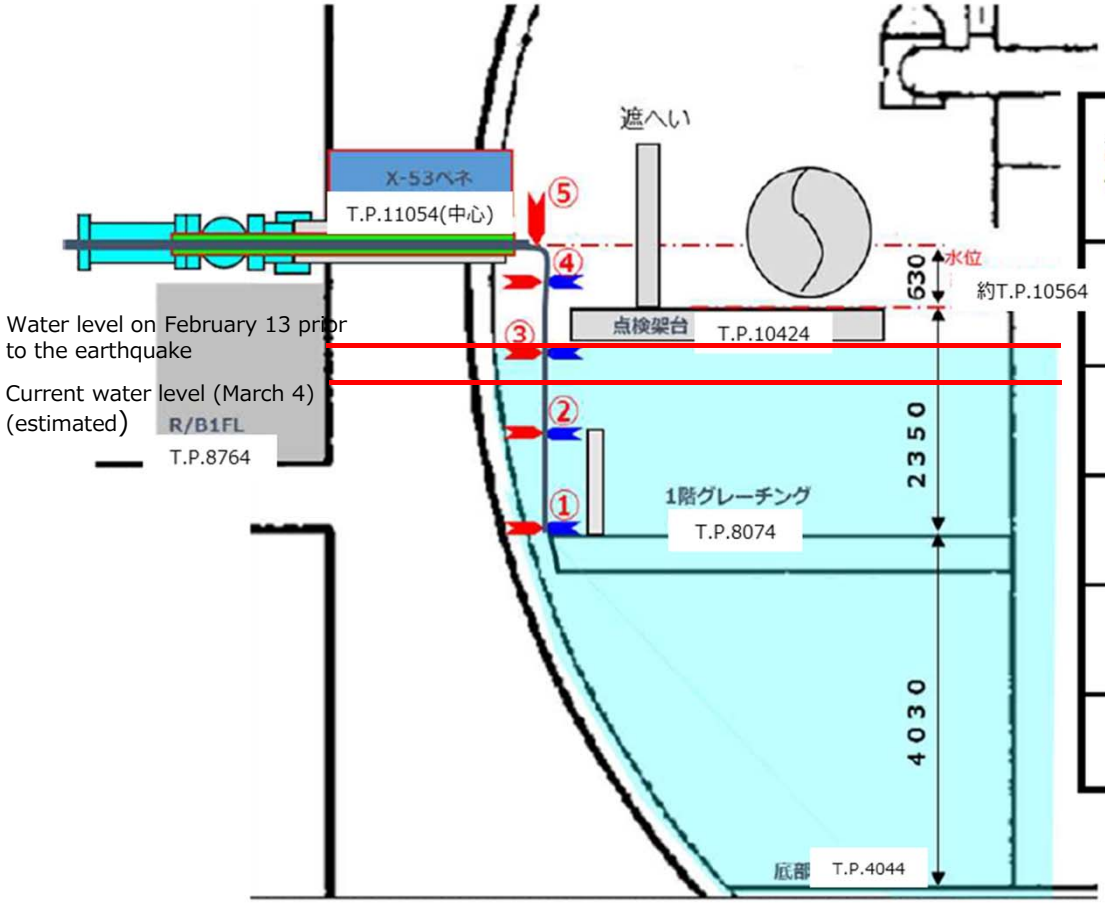
Feed water system	1.5m³/h	⇒ 2.5m³/h	(+1m³/h)
Core spray system	1.5m³/h	⇒ 1.5m³/h	(No change)

(Reference)

＜Unit 3＞

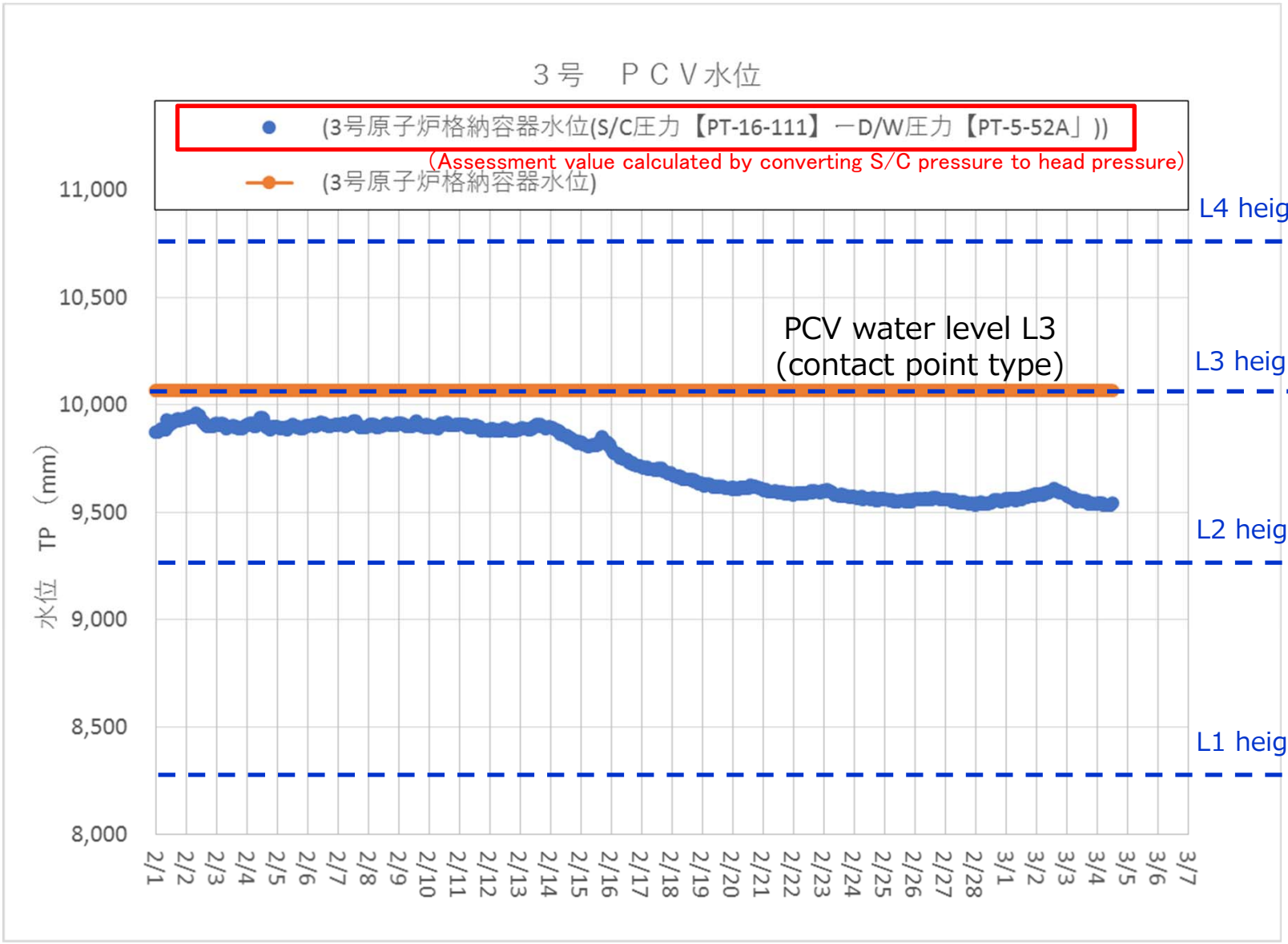
Feed water system	1.5m³/h	⇒ 1.5m³/h	(No change)
Core spray system	1.5m³/h	⇒ 2.5m³/h	(+1m³/h)

Unit 3 primary containment vessel temperature gauge/water level gauge installation heights



計器位置	設置計器		設置位置 (T.P)
	温度計	水位計	
⑤	TE-16-005	—	約10964
④	TE-16-004	LS-16-004	約10714
③	TE-16-003	LS-16-003	約10064
②	TE-16-002	LS-16-002	約9264
①	TE-16-001	LS-16-001	約8264

Unit 3 primary containment vessel water level



Unit 3 primary containment vessel temperatures, etc.