Unit 2 RPV Alternative Thermometer Installation at Fukushima Daiichi Nuclear Power Station
1. Alternative Thermometer Installation Condition (Photo)

- N-10 (RPV nozzle)
- T branch (40A)
- RVI-337
- X-27 penetration (RVI-301)
- X-51 (PCV penetration)
- Orifice
- Coil guide
- Thermometer housing
- X-51 penetration
- N₂ line
- Pressure device

Investigation of the inside of the pipe by an endoscope (October 2)

Photo taken by a cooperative company

Remaining water drain line

Thermometer compensation lead wire

Thermometer installation condition (October 3)

Photo taken by TEPCO
2. RPV Alternative Thermometer Installation Location

- The RPV alternative thermometer has been installed in N-10 nozzle at approx. 5cm inward from the RPV external wall surface. The thermometer measures the temperature of the RPV wall surface material similarly to the existing RPV bottom thermometer. The thermometer was inserted to the location determined based on dimensional control. The target installation location is set at 5cm inward from the RPV external wall surface considering the error (≤ 5cm max.).

- It has been confirmed at the mockup test that the thermometer is capable of accurately measuring the temperature as long as the thermometer reaches the RPV wall even if it does not touch the metal part.
3. Comparison between the Alternative Thermometer and the Existing Thermometer

Installation location

Table 1. Readings of the existing thermometer and the new thermometer

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Before installation</th>
<th>After installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE-2-3-69H3 (RPV bottom head upper thermometer)</td>
<td>46.1 °C</td>
<td>42.6 °C</td>
</tr>
</tbody>
</table>

As of 11:00 AM on October 3

Table 2. Direct current resistance of the new thermometer

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Before installation</th>
<th>After installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>New thermometer</td>
<td>1461.8 Ω</td>
<td>1464.6 Ω</td>
</tr>
</tbody>
</table>

Installation angle (circumferential direction): 270 ° / 180 °