## Fukushima Daiichi Nuclear Power Station Plant Parameters

As of 12:00 on November 29

### Status of water injection to the reactor
- **Unit 1**: fresh water feeding
  - Feed water system 4.5m³/h (as of 11:00, 11/29)
- **Unit 2**: fresh water feeding
  - Feed water system 3.0m³/h, CS line 4.4m³/h (as of 11:00, 11/29)
- **Unit 3**: fresh water feeding
  - Feed water system 2.1m³/h, CS line 6.0m³/h (as of 11:00, 11/29)
- **Unit 4**: D/W: 0.111 MPa abs
- **Unit 5**: Stoppage range
  - Stoppage range: 1831mm (as of 12:00, 11/29)
- **Unit 6**: Stoppage range
  - Stoppage range: 2120mm (as of 12:00, 11/29)

### Water level in the reactor
- **Unit 1**: Fuel range A: -1910 mm (as of 11/29)
- **Unit 2**: Fuel range B: -2128 mm (as of 11/29)
- **Unit 3**: Fuel range A: -1910 mm (as of 11/29)
- **Unit 4**: Fuel range B: -2128 mm (as of 11/29)
- **Unit 5**: Fuel range A: -1910 mm (as of 11/29)
- **Unit 6**: Fuel range B: -2128 mm (as of 11/29)

### Pressure in the reactor
- **Unit 1**: System A: 0.007 MPa g (as of 11/29)
- **Unit 2**: System B: -0.016 MPa g (as of 11/29)
- **Unit 3**: System A: 0.016 MPa g (as of 11/29)
- **Unit 4**: System B: -0.016 MPa g (as of 11/29)
- **Unit 5**: System A: 0.007 MPa g (as of 11/29)
- **Unit 6**: System B: -0.016 MPa g (as of 11/29)

### Temperature
- **Unit 1**: Temperature in feed-water nozzle: 70.3 ℃
- **Unit 2**: Temperature in feed-water nozzle: 59.4 ℃
- **Unit 3**: Temperature in feed-water nozzle: 59.4 ℃
- **Unit 4**: Temperature at reactor vessel bottom: 75.9 ℃ (as of 11:00, 11/29)
- **Unit 5**: Temperature at reactor vessel bottom: 67.9 ℃ (as of 11:00, 11/29)
- **Unit 6**: Temperature at reactor vessel bottom: 67.9 ℃ (as of 11:00, 11/29)

### D/W
- **Unit 1**: D/W: 0.111 MPa abs
- **Unit 2**: D/W: 0.1015 MPa abs
- **Unit 3**: D/W: 0.384 MPa g (0.485 MPa abs)
- **Unit 4**: D/W: 0.384 MPa g (0.485 MPa abs)
- **Unit 5**: D/W: 0.1015 MPa abs
- **Unit 6**: D/W: 0.1015 MPa abs

### RV bellows temperature
- **Unit 1**: RPV bellow seal: 56.3 ℃
- **Unit 2**: RPV bellow seal: 56.3 ℃
- **Unit 3**: RPV bellow seal: 61.7 ℃
- **Unit 4**: RPV bellow seal: 62.5 ℃
- **Unit 5**: RPV bellow seal: 62.5 ℃
- **Unit 6**: RPV bellow seal: 62.5 ℃

### HVH return
- **Unit 1**: HVH return: 75.5 ℃ (as of 11:00, 11/29)
- **Unit 2**: HVH return: 60.1 ℃ (as of 11:00, 11/29)
- **Unit 3**: HVH return: 75.5 ℃ (as of 11:00, 11/29)
- **Unit 4**: HVH return: 60.1 ℃ (as of 11:00, 11/29)
- **Unit 5**: HVH return: 60.1 ℃ (as of 11:00, 11/29)
- **Unit 6**: HVH return: 60.1 ℃ (as of 11:00, 11/29)

### D/W Atmosphere temperature
- **Unit 1**: System A: 39.0 ℃
- **Unit 2**: System A: 39.2 ℃ (as of 11/29)
- **Unit 3**: System A: 39.0 ℃
- **Unit 4**: System B: 47.0 ℃ (as of 11/29)
- **Unit 5**: System B: 47.0 ℃ (as of 11/29)
- **Unit 6**: System B: 47.0 ℃ (as of 11/29)

### Water level in the reactor vessel bottom
- **Unit 1**: 44.5 ℃ (as of 11/29)
- **Unit 2**: 75.9 ℃ (as of 11/29)
- **Unit 3**: 75.9 ℃ (as of 11/29)
- **Unit 4**: 67.9 ℃ (as of 11/29)
- **Unit 5**: 67.9 ℃ (as of 11/29)
- **Unit 6**: 67.9 ℃ (as of 11/29)

### Water temperature
- **Unit 1**: 22.4 ℃
- **Unit 2**: 22.4 ℃
- **Unit 3**: 22.4 ℃
- **Unit 4**: 22.4 ℃
- **Unit 5**: 22.4 ℃
- **Unit 6**: 22.4 ℃

### CAMS radiation monitor
- **Unit 1**: D/W: 1.00E-02 Sv/h, S/C: 6.60E-01 Sv/h
- **Unit 2**: D/W: 2.49E-01 Sv/h, S/C: 6.80E-01 Sv/h
- **Unit 3**: D/W: 2.49E-01 Sv/h, S/C: 6.80E-01 Sv/h
- **Unit 4**: D/W: 2.49E-01 Sv/h, S/C: 6.80E-01 Sv/h
- **Unit 5**: D/W: 2.49E-01 Sv/h, S/C: 6.80E-01 Sv/h
- **Unit 6**: D/W: 2.49E-01 Sv/h, S/C: 6.80E-01 Sv/h

### Power source
- **Unit 1**: Receiving offsite power (P/C4D)
- **Unit 2**: Receiving offsite power (P/C4D)
- **Unit 3**: Receiving offsite power (P/C4D)
- **Unit 4**: Receiving offsite power (P/C4D)

### Others
- **Unit 1**: *Instrument failure*
- **Unit 2**: *Not covered for collecting data*
- **Unit 3**: *continuously monitoring the status*
- **Unit 4**: *Monitoring through water temperature of the reactor*
- **Unit 5**: *Monitoring is unnecessary since heat removal of reactor is functioning.*
- **Unit 6**: *Monitoring is unnecessary since all fuel are taken off!

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### Notes
- Some indicators might not be functioning properly beyond the normal condition for usage affected by the earthquake and subsequent events. We comprehensively evaluate situation in plants using all the available information from indicators and also focusing on trends, taking uncertainty of indicators into consideration.

### Calculations
- Pressure conversion: 
  - Gauge pressure (MPa g) = Absolute pressure (MPa abs) - atmospheric pressure (normal atmospheric pressure 0.1013 MPa)
  - Absolute pressure (MPa abs) = Gauge pressure (MPa g) + atmospheric pressure (normal atmospheric pressure 0.1013 MPa)
## Supplemental explanation for the plant parameters

<table>
<thead>
<tr>
<th>Item</th>
<th>Recording manner</th>
<th>Measurement manner</th>
<th>Ch number or number of systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status of water injection to the reactor</td>
<td>Water inflow (CS line : Core Spray system)</td>
<td>Temporary</td>
<td>System 1 / 1</td>
</tr>
<tr>
<td>Water level in the reactors</td>
<td>Data measured by the water gauge, which monitor the fuel range</td>
<td>Temporary</td>
<td>System A 1 / 1Ch, System B 1 / 1Ch</td>
</tr>
<tr>
<td>Pressure in the reactor</td>
<td>One representing value is noted among multiple data on each System A, B. Readings of temporary instruments are represented in A system for Unit 1 and 2.</td>
<td>Temporary</td>
<td>1 / 1 system (Unit 1 / 2), System A 1 / 2Ch, System B 1 / 2Ch (Unit 3)</td>
</tr>
<tr>
<td>Temperature in the reactor</td>
<td>Since there is no water inflow at the points, where thermometers are set, no data is collected.</td>
<td>―</td>
<td>―</td>
</tr>
<tr>
<td>Temperature around the reactor vessel</td>
<td>Data measured at feed-water nozzle and at reactor vessel bottom (1U, 3U : RPV Bottom Head, 2U : RPV Wall Above Bottom Head) are noted among multiple data to view the whole picture.</td>
<td>Temporary</td>
<td>Point of Feed-water nozzle, reactor vessel bottom 1 / 4Ch, 1 / 2Ch (Unit 1), 1 / 1Ch (Unit 2 / 3)</td>
</tr>
<tr>
<td>Pressure in D/W・S/C</td>
<td>Data from temporary instrument, (D/W : Dry Well, S/C : Suppression Chamber)</td>
<td>Temporary</td>
<td>(D/W) wide range 1 / 1Ch (Unit 1), 1 / 4Ch (Unit 2 / 3), (S/C) 1 / 1 system (Unit 1 / 2), 1 / 2Ch (Unit 3)</td>
</tr>
<tr>
<td>D/W Atmosphere temperature</td>
<td>Data at upper point (RPV Bellows Air) and middle point (HVH return) are noted among multiple data to view the whole picture. (RPV : Reactor Pressure Vessel, HVH : Heating Ventilating Handling Unit)</td>
<td>Temporary</td>
<td>RPV Bellows Air D/W HVH return 1 / 5Ch</td>
</tr>
<tr>
<td>CAMS radiation monitor</td>
<td>Data from temporary instrument, (CAMS : Containment Atmospheric Monitoring System)</td>
<td>Temporary</td>
<td>D/W System A 1 / 1Ch, System B 1 / 1Ch, S/C System A 1 / 1Ch, System B 1 / 1Ch</td>
</tr>
<tr>
<td>Temperature in S/C</td>
<td>Data from temporary instrument. One representing value is noted among multiple data on each System A, B. Temperatures in S/C</td>
<td>Temporary</td>
<td>System A 1 / 4Ch (Unit 1), 8Ch (Unit 2 / 3), System B 1 / 4Ch (Unit 1), 8Ch (Unit 2 / 3)</td>
</tr>
<tr>
<td>Temperature in the spent fuel pool</td>
<td>Data from temporary instrument, (Non-thermal mode : Urgent Heat load Mode, SHC mode : Shut down Cooling Mode)</td>
<td>Temporary</td>
<td>1 / 1Ch (Unit 2), 1 / 1 system (Unit 1 / 3 / 4)</td>
</tr>
<tr>
<td>FPC skimmer surge tank level</td>
<td>Unit 2, 4 are the FPC skimmer surge tank level measured temporary instrument. Unit 1, 3 are the FPC skimmer surge tank level estimated from temporary pressure gages (reference value)</td>
<td>Temporary</td>
<td>1 / 1 system</td>
</tr>
</tbody>
</table>

## Supplemental explanation for notes

<table>
<thead>
<tr>
<th>Item</th>
<th>Contents</th>
<th>Status As of 12:00 on November 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument failure</td>
<td>Instrument failure : down of instrument reading (over scale), failure of instrument</td>
<td>Unit 1 CAMS D/W radiation monitor, Unit 2 Pressure in S/C, CAMS D/W radiation monitor, CAMS S/C radiation monitor, Unit 3 —</td>
</tr>
<tr>
<td>Not covered for collecting data</td>
<td>Unit 4 Monitoring is not implemented since all fuel are takeoff, Unit 5/6 Monitoring is not implemented since heat removal of reactor is functioning</td>
<td>—</td>
</tr>
<tr>
<td>Continuously monitoring the status</td>
<td>Inaccurate Data defined from relation with other Parameters such as negative figure</td>
<td>Unit 1 Reactor water level, Pressure in S/C, Unit 2 Reactor water level, RPV bellows air temperature, HVH return temperature, Unit 3 Reactor water level, reactor pressure, RPV bellows air temperature, CAMS D/W radiation monitor</td>
</tr>
</tbody>
</table>