**Status of countermeasures for restoring from the accident at Fukushima Daiichi Unit 1 through 4. As of June 8th, 2011. (Estimated by JAIF)**

<table>
<thead>
<tr>
<th>Type of plant</th>
<th>Unit 1</th>
<th>Unit 2</th>
<th>Unit 3</th>
<th>Unit 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric plant output</td>
<td>BWR-3</td>
<td>BWR-4</td>
<td>BWR-4</td>
<td>BWR-4</td>
</tr>
<tr>
<td>Operation status</td>
<td>In service</td>
<td>In service</td>
<td>In service</td>
<td>In service</td>
</tr>
<tr>
<td>No. of fuel rods loaded in the reactor</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>No. of spent fuel rods stored in the reactor</td>
<td>548</td>
<td>548</td>
<td>548</td>
<td>548</td>
</tr>
<tr>
<td>Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPV structural integrity</td>
<td>Damage and leakage</td>
<td>Unknown</td>
<td>Unknown</td>
<td>No damage</td>
</tr>
<tr>
<td>PCV structural integrity</td>
<td>Damage and leakage</td>
<td>Damage and leakage</td>
<td>Damage and leakage</td>
<td>No damage</td>
</tr>
<tr>
<td>Cooling by minimum injection rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establishing of circulating cooling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen injection into PCV</td>
<td>Injection continued [4/25]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flooding of PCV after sealing leaks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Securing heat exchange function</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improving work environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Goal of STEP 1 (April through June)
- **Cooling by minimum injection rate**
  - Reactor cooling system: Preventingdielectric breakdown resulting from high core temperature.
- **Establishing of circulating cooling**
  - Work for injection line in progress
- **Nitrogen injection into PCV**
  - In injection (4/25)
- **Flooding of PCV after sealing leaks**
  - Studying
- **Securing heat exchange function**
  - Work for secondary-loop piping
- **Improving work environment**
  - High radiation contamination is hampering the work to restore reactor cooling.

### Goal of STEP 2 (April through June)
- **Reliability improvement in injection operation**
  - Injecting freshwater via SFP coolant clean up line
  - Switching from freshwater injection via SFP coolant clean up line to cooling circulation
- **Circulating cooling with H₂**
  - Planned

### Goal of STEP 3 (April through June)
- **Increase and accumulation of radioactive water**
  - High level of radioactive waste water is accumulating in the R/B, T/B and W/B of each unit. (about 92,000m³ [5/31]).

### Goal of STEP 4 (April through June)
- **Storing low level radioactive water**
  - Storing low level radioactive water. Decreasing the amount of radioactive water.

### Perspective of mitigating ground contamination
- **Scattering of radioactive materials to the radioactive water**
  - Radioactive iodine: 131I, and cesium: Cs-134, 137, were detected from the subdrain, underground water collected and controlled in the facility, and the well water in the Fukushima district ([6/14]).

### Goal of STEP 5 (April through June)
- **Removing of debris**
  - Removal of debris using remote-controlled heavy machine in progress (4/10-)
- **Designing**
  - Under construction [5/13-] Planning

### Goal of STEP 6 (April through June)
- **Enhancement of countermeasures against aftershocks, etc.**
  - Countermeasures against tsunami
  - Planning

### Water temperature of SFP

<table>
<thead>
<tr>
<th>Pool</th>
<th>Water temperature of SFP</th>
<th>Instrument failure</th>
<th>Below the lower end of gauge</th>
<th>Operate</th>
<th>Operating</th>
</tr>
</thead>
</table>

### Environmental effect in the vicinity of the station
- **Air dose rate**
  - At the NPS border (Monitoring Post): 39B s/r/h at the south side of the office building. 14 s/r/h at the wet gate [6/5-6/6].
- **Some radioactive materials (I, Cs, Pu, Am and Sn) have been detected in the soil sampled at the site.**
- **Radioactive materials have been detected in samples collected from underground water and also seawater at or near the site.**

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This table summarizes the status of countermeasures for restoring from the accident at Fukushima Daiichi Unit 1 through 4 as of June 8th, 2011. The table provides details on the status of each unit, including the status of injection, cooling, and other operational details. The data is provided by JAIF and includes information on the type of plant, operation status, and specific actions taken to address the consequences of the accident. The table is comprehensive and covers multiple aspects of the reactor's operation, including cooling systems, radioactive material management, and environmental impact assessments.
1. TEPCO’s analysis [announced on 5/15, 23]
2. TEPCO estimated that there was no severe damage to the fuel in the Unit 4 SFP based on the concentration of radioactive materials in the pool and the pictures of the pool. [4/13, 28, 29]
3. Rough estimate by TEPCO [announced on 5/31]

[Source]
NISA: News Release, Press conference
TEPCO: Press Release, Press Conference

[Significance judged by JAIF]
- Low
- High
- Severe (Need immediate action)

[Progress of countermeasures]
- Completed
- Under construction
- To be done (including studying and manufacturing)

[Abbreviations]
- SFP: Spent Fuel Storage Pool
- EDG: Emergency Diesel Generator
- RPV: Reactor Pressure Vessel
- PCV: Primary Containment Vessel
- R/B: Reactor Building
- T/B: Turbine Building
- W/B: Waste Building
- RHR: Residual Heat Removal system
- CST: Condensate water Storage Tank
- Hx: Heat exchanger
- NPS: Nuclear power station