Additional Report of the Japanese Government to the IAEA
– The Accident at TEPCO’s Fukushima NPSs –
(Second report)

September 2011
Nuclear Emergency Response Headquarters
Introduction

Since June, each unit of Fukushima Dai-ichi NPS has been making a stable progress; the amount of released radioactive materials and the radiation exposure of workers have been significantly reduced, and the restoration from the accident has been steadily proceeding with Step 2, which sets as its target “the release of radioactive materials is under control and the radiation dose is being significantly held down”.

Meanwhile, off-site actions such as decontamination of the surrounding areas are being taken, and at the same time, an on-site plan after the settlement of the accident is also being developed.

Further, as a means to respond to the lessons, establishment of a renewed safety regulatory and administrative system has been clearly announced.

Developments of these situations are described as follows.
Major Actions taken since June

(1) Each unit of Fukushima Dai-ichi NPS has been making a stable progress, and the amount of released radioactive materials has been significantly reduced.

(2) Radiation exposure has also been significantly reduced.

(3) Efforts to settle the accident have been made to reach Step 2.

(4) Establishment of a renewed safety regulatory and administrative systems has been clearly announced.

(5) Comprehensive safety assessments on the safety of nuclear power stations (stress tests) will be conducted.

(6) Off-site actions such as decontamination are being actively taken. (Chapter 2)

(7) An on-site plan after the settlement of the accident is now being developed. (Chapter 3)

(8) More detailed comprehension and organization of the facts that have been found so far are being made.
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5. Efforts on the comprehensive safety assessments (stress tests) of NPS

6. Comprehension and organization of other facts
1. The stable condition of each unit of Fukushima Dai-ichi NPS and reduction of release of radioactive materials
The current situation of each unit of Fukushima Dai-ichi NPS

(1) Unit 1
- Cooling with water at a rate of approximately 3.6 m$^3$/h → Stably remaining below 100° C at present

(2) Unit 2
- Cooling with water at a rate of approximately 3.8 m$^3$/h → Stably remaining below 130° C at present

(3) Unit 3
- Cooling with water at a rate of approximately 7.0 m$^3$/h → Stably remaining below 120° C at present
## Status of Units 1, 2 and 3 of Fukushima Dai-ichi NPS

(As of August 31)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Unit 1</th>
<th>Unit 2</th>
<th>Unit 3</th>
</tr>
</thead>
</table>
| **Status of water injection to the reactor** | Fresh water feeding by feed water system  
Flow rate: 3.6m³/h | Fresh water feeding by feed water system  
Flow rate: 3.8m³/h | Fresh water feeding by feed water system  
Flow rate: 7.0m³/h |
| **Reactor Water Level** | Fuel range A: Downscale  
Fuel range B: -1,650mm | Fuel range A: -1,850mm*  
Fuel range B: -2,200mm* | Fuel range A: -1,350mm*  
Fuel range B: -1,850mm* |
| **Reactor Pressure** | 0.017 MPa g(A)  
- MPa g(B) | 0.014 MPa g(A)  
- MPa g(B) | -0.187 MPa g(A)  
-0.100 MPa g(B) |
| **Temperature around the reactor vessel** | Temperature in feed-water nozzle: 92.2 ºC  
Temperature at reactor vessel bottom: 87.4 ºC | Temperature in feed-water nozzle: 106.9 ºC  
Temperature at reactor vessel bottom: 113.5 ºC | Temperature in feed-water nozzle: 118.6 ºC  
Temperature at reactor vessel bottom: 109.2 ºC |
| **Pressure in D/W, S/C** | D/W: 0.1259 MPa abs  
S/C: 0.105 MPa abs | D/W: 0.115 MPa abs  
S/C: Downscale | D/W: 0.1015 MPa abs  
S/C: 0.1810 MPa abs |
| **Status** | Each plant receives electricity from external power supplies. The process is carried on ensuring reliability of cooling function by installing temporary emergency diesel generators and the seawater pump etc. |

* These data may be modified when TEPCO makes evaluates them.
Units 1, 2 and 3
(Current Temperature Condition of the RPV Bottom)
(1) The amount of released radioactive materials has been significantly reduced.
   - Initially high levels of released materials
     \(10^{15} - 10^{16} \text{ Bq/h}\)
     \(\rightarrow\) Currently low level \(10^8 \text{ Bq/h}\)

(2) The preventive measure for discharging into the sea has been strengthened.
   - Implementing measures such as pit closure and silt fence installation

(3) The environmental monitoring system has been enhanced.
Fukushima Dai-ichi NPS: Trends in the Airborne Concentration of Radioactive Materials
Air Dose Rate Map
(As of August 11, 2011)
The state of enhancement measures to prevent contaminated water from flowing out and mixing with the sea.
Monitoring around the Fukushima Dai-ichi NPS

Northern Side of the Water Discharge Canal of 5 and 6

Near the Shallow Draft Quay

Inside the Water Intake Channel (Northern Side) for Units 1 to 4

At Unit 2 (Outside the Silt Fence)
(1) Coordination with concerned ministries and agencies, local government officials and the nuclear operator in the August 2 “Monitoring Coordination Meeting.” A Comprehensive Monitoring Plan was developed and air dose rates, etc. were systematically measured.

(2) The concentration of radioactive materials in the dust above the sea, seawater, and soil of the seabed off the coast of Miyagi, Fukushima, and Ibaraki Prefectures, etc. has been continuously measured.
2. Reduction of radioactive exposure
(1) Radiation exposure doses for workers (external and internal doses) have been significantly reduced; the value 22.4 mSv in average in March was reduced to 3.1 mSv in average in May.

(2) In March, there were six workers whose exposure dose exceeded the 250 mSv emergency dose limit for workers (among them, the maximum exposure dose was approximately 670 mSv).
The “Fukushima Prefecture Health Monitoring Survey,” targeting the approximately two million residents of Fukushima Prefecture, has been started.

- A basic survey is being implemented based on records of behavior.
- Then, a detailed survey will be implemented based on the basic survey (expected to target approximately 200,000 people).
- Ultrasonography of the thyroid gland is being conducted for all Fukushima residents 18 years of age or younger.
3. Transition to Step 2 for the settlement of the accident
Confirm the following to complete Phase 1 and transition to Phase 2 on July 19:

- The trend of radiation dose is steadily reducing.
- The cooling of the reactors and spent fuel pools is progressing.
- Processing of accumulated water is progressing.
### Current Status of “Roadmap towards Restoration from the Accident at Fukushima Dai-ichi NPS, TEPCO” (Revised edition)

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<th>Issues</th>
<th>As of Apr. 17</th>
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<th>Step 2 (around 3 to 6 months after achieving Step1)</th>
<th>Mid-term issues (around 3 years)</th>
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<td>Cooling by minimum injection rate (injection cooling)</td>
<td>Circulating water cooling (start) ☆</td>
<td>Continuous cold shutdown condition</td>
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<td>Consideration and preparation of reuse of accumulated water</td>
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<td>Protection against corrosion cracking of structural materials*</td>
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<td>Nitrogen gas injection</td>
<td>Nitrogen gas injection (continued)</td>
<td>*partially ahead of schedule</td>
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<td>Improvement of work environment ☆</td>
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<td>Start of removal work of fuels</td>
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<tr>
<td>I. Cooling</td>
<td>Fresh water injection</td>
<td>Reliability improvement in injection operation / remote-control operation *ahead of schedule</td>
<td>Remote-controlled injection operation</td>
<td>Installation of full-fledged water processing facilities</td>
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<tr>
<td></td>
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<td>Circulation cooling system ☆ (installation of heat exchanger) *partially ahead of schedule</td>
<td>Consideration / installation of heat exchanging function</td>
<td>Continuous processing of accumulated water</td>
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<tr>
<td></td>
<td>(v) Fuel</td>
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<td>Research of processing of sludge waste etc.</td>
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<td>Mitigation of contamination in the ocean</td>
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<td>Sub-drainage management with expansion of storage / processing facilities</td>
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<td>Design / implementation of impermeable wall against groundwater</td>
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<td>Mitigation of contamination of ground water</td>
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<td>Establishment of impermeable wall against groundwater</td>
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<td>Dispersion of inhibitor (continued)</td>
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<td>Mitigate scattering</td>
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<td>Removal of debris</td>
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<td>Installation of reactor building cover (Unit 1) ☆</td>
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<td>Consideration of reactor building container</td>
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<td>Removal of debris (top of Unit 3 &amp; 4 RB)</td>
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<td>Start of installation work of reactor building container</td>
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<tr>
<td>II. Mitigation</td>
<td>Storing water with low radiation level</td>
<td>Installation of storage / processing facilities ☆</td>
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<td>Consideration of method of impermeable wall against groundwater</td>
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<td>Atmospheric/Soil</td>
<td>Dispersion of inhibitor</td>
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<td>Removal of debris (continued)</td>
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<td>Start of installation work of reactor building container</td>
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Overview of Major Countermeasures in the Power Station as of August 17

Underline: deleted countermeasures, red colored: newly added countermeasures, ☆: already reported to the government

1. Reactor building cover (5, 50, 54, 55, 84)☆
2. Full-fledged container (50, 56)
3. Cooling of spent fuel pool by external water injection (18, 22, 28)
4. Lower the amount of steam generated (4)
5. Maintain and enhance countermeasures in Step 1 if needed (17)
6. Nitrogen gas injection (2, 11, 15)☆
7. PCV venting (with filtration) (10)
8. Flooding up to top of active fuel (3, 5)
9. Installation of heat exchangers (13)
10. Injection of fresh water with pumps (1)
11. Processing of sub-drainage water after being pumped up (36)
12. Sealing the leakage location (6, 16)
13. Prevent contamination of groundwater (66, 67); Consideration of impermeable wall against groundwater (68, 83)
14. Improvement of life/work environment of workers (74, 75); improvement of site environment (76)☆
15. Enhancement of radiation control and medical system (77, 78, 79, 80); implementation of staff training/personnel allocation systematically (85)
16. Install various interconnecting lines of offsite power (8);
17. Enhance countermeasures against tsunami (69, 70);
18. Consideration of reinforcement work of each Unit (71);
19. Various countermeasures of radiation shielding (72, 73)
20. Preventive measures against leakage of high radiation-level water (29)
21. Prevent contamination in the ocean (64)
22. Isolation of high-level radioactive water (65)
23. Circulation cooling of spent fuel pool (23, 24, 25, 27)☆
24. Processing high radiation-level water (31, 38, 43)☆
25. Cooling at minimum water injection rate (7, 12, 14)
26. Reuse of processed water (45); implement circulating water cooling☆
27. Consideration of full-fledged water processing facilities (82)
28. Storage and management of sludge waste etc. (81)☆
29. Storage of high radiation-level water (30, 32, 37, 39, 42)☆
30. Desalination, Decommodation, Adsorption, Oil separation
31. Storage/process of low radiation-level water (33, 34, 35, 40, 41, 44, 46)
32. Storage tanks, mega floats, Process: decontamination by zeolite
33. Centralized Waste Processing Building
34. Additional installation of Tank
35. Seismic assessment (20), Continued monitoring (21), (Unit 4) Installation of supporting structure under the bottom of spent fuel pool (26)☆
36. Dispersal of inhibitor (44, 48, 52)
37. Removal of debris (49, 53)
38. Consideration of countermeasures against contaminated soil (51)
39. Continue/Enhance monitoring (55-62), Consideration/Start of full-fledged decontamination (53)
Circulating Injection Reactor Cooling System

Storage and treatment of high contaminated water

<table>
<thead>
<tr>
<th>Classification</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>High contaminated water</td>
<td>Red</td>
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<tr>
<td>Treated water (salt water)</td>
<td>Green</td>
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<tr>
<td>Treated water (condensed)</td>
<td>Blue</td>
</tr>
<tr>
<td>Processed water (fresh)</td>
<td>Black</td>
</tr>
<tr>
<td>Fresh water</td>
<td>Gray</td>
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</tbody>
</table>
Operation factor rate & amount processed
Accumulated treatment amount (tons), facility operation factor (%)

Management of the water level of the accumulated water within the turbine building
Spent Fuel Pool: Alternative Cooling System (Unit 1)
Main Issues in Step 2

(1) Issue 1
Cooling the reactors: Evaluation of necessary flow rate of injecting water to achieve “cold shutdown condition”.

(2) Issue 2
Cooling the spent fuel pools: Achieving more stable cooling in all of the Units 1 through 4.

(3) Issue 3
Treating accumulated water: Decreasing the total amount of accumulated water and increasing the treatment volume to increase the water injection into the reactors.

(4) Issue 4
Shielding groundwater: Preventing the spread of contamination into the sea.

(5) Issue 5
Preventing the spread of radioactive materials in the atmosphere/soil: Mitigation of release of radioactive materials.
4. Establishment of a renewed safety regulatory and administrative systems
The establishment of a “Nuclear Safety and Security Agency” (provisional name) was approved by the Cabinet meeting on August 15.

- Intent: to separate regulation from utilization
- Positioning of the agency: as an external agency of the Ministry of Environment starting in April 2012
- Necessary legislation: Established “Task Force for the Reform of Nuclear Safety Regulatory Bodies” (on August 26)
(1) Centralize nuclear safety regulatory roles, which thus far have been divided among various ministries

(2) Develop a crisis management structure for the first response system, such as positioning experts to respond to emergencies

(3) Supervise the environmental monitoring function, including SPEEDI

(4) Ensure high-quality staffing, including establishment of an “International Nuclear Safety Training Institute” (provisional name)
5. Efforts on the comprehensive safety assessments (stress tests) of NPS
Comprehensive safety assessments will be conducted based on new procedures and rules, with reference to the stress tests introduced in Europe, for enhancing the safety of nuclear power stations and ensuring safety and reliance for citizens and residents.

(1) Preliminary assessment:

The nuclear power stations, that are under shutdown due to regular inspections and are prepared for start-up, will be successively assessed on the safety margins of their facilities and equipment essential for safety against beyond-design-basis events.

(2) Secondary assessment:

Taking into account the implementation status of stress tests in Europe and what have been reviewed by the Investigation Committee on the Accidents at the Fukushima NPS, all nuclear power stations including the stations under operation and those evaluated in the preliminary assessment will be assessed on the comprehensive safety margins.
Values prescribed in the NSC Regulatory Guides and technical standards are used as allowable limits in preliminary assessment. Values exceeding allowable limits are applicable if it is technically verified in the preliminary assessment that the structure’s integrity and functions are maintained. Factual assessment is conducted during secondary assessment to obtain values that cause the loss of structural integrity and functions.
6. Comprehension and organization of other facts
(1) The Tohoku District-Off the Pacific Ocean Earthquake and the resulting tsunamis
Tohoku District-Off the Pacific Ocean Earthquake and resulting tsunamis

- A **large slip of 55m to not quite 70m** was estimated for the Tohoku earthquake in the shallow part of the plate boundary along the Japan Trench.

- There is a high probability that
  - the Tohoku earthquake was a giant earthquake of **M9** in viewpoint of **long period** ground motions;
  - however, it had the same characteristics as an **M8 earthquake** in viewpoint of **short period** ground motions.

- It is likely that
  - the large slip in the shallow area along the Japan Trench,
  - and the overlap effects of tsunami waves due to rupture delays associated with the interlocked rupturing of multiple source areas had large effects on tsunami water levels.
Source rupture process (Fault model)

Model proposed by GSI and JCG
- data: land area GPS observation and seafloor crustal deformation observation
- the maximum slip: 55 m

Model proposed by JNES
- moment magnitude: Mw 9
- location of large slip: along the Japan Trench

Model proposed by Irikura
- the number of asperities: 5
- concentrating in the deep part west to the hypocenter
- total energy: (as of moment magnitude) Mw 8.5

- There is a high probability that the Tohoku earthquake was a gigantic earthquake of M9 in terms of long-period ground motions,
- yet hat at the same time characteristics of an earthquake of M8 in terms of short-period ground motions.
Tsunami source rupture process
(Tsunami source model)

- Analysis results using tsunami source model: Trends in distribution of slips (a~e) and the aggregate slips (f).
- Comparison of simulated tsunami waveform (blue) and observed one (red).

(a) 30 seconds after the earthquake occurrence
(b) 90 seconds after the earthquake occurrence
(c) 150 seconds after the earthquake occurrence
(d) 210 seconds after the earthquake occurrence
(e) 270 seconds after the earthquake occurrence
(f) aggregate slips

Result of water level simulation using tsunami source model:
- Offshore areas: The simulated tsunami waveforms being consistent with the shape of the short-period ones of the observed first wave.
- Nuclear sites: The simulated tsunami waveforms being consistent with observed ones.

⇒ Amount of large slips and asperities:
Locating in the shallow areas (400 km) along the Japan Trench, and resulting in the maximum slip of above 70 m.

⇒ Delay in rupture start time of multiple seismic source areas:
It is likely that overlap effect of tsunami waves due to the rupture delay had a great impact on tsunami water levels.

- Offshore areas:
  - G802
  - Time elapsed after the occurrence of the earthquake:
    - Wave height (m)
    - Simulation (J13)
    - Observed

- Nuclear sites:
  - Fukushima Dai-ichi NPS

- Tokai Dai-ni NPS

- Offshore areas:
  - Off the southern coast of Iwate prefecture
  - Wave height (m)
  - Simulation (J13)
  - Observed

- Nuclear sites:
  - Fukushima Dai-ichi NPS
  - No data due to failure of tide gauge

- Nuclear sites:
  - Onagawa NPS

- Nuclear sites:
  - Tokai Dai-ni NPS
(2) Initial Release of Radioactive Materials in the Accident of Fukushima Dai-ichi NPS
Measurement Results Dose Rates by Monitoring Car at Fukushima Dai-ichi NPS
Release of Radioactive Materials: Initial Release Trends (Bq/h)
(3) The Situation of Each Unit of Fukushima Dai-ichi NPS
The Situation at Each Unit of Fukushima Dai-ichi NPS
(Field situations obtained from interviews with workers, etc.)

(1) Rubble strewn by tsunami
   → Access routes cleared to ensure fire engine access
      (e.g. Unit 1)

(2) Darkness
   → Work on vent valves for the primary containment
      vessel proceeded by torchlight (e.g. Unit 1)

(3) Shortage of electric power
   → Car batteries from employees’ cars were collected to
      operate valves for alternative water pumps (e.g. Unit 3)

(4) Effects of hydrogen explosion
   → The initial alternative pumping lines burst, and work
      started on constructing new lines (e.g. Unit 2)
Unit 1: Spent Fuel Pool Evaluation Results
Unit 2: RPV Temperature Transition
Unit 2: Spent Fuel Pool Evaluation Results
Unit 3: RPV Temperature Transition

Warning:
For each measuring instrument, some measuring instruments were affected by the earthquake and subsequent developing events to exceed the normal operating environmental condition, and thus there exist some measuring instruments with the possibility of not being measured correctly. To comprehend the uncertainty of such measuring instruments as well, we have made a comprehensive judgment paying attention to the variation trend as well by the use of information available from multiple measuring instruments.
Unit 3: Spent Fuel Pool Evaluation Results
Unit 4: Spent Fuel Pool Evaluation Results

March 15: confirmation of building damage (assuming 1m water level).

March 16: confirmation of water level from helicopter (water level decreased by 2 to 3 m from the top of fuel rack).

Assuming water inflow from well side after decrease of pool water level.

Transition of water level combined with pool water, well water, and DSpit water.

Assuming that gate is closed after recovery of pool water at the time of water injection on April 22.

Full Capacity

Water level (top of fuel rack = 0m)

Water temperature (degree C)


0 10 20 30 40 50 60 70 80 90 100

0m 1m 2m 3m 4m 5m 6m 7m
Unit 4: Installation of Support Structures at the Bottom of the Reactor Building’s Spent Fuel Pool
Situation at the Reactor Buildings of Fukushima Dai-ichi NPS, Units 1 to 4

Unit 1 - 4

Unit 1

Unit 2

Unit 3

Unit 4
(4) Situation of Other NPSs Affected by the Tohoku District-Off the Pacific Ocean Earthquake and the resulting tsunamis (Event Tree)
## Transitional Changes in the Accident According to the Function Event Tree

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<tr>
<th>No.</th>
<th>Event</th>
<th>Accident</th>
<th>Reactor shutdown</th>
<th>AC power supply</th>
<th>Core cooling</th>
<th>Removal of decay heat from containment vessel</th>
<th>Core status</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Earthquake and tsunami</td>
<td>Reactor scrammed</td>
<td>External power</td>
<td>Power supply interchangeability</td>
<td>Main steam/water supply/condensation lines</td>
<td>Turbine-driven injection lines</td>
<td>Motor-driven pumps (other than ECCS), (MUWC, etc.)</td>
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<td>②</td>
<td>Accident shutdown</td>
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**Notes:**
- ECCS: Emergency Core Cooling System
- HPCS: High Pressure Core Cooling System
- LPCS: Low Pressure Core Cooling System
- LPCI: Low Pressure Core Injection System
### Situation Transition in the Accident at Other NPSs (Fukushima Dai-ni NPS)

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<th>Reactor shutdown</th>
<th>Off-site power supply</th>
<th>Emergency DG</th>
<th>Interchange of power supply</th>
<th>Main steam/condensate systems</th>
<th>Turbine driven injection system (ECCS, HPCS, LPC)</th>
<th>Motor driven injection system (other than ECCS) (such as MUXC and depressurization operation) (SRV)</th>
<th>Heat removal with RHR</th>
<th>Recovery of RHR function (including functional recovery of alternative power supply and seawater pumps)</th>
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<td>Interchange of power supply</td>
<td>Main steam/condensate systems</td>
<td>Turbine driven injection system (ECCS, HPCS, LPC)</td>
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<td>Heat removal with RHR</td>
<td>Recovery of RHR function (including functional recovery of alternative power supply and seawater pumps)</td>
<td>PCV vent (before core damage)</td>
<td>Cold shutdown, core damage, PCV damage, etc.</td>
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</table>

* Actuation request was not issued for Unit 3.
Situation Transition in the Accident at Other NPSs (Onagawa NPS)

<table>
<thead>
<tr>
<th>Event that occurred</th>
<th>Reactor shutdown</th>
<th>AC power supply</th>
<th>Core cooling</th>
<th>Removal of decay heat from the PCV</th>
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<td></td>
<td>Turbine driven injection system (RJC, HPCI (Unit 1 only))</td>
</tr>
</tbody>
</table>

While Units 1 and 3 were in power operation, Unit 2 was in start-up operation (where the reactor was not critical and the reactor water temperature was less than 100 degrees Celsius) right after the earthquake.

* Actuation request was not issued for...
### Situation Transition in the Accident at Other NPSs (Tokai Dai-ni NPS)

<table>
<thead>
<tr>
<th>Event that occurred</th>
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- **(Succeeded)**
- **(Failed)**
- **(Actuated)**
- **(Lost)**
(5) Response regarding Evacuation Areas, etc
4. Response regarding Evacuation Areas, etc

(1) Restricted Area: On April 22, a Restricted Area was established and all access to the area was prohibited. Now, temporary access is allowed for residents and those acting in the public interest.

(2) Deliberate Evacuation Areas: On April 22, Deliberate Evacuation Areas were established in areas where dose was increasing. Most residents had already evacuated.

(3) Evacuation-prepared Areas in Case of Emergency: On April 22, areas for which preparations must be made to evacuate in the event of an emergency were established for those areas where such preparation was required. Now, efforts to lift such restrictions are actively being made.

(4) Specific Areas Recommended for Evacuation: In June, Specific Areas Recommended for Evacuation were established for areas with high dose. The number of such areas is currently 227 (245 households).
Map of Restricted Area, Deliberate Evacuation Areas, Evacuation-prepared Areas in Case of Emergency, Specific Areas Recommended for Evacuation

(As of August 3, 2011)
(6) Measures to Address Agricultural Products, etc.
## 7. Measures to Address Agricultural Products, etc.  
(Provisional Regulatory Values)

<table>
<thead>
<tr>
<th>Nuclide</th>
<th>Provisional regulation values of radioactive materials in food in accordance with the Food Sanitation Act (Bq/kg)</th>
</tr>
</thead>
</table>
| **Radioactive iodine**  
(Representative radio-nuclides among mixed radio-nuclides: $^{151}$I) | Drinking water  
Milk, dairy products*  
Vegetables  
(Except root vegetables and tubers)  
Fishery products | 300  
2,000 |
| **Radioactive cesium**                  | Drinking water  
Milk, dairy products  
Vegetables  
Grains  
Meat, eggs, fish, etc. | 200  
500 |
| **Uranium**                             | Infant foods  
Drinking water  
Milk, dairy products  
Vegetables  
Grains  
Meat, eggs, fish, etc. | 20  
100 |
| **Alpha-emitting nuclides of plutonium and transuranic elements**  
(Total radioactive concentration of $^{238}$Pu, $^{239}$Pu, $^{240}$Pu, $^{241}$Pu, $^{241}$Am, $^{242}$Cm, $^{243}$Cm, $^{244}$Cm) | Infant foods  
Drinking water  
Milk, dairy products  
Vegetables  
Grains  
Meat, eggs, fish etc. | 1  
10 |

*) Provide guidance so that materials exceeding 100 Bq/kg are not used in milk supplied for use in powdered baby formula or for direct drinking.
(1) Tea: Tea, which appears to have a large amount of radioactive cesium, is “deeply cropped.”

(2) Beef: There was some beef from cattle which appear to have eaten straw containing radioactive cesium. After this discovery, information calling for attention while handling rice straw was distributed.

(3) Rice: In areas with high concentrations of radioactive cesium in the soil, a preliminary survey was implemented in the step before harvesting. The concentration measurements after harvesting are planned based on the survey results. No radioactive materials exceeding the provisional regulatory values have been detected (as of August 31).