Main Points of the Progress Status of the “Roadmap for Immediate Actions for the Verification of and Restoration from the Accident at Fukushima Dai-ichi Nuclear Power Station”

June 17 2011
Nuclear Emergency Response Headquarters

Implementation Timelines and Achievement Status of Each Action as of June 17

1. Government’s support and confirmation of safety
   
   (1) Cooling the reactors
   
   Achieve stable cooling by the end of Step 1
   
   **(Cooling the reactors)** The amount of water to be injected is minimized to reduce contaminated water made. Operation of the Circulation Cooling System is begun. Nuclear and Industrial Safety Agency (NISA) checked the operation.
   
   Largely proceeding according to plan
   
   **(Nitrogen injection)** Following Unit 1, nitrogen is planned to be injected into Primary Containment Vessels of Units 2 and 3 from the end of June or beginning of July. NISA checks the safety.
   
   Injection conducted for Unit 1, preparing to conduct for Units 2 and 3
   
   **(Improving indoor environment)** Following Unit 1, works to improve the environment inside the reactor buildings of Units 2 and 3 are begun. NISA conducted an environmental impact assessment.
   
   Proceeding according to plan for Units 1 and 2, preparing for Unit 3
   
   **(Core analysis)** NISA analyzed the reactor core. Details were described in the report to the IAEA.
   
   Analysis completed

   (2) Cooling the Spent Fuel Pools
   
   Achieve stable cooling by the end of Step 1
   
   The Circulation Cooling System was installed for Unit 2. The system is scheduled to be installed for Unit 3 by the end of June. NISA checks the safety. Following Units 2 and 3, the system is planned to be installed for Units 1 and 4 in order.
   
   Largely proceeding according to plan

   (3) Containment, storage, treatment and reuse of water contaminated by radioactive materials
   
   **(Accumulated water)**
   
   Start full-scale treatment by the end of Step 1
   
   Treatment of contaminated water is begun after implementing leakage prevention measures, securing storage for the water to be transferred, installing water treatment facilities, etc. NISA checked the safety. It is considered how to storage and treat waste sludge with high radioactive concentration left from the water treatment process.
   
   Largely proceeding according to plan

   (4) Preventing expanded contamination of subsurface water
   
   Prevent expanded contamination of subsurface water
   
   Tokyo Electric Power Co. Inc. (TEPCO) is considering blockage walls for subsurface water based on the situation of water flow and contamination by radioactive materials of subsurface water.
   
   Currently being explored

N.B.: Frames with solid line indicate actions currently in implementation, those with dotted lines indicate actions under consideration.
(5) Mitigating radioactive materials in the atmosphere and soil

- **Mitigate spread of radioactive materials**
  - **(Covering reactor buildings)** Preparation works of a cover for the Unit 1 reactor building are currently being conducted for installation. Installation will be begun after NISA confirm the safety. | Currently being implemented
  - **(Anti-scattering agent)** It was sprayed from April 1 on a trial basis, and is sprayed from April 26 on full-scale. | Currently being implemented
  - **(Assisting deployment of robots for rubble removal)** Consideration of additional deployment of remote-controlled robots is assisted. | Currently being implemented

(6) Measures against aftershocks

- **Prevent spread of emergency**
  - **(Seismic measures)** NISA confirmed that the seismic safety is currently ensured for Units 1 and 4. NISA is investigating the seismic safety of Units 2 and 3. | Largely proceeding according to plan
  - **(Anti-tsunami measures)** Construction of tide embankments to prevent submergence is underway. Temporary diesel generators were transferred to higher ground. | Currently being implemented
  - **(Verifying diverse radiation shielding measures)** TEPCO is implementing such measures against various anticipated risks as piping and installation of unmanned compressors, etc. for use of slurries. | Currently being implemented

(7) Ensuring the safety of the working environment, improve living conditions and health management

- **Enhancement of exposure management, improvement of environment and enhancement of health management**
  - **(Measures for exposure)** Due to some workers exceeding the dose limit, exposure management is enhanced under the guidance from NISA and Ministry of Health, Labor and Welfare. Recurrence prevention measures are thoroughly implemented. | Currently being implemented
  - **(Living conditions of workers)** Living conditions of workers are improved by provision of meal boxes and shower facilities, installation of a temporary dormitory and so on. | Currently being implemented
  - **(Health management)** Building a database of long-term health management for workers who engaged in emergency work is planned to be concretely examined by an experts committee. | Currently being explored

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2. International cooperation

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<th>(Accepting experts, providing materials and equipment, etc) Exchange of views and information are conducted among nuclear experts, relevant ministries, and relevant institutions.</th>
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<td>Currently being implemented</td>
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<th>(Strengthening international reporting) Relevant ministries carried out information provision cooperatively and adequately, including the one regarding the release and management of radioactive materials, to foreign countries, international organizations and foreign media.</th>
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<td>Continuously being implemented</td>
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3. Investigation and verification of the accident

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<th>(IAEA Ministerial Meeting) Nuclear Emergency Response Headquarters summarized the analysis of accident causes, responses to the accident, lessons learned from the accident, and measures related to the accident. The Headquarters submitted them to the IAEA on June 7.</th>
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<td>IAEA report completed</td>
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<th>(Investigation and verification of the accident causes) The Cabinet decided to set up the investigation and verification committee for the accidents at TEPCO’s Fukushima Nuclear Power Stations in order to investigate and verify causes of the accidents and damages thereof, and to recommend policies. The first meeting was held on June 7.</th>
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