

TEPCO NUCLEAR SAFETY REFORM PLAN PROGRESS REPORT 1ST QUARTER FY 2014

EXECUTIVE SUMMARY

Introduction

TEPCO established its Nuclear Safety Reform Plan (full text of the plan may be viewed at http://www.tepco.co.jp/en/press/corp-com/release/2013/1235871_5130.html) on March 29, 2013, and since that time has been issuing quarterly reports on its progress toward meeting the plan's goals. This is the executive summary of the report for the 1st quarter of the 2014 fiscal year, April-June 2014. Previous quarterly reports may be viewed at http://www.tepco.co.jp/en/press/corp-com/release/2014/1236027_5892.html.

The report describes progress made at each of TEPCO's three nuclear power stations, and goes on to describe progress made on recommendations generally applicable to its management and operations.

PROGRESS AT INDIVIDUAL POWER STATIONS

Fukushima Daiichi Nuclear Power Station

Establishment of new entity exclusively devoted to decontamination and decommissioning: Following a recommendation of the NRMC, TEPCO established the Fukushima Daiichi Decontamination and Decommissioning Engineering Company. The purpose in establishing a distinct entity is to focus appropriate skills and accountability in a coherent organizational structure that will report directly to TEPCO's president. This represents TEPCO's recognition that the skills needed for the long-term D&D work may be significantly different from those needed to manage operational power stations. Heading the new company is Naohiro Masuda, former superintendent of the Fukushima Daiichi Nuclear Power Station, who acquired the title of TEPCO's Chief Decommissioning Officer. Vice presidents will include representatives of the manufacturers of nuclear reactors.

Removal of fuel from Unit 4 spent fuel pool: This process, which began in November, continued safely and on schedule. Of the 1331 spent fuel assemblies in the pool, 1166 units (approximately 87 percent) had been removed through the end of the quarter, with 165 remaining. Completion is expected by the end of the calendar year.

Water Management: There was activity on several fronts in water management during the quarter:

- **ALPS treatment system:** After replacement of gaskets and other parts with components that are more likely to withstand exposure to radiation, by June 22 all three lines of the ALPS water treatment system were placed back into operation. About 20 percent of the total volume of stored contaminated water has been treated.
- **Decline in leakage incidents:** The incidents of water leakage from tanks and hoses have declined significantly, though they have not been entirely eradicated. This decline is the result of a variety of countermeasures adopted to address leaks and overflows.
- **Groundwater management:** Significant progress was made in the implementation of various strategies to address groundwater, including progress on the construction of the seaside impermeable wall, and the beginning of construction on the frozen-soil barrier (“ice wall”). In addition, the groundwater bypass was placed in operation and, for the first time, water from the bypass was discharged into the sea with the approval of the various authorities as well as the local fishermen.
- **Comprehensive water management plan:** TEPCO is continuing to develop and refine its comprehensive water management plan, as recommended by the NRMC and others, and remains open to input from all interested parties. We will report on its status to the appropriate entities in the central government and the communities surrounding the Fukushima Daiichi facility.
- **Benchmarking and Technical Assistance:** As recommended by the NRMC, TEPCO is benchmarking its progress against other industry leaders and to that end it entered into a cooperation agreement with Sellafield (UK) for both operational and technical exchanges of information and assistance regarding D&D.

Worker Safety: A fatal accident occurred on March 28, just prior to the beginning of this quarter. Investigation into the cause of the accident, which involved the cave-in of a trench dug to allow worker access to pipes alongside one of the buildings, was the result of insufficient training. Consequently, measures to enhance safety management education are being implemented, including participations in training sessions held outside TEPCO in order to acquaint workers with the best practices of other companies and other industries.

Fukushima Daiichi Nuclear Power Station

Fukushima Daiichi NPS remains in safe cold shutdown, its status since the March 2011 tsunami. The transfer of fuel from its reactors continued during the quarter, and the transfer of all 764 fuel assemblies from Unit 1 was completed on July 10.

Kashiwazaki-Kariwa Nuclear Power Station

TEPCO has applied for government permission to restart Kashiwazaki-Kariwa NPS and continues to make improvements to the facility and take other steps in anticipation of its eventually being placed back online.

Regulatory Conformity: Units 6 and 7 were examined to ensure their conformity with new regulatory standards. The examination included:

- A performance test for Unit 7's filtered venting equipment. TEPCO confirmed that the major functions were secured.
- Installation of a water filling system on top of the primary containment vessel of Unit 6 was completed.
- An underground investigation to evaluate faults was begun May 20. The field data gained from the investigation is under analysis.

Implementation of Lessons Learned from Fukushima Daiichi: As part of the continuing implementation of lessons learned from Fukushima Daiichi, two actions were taken:

- A new sealant has been developed to provide a better seal for the PCV top head flange, and the sealant's good heat resistance and strong overall performance has been confirmed.
- A probabilistic safety assessment of potential external events such as earthquake and tsunami, as well as potential internal events, is being implemented.

PROGRESS IN OVERALL NUCLEAR SAFETY REFORM PLAN

Reform of Top Management:

- The expectations of the top management of the Nuclear Power Division were clearly specified as the "Course of Action for Nuclear Division" and incorporated into the Operation Plan for the current fiscal year.
- TEPCO established key performance indicators (KPI) for self-evaluation: "safety consciousness," "technical skill," and "dialogic skill" based on such international standards as "WANO-PO&C."
- TEPCO assigned five persons to the Nuclear Reform Special Task Force to intensify the state of implementation by the Nuclear Power Division and support promotion of the reform.
- Benchmarking against the best practices of other companies has begun.
- Training sessions on nuclear safety were held for new executive officers and certain other individuals in the Fukushima D&D Engineering Company.
- Face-to-face safety conversations are being held with management and middle-management of the Nuclear Power Division on a continuous basis, and we are examining what further measures may be necessary to support them.

Enhancement of Oversight and Support for Management

- The Nuclear Safety Oversight Office and the Board are cooperating to monitor the executive bodies and to provide instructions to them.
- Corporate officers have been assigned responsibility for nuclear safety, and a Safety Steering Committee with President Hirose as chairman has been established.
- TEPCO has developed a “Change Management Guide” based on global best practices, and has developed appropriate tools to evaluate risks accompanying changes to minimize their effects and resolve problems.

Enhancement of Ability to Propose Defense in Depth

- The first round of the Competition to Enhance Capability to Propose Safety Improvement in FY 2014 was held. There were 83 entries, which is more than twice as much as the total application number of the first round of the Competition in FY 2013.
- Twelve excellent proposals had been made in the last fiscal year, and representatives of the Nuclear Safety Special Task Force visited the three nuclear power stations to help accelerate the pace of their adoption..
- TEPCO has increased staff participation in screening meetings by categorizing them according to accident causes.

Enhancement of Risk Communication Activities: TEPCO has enhanced the number of risk communicators to 37, an increase of 6 from the previous year. Their function is to collect, analyze, and communicate risk information. TEPCO is also planning to add training sessions on communications to the emergency response comprehensive drills it conducts.

Enhancement of Power Station and Head Office Emergence Response Capability:

- Individual and comprehensive training sessions under the Incident Command System framework were implemented repeatedly at individual power stations and at headquarters. These sessions also produced improvements to emergency response procedures.
- TEPCO is developing emergency response scenarios broader than just those associated with earthquakes and tsunamis, and will use these broader scenarios in joint training with local authorities. TEPCO is developing relations with additional external organizations to expand the joint training.

Enhancement of the Emergency Response Capabilities of Individuals Onsite:

- Trial operation of plant monitoring activities by system engineers has been started at Kashiwazaki-Kariwa NPS.
- At Fukushima Daiini NPS, a Direct Management Work Comprehensive Training Skills Competition was held, and emergency response operational ability was confirmed.
- TEPCO has identified the skills that emergency responders will be required to possess, including (but not limited to) such criteria as specific skills, knowledge, and experience.