

## Q3 Progress

- In order to keep our resolution to, "keep the Fukushima Nuclear Accident firmly in mind; we should be safer today than we were yesterday, and safer tomorrow than today; we call for nuclear power plant operations that keeps creating unparalleled safety" we have been promoting nuclear safety reforms since April 2013 and we continue to engage in activities to raise our power stations to the world's highest level of safety.
- At Fukushima Daiichi we are steadily moving forward with decommissioning in a safe manner in accordance with the Mid-and-Long-Term Roadmap Towards Decommissioning of Fukushima Daiichi Nuclear Power Station Units 1 to 4, and making every effort to keep the local communities and society as a whole carefully informed.
- In regards to the application to modify the reactor installation permit for Kashiwazaki-Kariwa Units 6/7, the application documents were reviewed at the 57<sup>th</sup> meeting of the Nuclear Regulation Authority on December 27, and the application to modify the reactor installation permit was approved. We will continue our efforts to help Fukushima recover, decommission Fukushima Daiichi, and provide compensation, and our never-ending pursuit of safety as we strive to further improve the safety and reliability of Kashiwazaki-Kariwa.
- TEPCO has also announced its "Action Plan to combat Harmful Rumors" in order to operate the company from the perspective of the local community.

### Fukushima Daiichi NPS Progress of reactor decommissioning

In preparation for the removal of fuel from the Unit 3 spent fuel pool, we have completed the installation of a Fuel Handling Machine (FHM) (November 12) and a crane (November 20) on the top floor of the reactor building, as well as six out of eight segments of the domed roof (December 20). Fuel removal is planned to commence during FY2018.

We have transferred the accumulated water inside the condensers in the Unit 2 and Unit 3 turbine buildings, and as of November 17 and December 18, all the water had been drained from the Unit 2 and Unit 3 condensers, respectively. Going forward we will continue our efforts to prevent groundwater from flowing into the buildings and gradually reduce the level of accumulated water inside of the buildings with the objective of completing this task during 2020. Completing this task will greatly reduce the risk of a leak of highly concentrated accumulated water from inside the buildings.

In order to improve the work environment at the Fukushima Daiichi site, such as by enabling workers to move around more efficiently, we are considering the introduction of automated electric buses. In order to confirm the route that the automated electric buses take, how obstacles are detected, and how passengers are recognized, employees from TEPCO and contractors took a test ride on a bus for approximately 1.7km at speeds between 5~20km/h. (November).

Fukushima Prefectural Governor Uchibori visited the site on November 15. The governor reviewed the worksite from the top of the Unit 3 reactor building, and offered words of encouragement to site personnel and contractors working at Fukushima Daiichi.



Unit 3 Fuel removal cover (domed roof) installation (December 12)



Automated electric bus (front vehicle) running test (November 13)



Visit to Fukushima Daiichi by Fukushima Prefectural Governor Uchibori (November 15)  
[Left: Field inspection, right: The Governor offering words of encouragement to site personnel and contractors that work at Fukushima Daiichi]

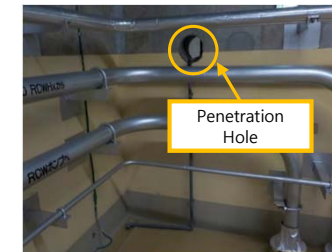


### Kashiwazaki-Kariwa NPS Progress of safety measures

At Kashiwazaki-Kariwa we are moving forward with safety measures based on the lessons learned from, and the experience with, the Fukushima Nuclear Accident. The safety measures are being implemented with a focus on Units 6 and 7 for which an application has been made to modify the installation permit in order to comply with the New Regulatory Requirements.

An application to modify the reactor installation permits for Units 6 and 7 in order to comply with the New Regulatory Requirements was submitted on September 27, 2013. After approximately 150 review meetings and six field inspections, approval to modify the reactor installation permits was received from the Nuclear Regulation Authority on December 27, 2017. Going forward TEPCO shall continue to prioritize safety while meticulously handling the inspections conducted in conjunction with its applications to receive approval of work plans and to modify safety regulations. At the same time, we shall not merely comply with regulatory requirements, but also improve safety through the implementation of voluntary measures. We will also provide our utmost cooperation with the investigations in three areas being conducted by Niigata Prefecture.

After it was discovered that two penetration holes in the firewalls at Unit 2 have yet to be fireproofed (July 2017) all units were inspected for similar problems. As a result it was discovered that 60 locations had yet to be fireproofed (November 2017) and detailed investigation is on-going. Going forward, corrective actions shall be quickly implemented for these locations that have yet to be fireproofed in accordance with the results of this detailed investigation and recurrence prevention measures, such as enlisting the help of an expert (in-house expert) to confirm the quality of the corrective measures, as has been done since December 2015 in the wake of the cable laying problem, shall be implemented without fail.



Hole in a firewall that has yet to be fireproofed (Unit 2 reactor building subfloor)

## 14<sup>th</sup> Nuclear Reform Monitoring Committee Meeting

The 14th Nuclear Reform Monitoring Committee meeting was held on November 20. At this meeting, we reported on the progress status of improvements implemented based on the results of the self-assessment review conducted in FY2016 and gave an update on the activities of the Nuclear Safety Advisory Board (NSAB) that was formed this fiscal year.

The committee commented "forming the habit of performing self assessments is extremely important to enable a culture of self-improvement and learning to permeate throughout the entire organization." In this regard, the committee requested an assessment and report to the committee on the status of improvements made to date concerning those issues that TEPCO has deemed vital.



14<sup>th</sup> Nuclear Reform Monitoring Committee Meeting (November 20)

## Nuclear Safety Reform Plan Progress Report (Management)

- In order to better align the entire organization in regards to nuclear safety reform/improvement activities, we are engaged in efforts to promote understanding of the management model, which is a common basis for these activities, as well as the ideal behaviors for each field of operation ("Fundamentals").
- In response to the comment made during the 14th Nuclear Reform Monitoring Committee meeting about the extreme importance of rooting the habit of self-assessment in order to help a culture of self-improvement and learning to permeate throughout the entire organization, we plan to conduct self-assessments of the following five issues which the company has deemed to be of vital importance: Strengthening the Organization and Governance, Strengthening Human Resource Development, Improving Communication, Enhancing Nuclear Safety Culture, and Improving Internal Monitoring Functions.



### Actions to better align the vectors of the entire organization

Corporate Functional Area Managers (CFAM; Headquarters leaders of activities aimed at achieving the world's highest standards in each functional area) and Site Functional Area Managers (SFAM; CFAM counterparts at power stations) are spearheading action to formulate objectives that should be achieved by each field noted in the management model and identifying important factors for success. CFAM/SFAM are receiving support and guidance from overseas experts knowledgeable about the world's excellence in an effort to improve their skills, and promoting improvements with midterm plans and work plans.

We have also taken action to firmly route the concept of "Operation-Lead," which has made enormous contributions to performance improvements at power stations in the United States. In order to achieve the world's highest levels of safety, operations departments and operators must be instrumental in setting high standards and take the initiative to achieve these goals. It is also necessary that other areas set similar high standards and achieve these goals.

Meetings (to convey issues about the day's tasks that workers should be aware of) in the operations and maintenance departments at Kashiwazaki-Kariwa are broadcast on the company's internal television network to provide an example of how the fundamentals are to be leveraged.



CFMA training (Headquarters)



Leveraging Fundamentals during meetings (Kashiwazaki-Kariwa)

### Initiatives to Improve Safety Awareness



2<sup>nd</sup> NSAB Review Feedback Meeting at the Headquarters



Monitoring of emergency response training by the Nuclear Safety Oversight Office (Fukushima Daiichi)

At the 2<sup>nd</sup> Nuclear Safety Advisory Board (NSAB) meeting (December 4~8) the progress of improvements made in response to issues identified during the 1<sup>st</sup> NSAB meeting was reviewed and Board members conducted interviews and observed field work pertaining to each area, such as operations, maintenance, human resource cultivation, radiological protection, project management and performance improvements.

The Nuclear Safety Oversight Office (NSOO) has confirmed that the power stations and Headquarters have started putting efforts into resolving issues with emergency response procedures and general training that the NSOO has pointed out. At the same time, the Nuclear Safety Oversight Office has requested that issues coordinating between the emergency response headquarters and the field/off-site parties, which were observed by the NSOO during general training, be improved.

### Initiatives to Improve Technological Capability



Marshmallow challenge (Headquarters)



Experiencing safety measures at Kashiwazaki-Kariwa by using virtual reality headsets

A "marshmallow challenge" (game by which teams try to build the tallest self-standing tower out of marshmallows) was held as part of internal communication activities. The goal of the exercise was to convey the message that groups solve problems more effectively than individuals. Forty-seven people including nuclear leaders and new young employees participated. Participants commented that, "team discussion led to ideas that could not have come from one person which enabled us to do great things."

Virtual reality (VR) goggles are being used at communication booths in Niigata Prefecture to enable visitors to see with their own eyes the safety measures that have been introduced at Kashiwazaki-Kariwa, such as the seawall.

### Initiatives to Improve the Ability to Promote Dialogue



In-house debris removal training (Fukushima Daini)



Large-scale evacuation training (Kashiwazaki-Kariwa)

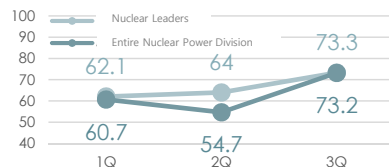
Efforts are underway to improve the emergency response of site personnel so as to enable them to solely engage in an initial response in the event of a severe accident. Four in-house response teams (debris removal/road repair, motor replacement, temporary cable connection, cooling water pump repair) have been created at Fukushima Daini. Repetitive training will continue and the members of the teams are moved around every quarter to provide them with new skills.

At Kashiwazaki-Kariwa, all onsite personnel (approx. 4,000 people) took part in large-scale evacuation training (November 22) during which congestion during exit and the effectiveness of evacuation announcements were examined. It was discovered that in certain locations it is difficult to hear the evacuation announcement, so the installation of outdoor speakers is being considered.

### KPI Results

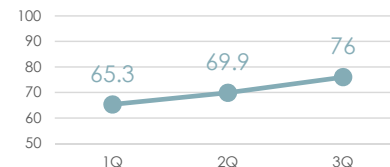
#### Safety Consciousness

Nuclear Leaders: **73.3** points  
 Entire Nuclear Power Division: **73.2** points



#### Ability to Promote Dialogue

Internal: **76** points  
 External: Assessed at the end of the fiscal year



#### Technological Capability

Times of Non-emergency: Assessed at the end of the fiscal year  
 Times of emergency: **97** points



※ KPIs that show little change or that have remained high shall be revised during FY2018