Attachment 1
Tokyo Electric Power Company

The IAEA OSART Review

IAEA OSART Review in retrospect

■ Based on the lessons learned from the Fukushima Daiichi Nuclear Power Station accident, TEPCO is earnestly implementing various safety measures aimed at further improving the safety and reliability of the Kashiwazaki-Kariwa (KK) NPS. As part of these endeavors, KK Unit 6 and Unit 7 were subjected to an operation safety assessment review conducted by the International Atomic Energy Agency (IAEA) from June 29 through July 13, 2015.

■ During the review, KK's emergency response training and severe accident countermeasures, which included improvements achieved through tsunami countermeasures and the introduction of new countermeasure equipment were commended as "Good Practices."

■ Meanwhile, recommendations and proposals were given as advice aimed at further improvement through this assessment based on IAEA standards and international knowledge and experience. Deliberation of the comments made began immediately following the review and some have already been put into practice. Going forward, all of the comments made during the review will be reflected in the safety measures.

■ In order to become a power station trusted by the local community and to have them feel safe, the results of this review shall be put into practice through countermeasures as we aim to achieve higher levels of safety.

Reference: Main conclusions of the IAEA OSART report

(Excerpt from Japanese translation of the report)

The OSART team concluded that Kashiwazaki-Kariwa Nuclear Power Station managers are striving to improve the operational safety and reliability of the power station. Areas identified by the team that were positive include the following:

• After the Fukushima Daiichi NPS accident in March 2011, the Kashiwazaki-Kariwa NPS implemented additional countermeasures for tsunami and internal flooding as well as comprehensive and robust protective measures for severe accidents, including fixed and portable spare power sources, pumps and heat exchanger improvements.

• The power station frequently implements training using difficult scenarios in order to prepare employees to handle emergencies in harsh conditions.

The team gave several suggestions for improving operational safety. The most important suggestions given are as follows:

• Systems for gathering operating experience from various departments at the power station need to be integrated in order to proactively use the information gathered to better detect minor problems, make corrections before they become serious and make it easier to share the lessons that the power station has learned with the nuclear power industry.

• Existing severe accident management guidance should be improved upon to cover all plant conditions including potential events related to the spent fuel pools.

Kashiwazaki-Kariwa nuclear power station management has expressed its determination to make changes in identified areas for improvement as well as its wish **to have a follow-up review approximately 18 months from now.**

IAEA OSART Review outline

■ Review period: Monday, June 29 through Monday, July 13, 2015

■ Review location: Kashiwazaki-Kariwa Nuclear Power Station (Units 6, 7)

■ IAEA members: Peter Tarren （Head of IAEA Nuclear Power Facility Operational Safety Section)
Miroslav Lipar （Former Head of IAEA Nuclear Power Facility Operational Safety Section)
Plus 10 other reviewers

■ Assessment definitions: Recommendation (of a better method)
Suggestion (of a more effective method)
Good practice (example that other companies can benefit from)

■ Assessment areas:

(1) Leadership and management for safety
(2) Training and certification
(3) Operations
(4) Maintenance and technological support (related to machinery, electrical instrumentation, and civil engineering)
(5) Operating experience feedback check criteria
(6) Radiation protection
(7) Emergency plans and countermeasures
(8) Severe accident management

TEPCO's response to recommendations

Recommendations: 9

【Leadership and management for safety】

Issues and Problems

■ Further instruction should be given at the power station with regards to the use of safety gloves and safety belts

■ Data on potential accidents is not being gathered sufficiently or analyzed

TEPCO's response

■ Standards that cover risks should be clarified in regards to work safety rules as a whole【Standards will be created in December 2015】

■ Management observers (MO) that observe the actions of workers during site patrols shall be utilized. Furthermore, coordination shall be made with the VERIFY team* to record and analyze trends with regards to the understanding and compliance to the field rules. 【In Progress】

* confirms that risks are understood and rules are being complied to onsite and identifies problem areas

Onsite checks by TEPCO employee (on the right)

【Emergency plans and countermeasures】

Issues and Problems

■ Inclusion of emergency plans and procedures into documents have not been completed

TEPCO's response

■ A basic plan for responding to warnings and nuclear emergencies will be created and individual procedures that clarify response procedures for each functional unit shall be created.
【to be completed by December 2015】

■ Training will continue to be implemented in a planned manner based on emergency response plans and individual procedures.
【To be implemented as necessary after creation of the procedures】

Maintenance and revisions of emergency procedures for each functional unit

TEPCO's response to suggestions

Suggestions: 9

【Operation】

Issues and Problems

■The fire brigade need to wait for the reactor operator at the entrance of the reactor building to get to the scene of the fire. That is why it is difficult for the fire brigade to achieve the target time.

TEPCO's response

■ In order to enable the fire brigade to reach the scene of a fire in the shortest amount of time possible, the meeting place with operators has been re-examined and improvements made through training.
【to be done in December 2015】

Fire brigade training (the two workers on the left are reactor operators)

【Radiation Protection】

Issues and Problems

■ There is room for improvement with regards to body contamination checks and preventing contaminated materials from being brought out of radiation controlled zones.
■ It would be better if contamination is monitored in front of restrooms and at the exits of work areas within which contamination is possible. The risk of detecting contamination outside of radiation controlled zones can be reduced further.

TEPCO's response

■ A contamination officer that checks workers and objects for contamination has been stationed at the exits of contaminated zones (up until now only objects had been checked). Furthermore, contamination checks are to be performed prior to the use of restrooms in controlled areas.
【to begin in November 2015】
■ Contamination checks at the exits of control zones shall be improved. (the frequency of contamination checks for objects used in controlled zones shall be reviewed and contamination checks shall be implemented at the entrance of the large freight unloading area when materials are brought in.)
【to begin in November 2015】

Contamination checks

Leading Good Practices

Good practices: 9

【Operation】

Main details

■ The following methods for temporarily managing flammable materials are excellent

• Before contractors can temporarily store flammable materials they must first submit an application to the group in charge at TEPCO and receive a permit.

• When a permit is issued the map showing the storage location on flammable materials is updated

• Daily patrols are implemented by members of the managing group based on information recorded on the site map and corrections are made as necessary

Example of flammable materials temporarily stored in controlled areas

【Emergency plans and countermeasures】

Main details

■ Chat systems (systems for converting speech into text) and common operating video (data that enables plant parameters to be visualized) have been introduced in order to prevent discrepancies in response awareness and plant conditions from emergency response departments. Information is shared with the head office and liaisons dispatched to the local government

■ At the power station all emergency response departments engage in hard training every month.

■ Training scenarios comprise of complex issues and harsh conditions that may occur throughout a wide scope of systems. Training is also conducted under conditions that are as realistic as possible.

■ Personnel training participation rate is very high.

Emergency response training (center: Superintendent Yokomura)

Response to Findings

Helpful recommendations and suggestions were given with regards to operations, such as reorganization and manual usage, etc., and TEPCO views these pieces of advice as important issues that must be tackled in order to achieve higher levels of safety.

Deliberation of the comments made began immediately following the review and some have already been put into practice. Going forward, our countermeasures will be reinforced by assuring that all advice given during the review is put into practice without fail.

In regards to emergency training, which was commended as being a "good practice," we will continue in an effort to reach new heights in safety.

Future plans

- The progress of improvements at TEPCO shall be examined during the follow-up review session planned 18 months later.
- During this period, we shall look into each recommendation and suggestion that was made.

We will continue to strive to improve safety in order to become a nuclear operator that has achieved an unparalleled level of safety by making each day safer than the last.