

FY2014 Training History

Making Improvements through Training

March 30, 2015

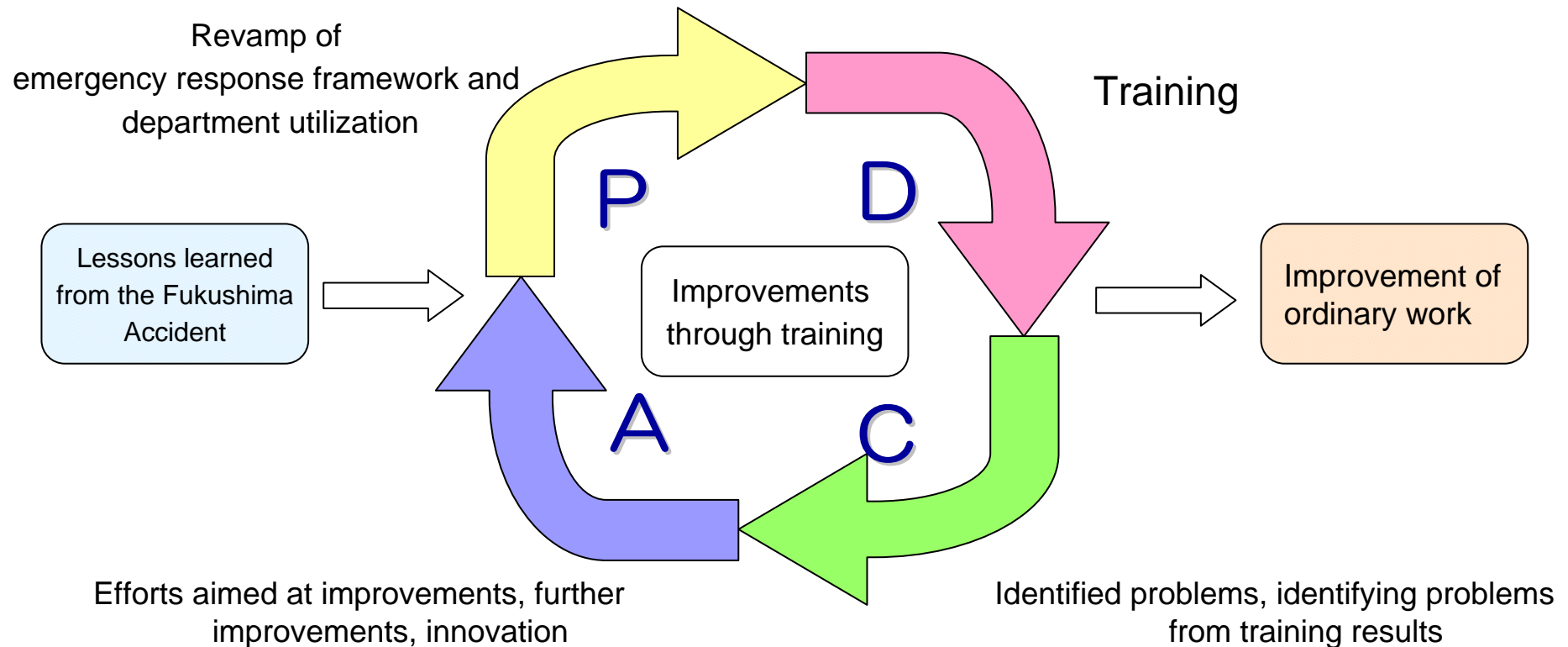
Nuclear Power & Plant Siting Division



東京電力

Activities to Improve Emergency Response Skill (Overview)

- Revamping the emergency response framework and department utilization based on lessons learned from the Fukushima accident.
- Repeatedly implement various types of training based on this
- Make continual improvements based on problems discovered during training
- Continue to make improvements through training



Training History

- **Training has been repeatedly implemented** since the introduction of the incident command system (ICS) in January 2013
- **We have implemented joint training with various related agencies** based on different scenarios

General Training (run by the Head Office)

- Implemented almost every month (KK)
- Most of the time the scenario is not disclosed beforehand

Unit Training (done by team/unit in the field) (Site)

- Training on how to operate power supply cars
- Debris removal training

(Headquarters)

- Offsite center training
- Logistical support base set up training
- Mid/long-term support: Materials procurement training
- Press relations training
- Helicopter transport training for OFC dispatched directors

Various scenarios assumed

- "Earthquake + tsunami" (10/28 @ KK, and several other times)
- "Tornado" (7/25@KK)
- "Aftershock" (11/11@KK)
- "Internal flooding"(2/16@KK)

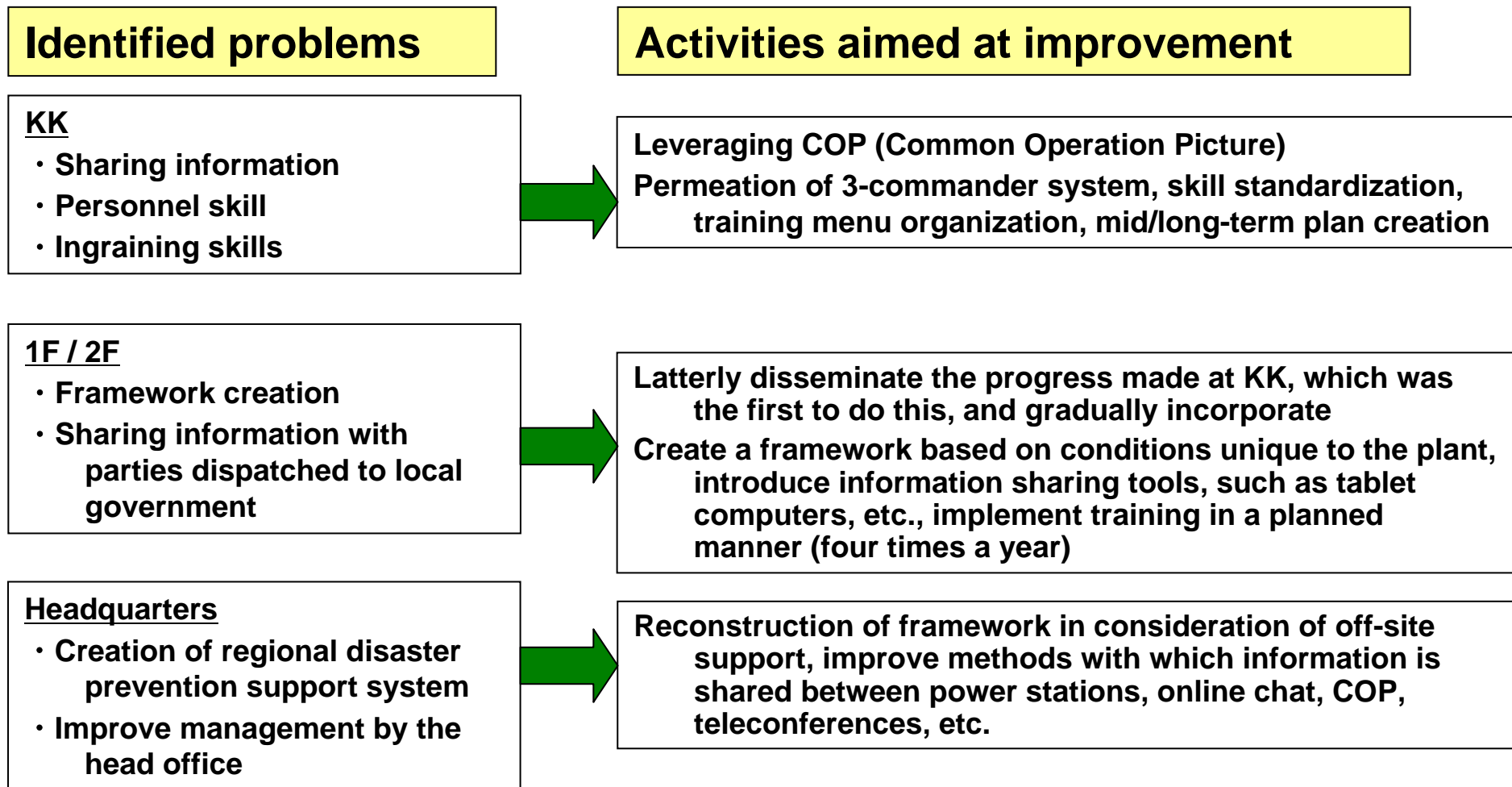
Coordination with related agencies, benchmarking

- Dispatching liaisons to the local government
- Participation in training held in Niigata Prefecture (OFC activities included)
- Training with nuclear rescue team
- Self-Defense Force (Lecture at the Headquarters, site tour)
- Other electric companies (tours)
- Nuclear Regulatory Agency (participation in training)
- Agency for Natural Resources and Energy (1F related tour)

	April	May	June	July	August	September	October	November	December	January	February	March	Total
General training KK	●	●●●●	●	●	●	●	●	●	●	●	●	●	15
1F			●						●			●	3
2F									●			●	2
Headquarters			●		●		●	●	●		●	●	7

Identified problems, identifying problems from training results

- Further identify issues through training
- Examine training and make further improvements through innovation



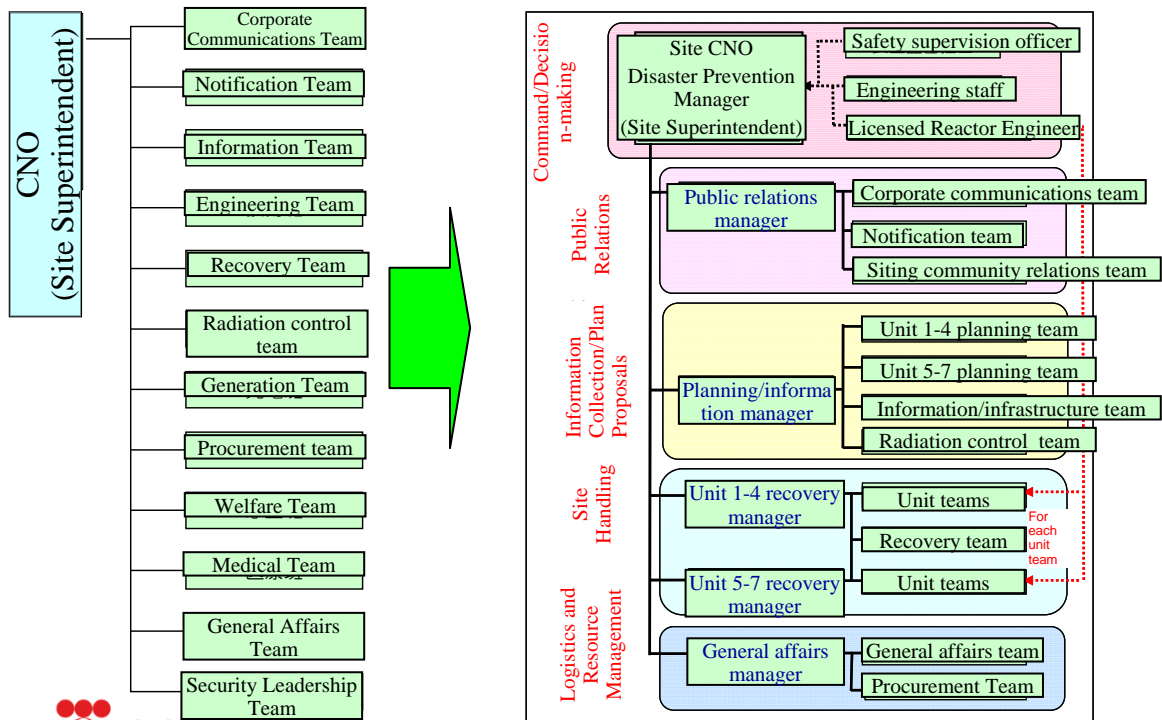
Revamp of emergency response framework and department utilization

- Introduction of the ICS (Incident Command System) approach
 - Management span restrictions and **clarification of the chain of command**
 - Utilization of **policy decision meetings**

• The ICS approach was introduced at Kashiwazaki-Kariwa in January of last year, at headquarters in March of last year, and at Fukushima Daiichi NPS and Fukushima Daini NPS in October of last year.

ICS (Incident Command System) framework introduction (KK example)

• Groups created for each function to oversee and handle multiple units



Policy decision meeting

- Periodically held by the CNO
- General policies decided on and shared within the Head Office



Policy decision meeting (headquarters)

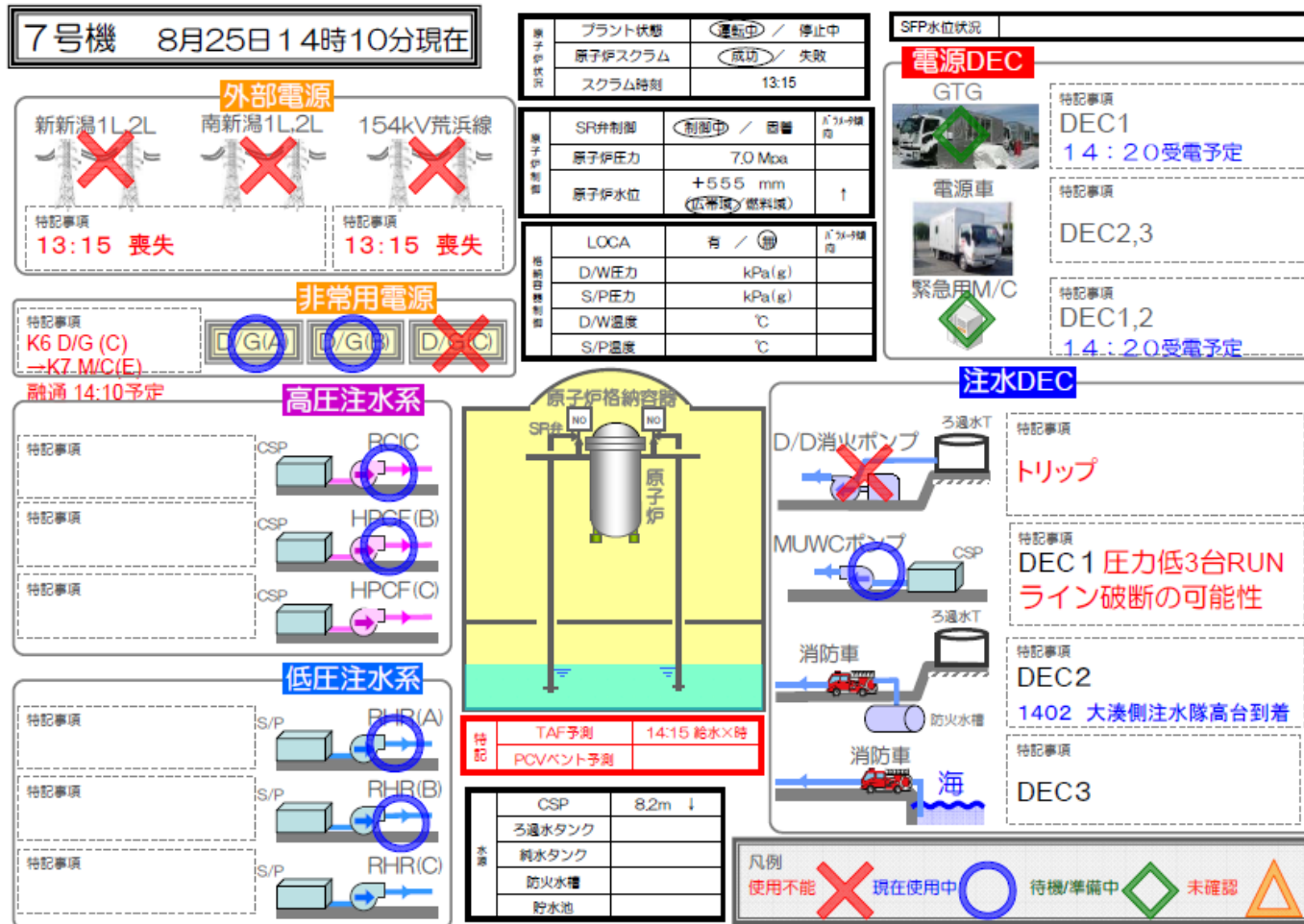


Policy decision meeting (KK)

Leveraging COP (Common Operation Picture)

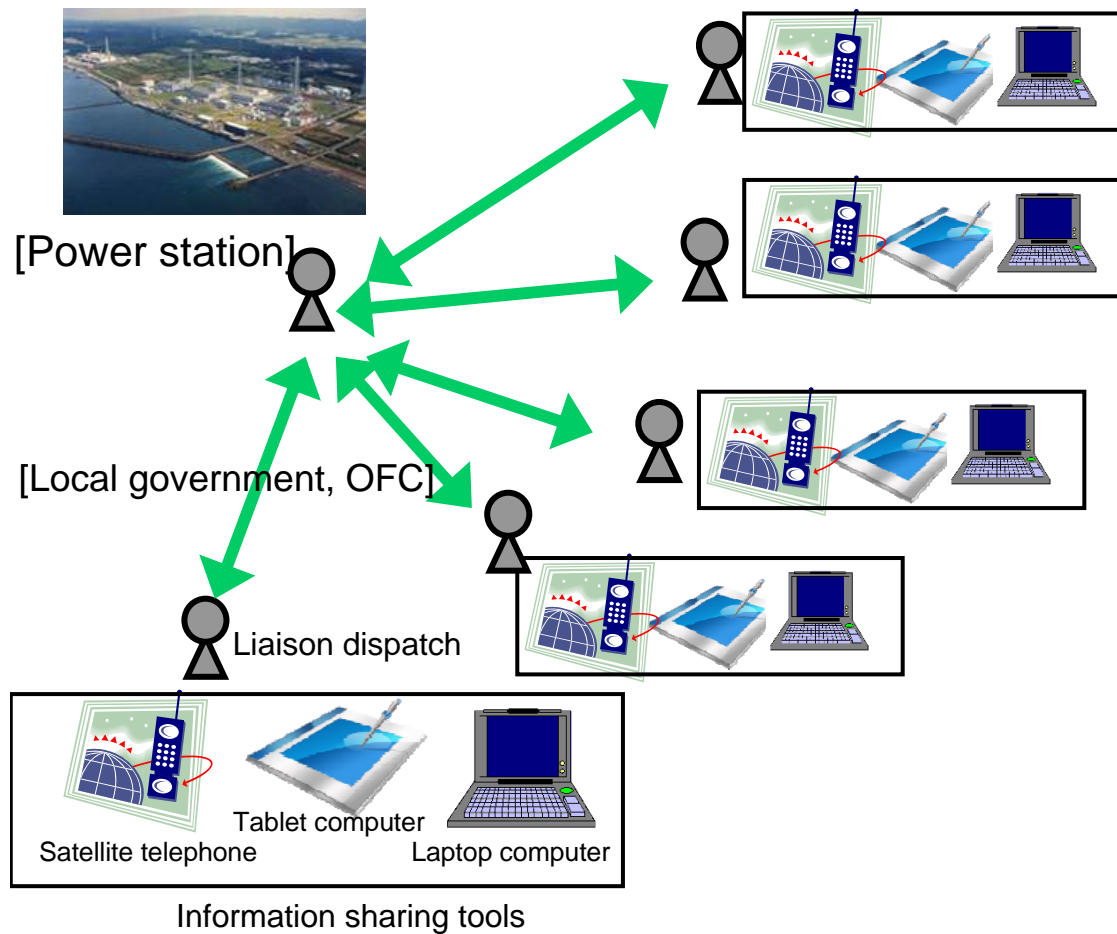
Leveraging COP (Common Operation Picture) to share a summary of information with related agencies

COP



Introduction of information sharing tools, such as tablet computers

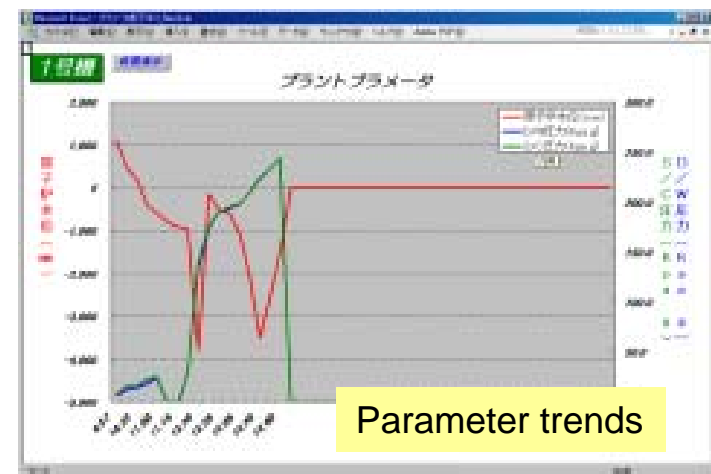
- Dispatching of liaisons to the local governments (prefecture, PAZ city, town, village, OFC, etc.)
- Improving how information is shared by using mobile equipment



[Example of sharing information]



Activity log (online chat)



Parameter trends

Activities at Fukushima Daiichi and Fukushima Daini

- Latterly disseminate the progress made at KK, which was the first to do this, and gradually incorporate
- Create a framework based on conditions unique to the plant, implement training in a planned manner

Actions to date

- ICS has been introduced based on the precedent set by KK (October 1, 2013~)
- Training implemented based on the new system
 - 1F: Tsunami, tornado
 - 2F: Tsunami
- The response system that meets the current conditions of the power station is being examined
 - 1F: TSC remains in a state of emergency response, damaged core exists
 - 2F: Cold shutdown continues, fuel is being stored in the fuel pool
- Joint emergency response training held with 1F, 2F and Headquarters
 - Officials invited to watch training in order to share information with Prefecture and local government
 - The Nuclear Regulatory Agency participated in training along with power station and headquarters
 - Headquarters: Examining compound functions that include an “Immediate response center” function, and general accident prevention function

Good practices born from the improvement of daily work activities through training

- Workers have common to voluntarily be aware of accident prevention on a daily basis

Good practices

- Proposals on how to prevent accidents have been submitted as part of a competition to enhance the ability to make safety improvement-related suggestions.
- Workers have been able to understand through training how an event unfolds
- Headquarters has started to give great consideration to the siting community
- The power station has learned how to fight fires on its own and confirm integrity through improvements in the ability to directly manage work.
- Explanations given at meetings are easier to understand and get to the point quicker as a result of making it a habit to organize voiced opinions

Good example of how examining a certain scenario resulted in changes made to how on-site equipment is utilized (KK)

When training was held based on the scenario that a tsunami was let past the Arahama side levee gate due to a failure to close the gate, participants became aware that the gate was dangerous and that something had to be done, so as a result it was decided that the levee gate is to be kept closed at all times thereby reducing costs and improving safety

Activities aimed at making improvements

○Kashiwazaki-Kariwa

Balanced training will be provided in the mid/long term in order to ensure that skill levels do not decrease as equipment and handling mechanisms are being established. Mid/long term plans will be created and training implemented in consideration of new issues that must be resolved.

○Fukushima Daiichi NPS, Fukushima Daini NPS

Latterly disseminate the progress made at KK, which was the first to do this, gradually incorporate, and create a framework based on the unique conditions of the plant. Construct a mechanism for sharing information with the prefecture and local government, repeatedly implement training, identify problems and make improvements

○Headquarters

Reconstruct the regional disaster prevention support framework in consideration of off-site support. Improve methods for sharing information with other power stations (online chats, COP, teleconferences, etc.). Confirm how inquiries from the press and other external parties are handled. Coordinate with related agencies and plan/implement joint training with them.

Now that ICS is the core of our crisis management we shall develop mechanisms for making advanced preparations, creating support structures, implementing training, and coordinating with external organizations

<Reference 1> Training implemented this fiscal year (Kashiwazaki-Kariwa ①)

○Kashiwazaki-Kariwa

✓ April 24, May 7, May 12, May 23, May 29, June 25, July 25, August 25, September 19, October 28, November 11, December 15, December 22, January 29, February 26, March 31

Unit training will be continually implemented along with general training

✓ Compared with training in the past the ability to respond to an emergency has been improved through the clarification of the chain of command, the prompt sharing information (with the local government), and the repeated implementation of training.

✓ July 25, tornado response training

✓ August 25, September 19, February 26

Personnel dispatched to actual off-site centers (OFC) from the power stations and headquarters in order to engage in training for dealing with external parties that simulates the sharing of information with external organizations

<Reference 2> Training implemented this fiscal year (Kashiwazaki-Kariwa ②)

○Kashiwazaki-Kariwa (Cont.)

- ✓ November 11 (Niigata Prefecture nuclear accident prevention training)
 - Participation by Kashiwazaki-Kariwa and Headquarters
 - Focus on confirming the efficacy of information sharing with the OFC and the crisis response centers of local governments (Prefecture and 9 cities, towns, and villages)
 - Confirm that information can be shared smoothly and promptly using information sharing tools (computers, smart phones, tablet computers, etc.)
And, confirm that plan information can be promptly conveyed in an easy-to-understand manner to the crisis response centers of local governments
 - Provide helicopter transfer training to personnel dispatched to OFC and confirm that there are no problems
 - Implement training on setting up a nuclear power division disaster response base (Kashiwazaki Energy Hall) and confirm access routes to the field

<Reference 3> Training implemented this fiscal year (Kashiwazaki-Kariwa ③)

○Kashiwazaki-Kariwa (Cont.)

✓ December 22

- Scenario: Accident occurs on a weekend/holiday or at night

First response by approximately 40 personnel on call during weekends/holidays and at night

- This response differs from the normal response in that a limited number of personnel must efficiently use information sharing tools to respond. Problems with organizing information within the power station had office and sharing that information with headquarters were identified, so improvements will be made to how tools are used by a limited number of personnel and where those personnel are positioned.

✓ February 26 (simulated emergency)

- Internal flooding
- Quick setup of logistical support base, creation and use of accident map
- Nuclear Regulatory Agency participated to examine function of “Immediate Response Center”
- Problems with coordination between headquarters and the Nuclear Regulatory Agency ERC were identified
- Improvements to how information is shared will be made

<Reference 4> Training implemented this fiscal year (Fukushima Daiichi, Fukushima Daini, Headquarters)

○ Fukushima Daiichi NPS

- ✓ May 26
 - External experts were invited to teach power station executives about the fundamentals of ICS (Incident Command System) and how they can contribute to the basic actions of an emergency response
- ✓ June 11
 - General training (participation by Headquarters as well)
 - Compared with the previous training session the division of responsibilities and chain of command were made more clear

○ Fukushima Daini NPS

- ✓ Unit training on power supplies and using heavy equipment has been continually implemented

○ Fukushima Daiichi NPS, Fukushima Daini NPS, Headquarters

- ✓ December 11, March 18
 - Joint training including general accident prevention
 - The December 11 training assumed that there was damage to the Metropolitan area, followed by damage to the power station three hours later
 - Power station training on March 18 consisted of observers from the local government designed to improve the sharing of information with the prefecture and the local government

The Nuclear Regulatory Agency participated in training along with the power station and Headquarters

<Reference 5> Training implemented this fiscal year (Headquarters)

○Headquarters

May 10

- External experts were invited to teach Headquarter emergency response center directors about the fundamentals of the same ICS (Incident Command System) that has been introduced at KK and how they can contribute to the basic actions of an emergency response, and emergency response decision training was also implemented.

June 11

- First general training with Fukushima Daiichi NPS since the disaster

August 6

- Unit training was held on dispatching Headquarter personnel to set up the nuclear power division accident response support base (Kashiwazaki Energy Hall)
- Issues about securing access routes to the field were identified

September 16

- Unit training was held on procuring materials for the afflicted power station and providing support
- Issues about setting priorities to quickly provide materials and support were identified