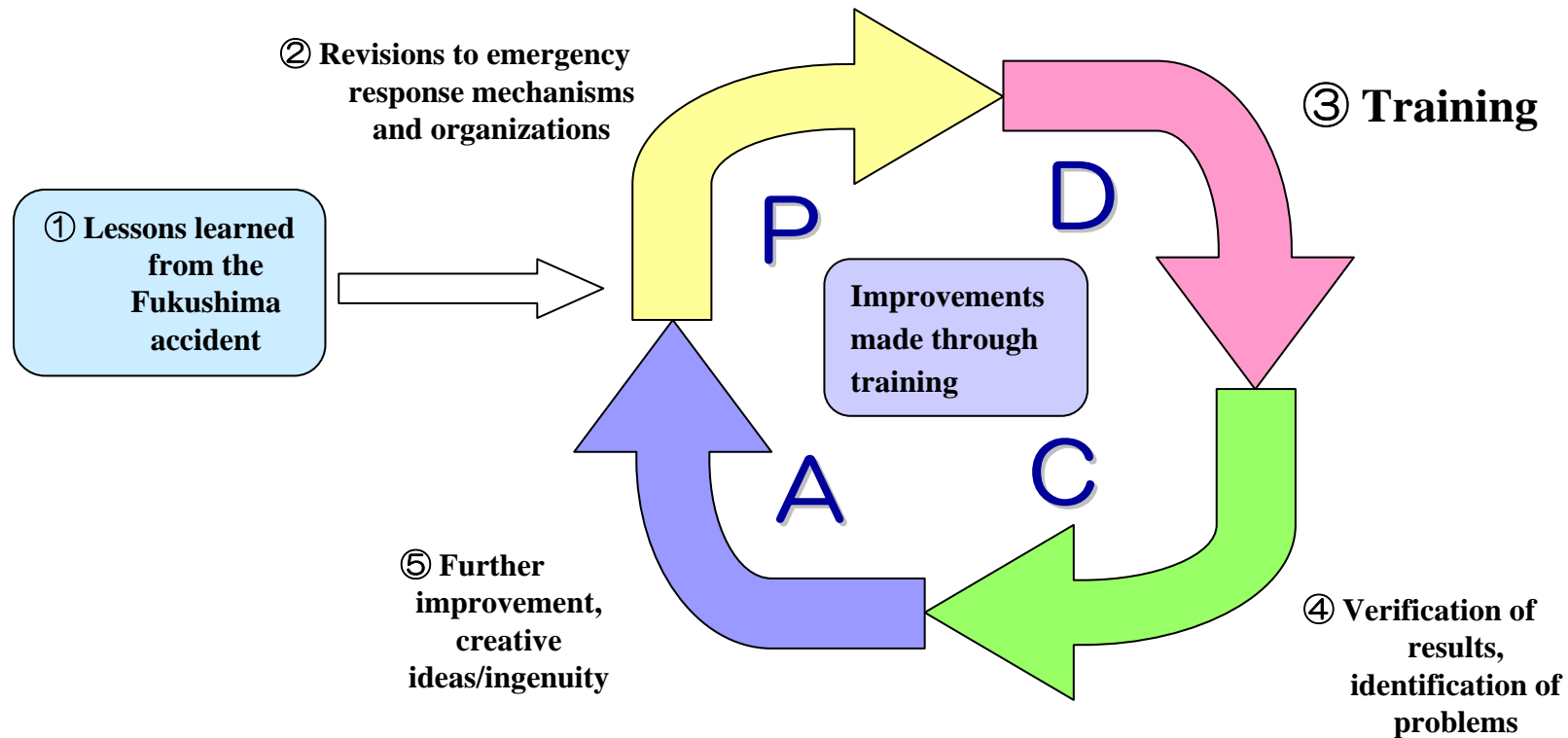

Implementation of emergency response drill

December 1, 2014
Nuclear Power & Plant Siting Division

Efforts to Improve Crisis Response Skills (Overview)

- In the wake of the Fukushima accident emergency response mechanisms and organizations have been revised
- Various types of training are being repeatedly implemented based on these revisions
- Continuous efforts are made to improve problem areas discovered during training
- Improvements will be continuously made through training



① Reflecting on the Fukushima accident and making improvements

- Various types of improvements have been deliberated and implemented based on lessons learned from the Fukushima accident
- Organizational structures and operation have been improved while referencing practices overseas, such as ICS

Lessons learned from Fukushima

- **Chain-of-command confusion**
- **Lack of resources for long-term response**
- **Communications with external parties**
- **Lack of Head Office support**
- **Unclear team missions**

Direction of improvements

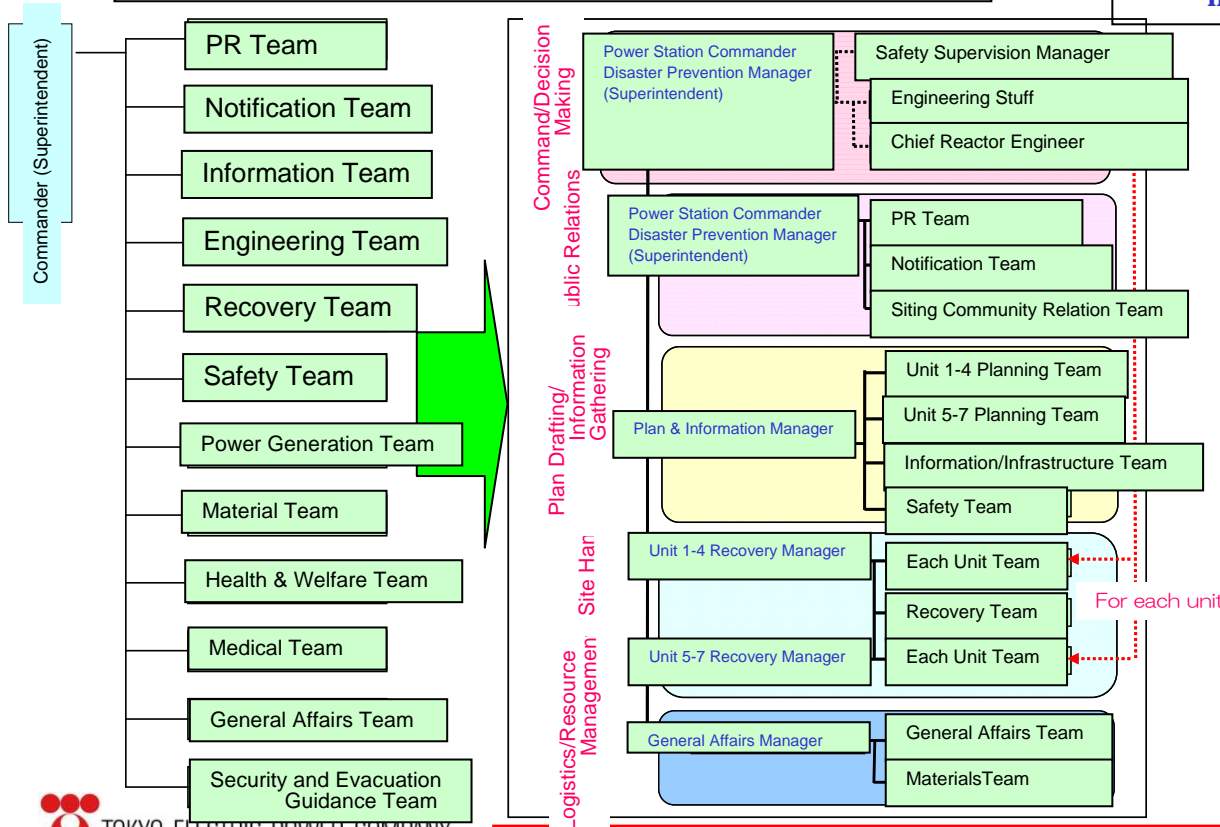
- **Organization and operation revised while referencing ICS**
- **Personnel increased, 3-team structure built**
- **Communications equipment enhanced, liaison to local government dispatched**
- **Head Office incident response mechanism revised, various support functions prepared, etc.**
- **Clarification of team missions and division of responsibilities, etc.**

② Revisions to emergency response structure and operation (example)

- ICS approach introduced
 - Management span limits and clarification of the chain of command
 - Use of policy decision meetings

ICS introduction (KK example)

- Groups created for each function and managed centrally
- Multiple units handled



Policy decision meetings

- Held periodically by commander
- Entire policy determined and shared within the incident command center



Policy decision meeting (Head Office)



Policy decision meeting (KK)

③ Repeated implementation of Training

- Training has been repeatedly implemented since the introduction of ICS in January 2013
- Joint training implemented with various agencies based on different scenarios

Training Record

General Training (Incident command center established for training)

- Implemented almost every month (KK)
- Scenarios undisclosed most of the time

Individual Training (by unit and implemented in the field) (Site)

- Training on the use of power trucks
- Debris removal training

(Head Office)

- Offsite center training
- Training on establishing logistical support centers
- Mid/Long-term support: Material/equipment procurement training
- Training handling the media

(Reference) FY2014 performance

General training: Head Office: 5 times, KK: 12 times (as of the end of November)

KK individual training: Approximately 1,510 times (as of the end of August)

Diversified Training

Utilization of diversified scenarios

- “Earthquake + Tsunami” (10/28@KK and several other times)
- ”Tornado” (3/13@1F, 7/25@KK)
- ”Aftershocks” (11/11@KK)

Coordination with related agencies, benchmarking

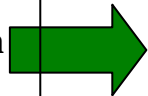
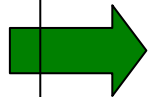
- Dispatching of liaison to local government
- Participation in Niigata Prefecture training (OFC activities)
- Joint training with Nuclear Rescue Team (support agency created by the FEPC)
- Self-Defense Force (Lecture at Head Office, Site observation)
- Other electric companies (site visits)

④ Identifying problem areas through training

- Identification of more problem areas through training
- Verify efficacy of improvements, innovations through training, and make further improvements

Problem areas identified through training

- **Enhanced information sharing**
 - Sharing of summaries with relevant parties
 - Provision of detailed information to local government liaisons in particular
- Effective discussions



Direction of improvements

- **Use of COP (Common Operation Picture)**
- **Introduction of information sharing tools, such as tablet computers**
- **Creation of discussion rules, advice from experts**

⑤ Using ingenuity and making further improvements (Example 1)

Use of COP (Common Operation Picture) that enables sharing of information summaries between common related parties

COP

7号機 8月25日 14時10分現在

外部電源

新新潟1L,2L ~~南新潟1L,2L~~ 154kV荒浜線

特記事項
13:15 喪失

特記事項
13:15 喪失

非常用電源

特記事項
K6 D/G (C)
→K7 M/C (E)

融通 14:10 予定

D/G(A) D/G(B) D/G(C)

高圧注水系

BCIC

HPCF(B)

HPCF(C)

低圧注水系

RHR(A)

RHR(B)

RHR(C)

プラント状態	運転中 / 停止中
原子イスクラム	成功 / 失敗
スクラム時刻	13:15

SR弁制御	制御中 / 閉	↑
原子炉圧力	7.0 Mpa	
原子炉水位	+555 mm	↑
(広帯域)燃料棒		

LOCA	有 / 無	↑
D/W圧力	kPa(g)	
S/P圧力	kPa(g)	
D/W温度	℃	
S/P温度	℃	

SFP水位状況

電源DEC

GTG

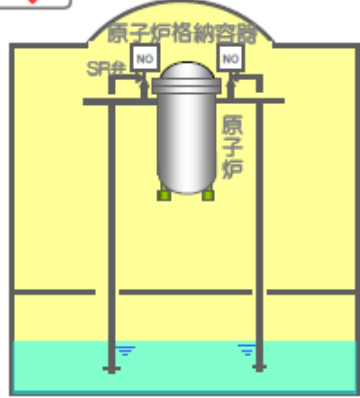
電源車

緊急用M/C

特記事項
DEC1
14:20受電予定

特記事項
DEC2,3

特記事項
DEC1,2
14:20受電予定



特記	TAF予測	14:15 給水×時
特記	PCVベント予測	

ろ過水タンク	8.2m ↓
純水タンク	
防火水櫃	
貯水池	

注水DEC

D/D消火ポンプ

MUWCポンプ

消防車

消防車

ろ過水T

ろ過水T

防火水櫃

海

特記事項
トリップ

特記事項
DEC1 圧力低3台RUN
ライン破断の可能性

特記事項
DEC2
1402 大湊側注水隊高台到着

特記事項
DEC3

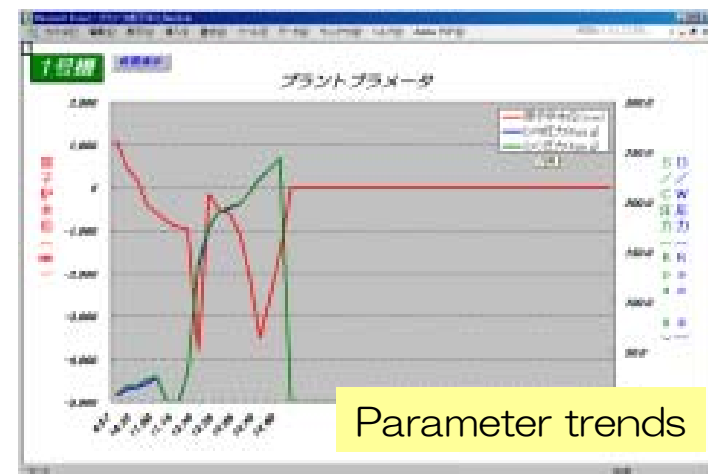
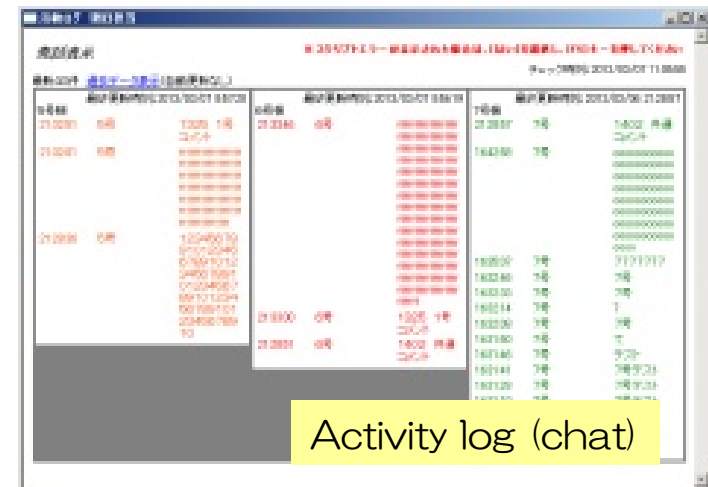
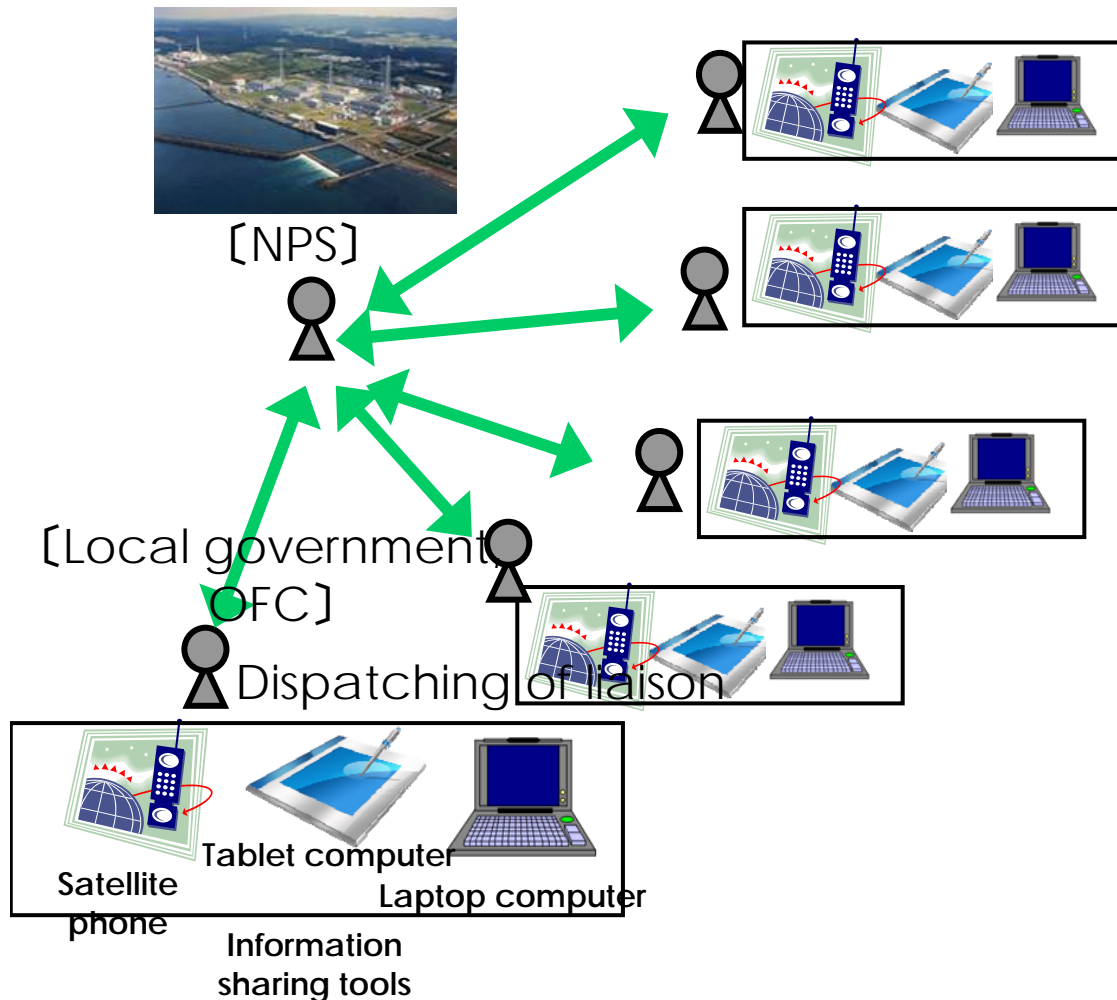
凡例

使用不能 X 現在使用中 O 待機/準備中 ◇ 未確認 △

⑤ Using ingenuity and making further improvements (Example 2)

- Dispatching of liaison to regional governments (prefecture, cities, towns, villages within PAZ, OFC, etc.)
- Making better use of mobile devices for sharing information

[Example of information sharing]



Efforts underway at 1F, 2F

- Performance results from KK, where various efforts are already underway, are disseminated laterally and gradually implemented at other sites
- Mechanisms put in place and training implemented in accordance with the circumstances at each site

Response history to date

- **Precedents from KK copied and ICS introduced (from October 1, 2013)**
- **Training implemented based on new system**
 - 1F: Tsunami, tornado**
 - 2F: Tsunami**
- **Response mechanisms being deliberated in consideration of current plant conditions**
 - 1F: Emergency response structure remains in operation, damaged cores still present**
 - 2F: Cold shut down continues, fuel is being stored in fuel pools**

Future schedule draft (General Training)

	November	December	January	February	March
1F		△(11)			△
2F	Niigata Prefecture training	△(11)			△
KK	▲(11)	△(15) △(22)	△	△	△

1F, 2F: General disaster prevention training on multiple simultaneous events

(Training on events reported to Central government)