

Nuclear Reform Progress Status

March 30, 2022

Tokyo Electric Power Company Holdings, Inc.

- On September 22, 2021, an Improvement Measure Report pertaining to the physical protection incidents that occurred at the Kashiwazaki-Kariwa Nuclear Power Station was submitted to the Nuclear Regulation Authority, and recurrence prevention measures are being successively put in place.
- The general inspection of penetrations that was launched after the discovery of partially incomplete safety measure renovations is still underway.
- The Board of Directors has given instructions to implement physical protection incident recurrence prevention measures without fail and to engage in the following. (September 2021)
 - ① **Transfer Headquarter functions to Niigata**
 - ② **Employ human resources from outside the company**
 - ③ **Ensure effectiveness by allocating resources to bring unity between Headquarters and site/field personnel**
- Today, we shall explain the details of, and progress with, nuclear reforms.

1. Trust from the region and nuclear reforms

- In order to regain the trust of regional residents it is **necessary** to completely address the string of inappropriate incidents, which is our most pressing issue, as well as cultivate a sense of unity within the power station, and **stand on the "starting line of trust."**
- We aim to become a **"trusted power station"** by following the instructions from the Board of Directors and strengthening coordination with the local community.

Nuclear reforms (Reforms put forth in the 4 th Comprehensive Special Business Plan)		Addressing urgent issues (Starting line of trust)	Become a trusted power station	
1	Unified management of Headquarters and power stations	●	●	Relocate Headquarter ⇒ functions (Slide 2)
2	Project management system construction/BIM introduction	●		Systemization ⇒ (Slide 10)
3	Strengthen physical protection/expand resources	●		Address the 36 ⇒ issues (Slide 4~8)
4	Revise personnel assignments and leverage external experts	●	●	Employee human resources from ⇒ outside the company (Slide 3)
5	Increase motivation in the workplace and improve workplace environments	●	●	Cultivate a sense ⇒ of unity (Slide 9)

2. Transferring Headquarter functions [Unified management of Headquarters and power stations]

- Relocate Headquarter functions necessary for the Kashiwazaki-Kariwa Nuclear Power Station **near the power station, increase opportunities to directly hear the opinions of regional residents and leverage them for power station operation.**
- **16 staff members from headquarters were assigned to the Kashiwazaki-Kariwa Nuclear Power Station** in November 2021 to provide support to the General Manager/Site Superintendent.
- In light of the **weaknesses that were discovered in the wake of the string of inappropriate incidents** (weaknesses with the ability to recognize risks, ascertain actual field conditions, and make corrections as an organization, and lack of coordination between departments and with contractors), for the time being (from April 2022) **personnel responsible mainly for quality/safety and equipment diagnostics, etc., shall be assigned to Kashiwazaki City (total: Approx. 70 people) in order to strengthen unified management of Headquarters and the power station.**
- **We plan to transfer approximately 300 people that can provide Headquarter functions necessary for the Kashiwazaki-Kariwa Nuclear Power Station** (we will announce how many people will be transferred and when by the end of September 2022 after carefully examining various issues that will impact the Fukushima Daiichi/Fukushima Daini Nuclear Power Stations and construction of the Higashidori nuclear power station)

	November 2021	For the time being (from April 2022)
Number of people transferred (total)	16	Approximately 70
Assigned location	Power station	Power station, offices in Kashiwazaki city
Transferred functions	Reform promotion, project analysis, Cost analysis, training, etc.	Quality/safety, schedule management, equipment diagnostics, etc.

Work/living environments need to be secured along with new preparedness centers



Out of the approximate 770 people at Headquarters, ultimately a total of approximately 300 people will be transferred to the Kashiwazaki-Kariwa Nuclear Power Station in the future

Unified management of Headquarters and the power station shall be strengthened to address weaknesses discovered in the wake of the series of inappropriate incidents

3. Inviting external personnel intimately familiar with each field

- TEPCO OB Mr. Fukuda will be newly appointed as Nuclear Power & Plant Siting Division General Manager. Due to his experience working at the Nuclear Damage Compensation and Decommissioning Facilitation Corporation, Mr. Fukuda will be able to **objectively ascertain problems with TEPCO and comprehensively lead the entire Nuclear Power Division**.
- Chubu Electric OB Mr. Mizutani will be invited to be Assistant to the Site Superintendent of the power station. **Along with providing support to the Site Superintendent, such as by providing advice to him and giving instructions to power station personnel**, etc., Mr. Mizutani will also **promote awareness reforms at the power station** in cooperation with power station personnel.
- We have been employing experts as needed, such as former self-defense force personnel, former policeman, OB from other electric companies, and former firemen, etc., since April 2021, in order to **strengthen physical protection functions and improve safety at the power station**.
- Going forward, we shall **continue to proactively employ** personnel from outside the company that have a plethora of experience **without limiting ourselves to personnel from specific agencies and companies**.

<Nuclear Power & Plant Siting Division General

Name	Date of appointment	Role
Toshihiko Fukuda	April 1, 2022	➤ General command of the entire Nuclear Power Division

< Assistant to the Site Superintendent, Kashiwazaki-Kariwa Nuclear Power Station >

Name	Date of appointment	Role
Ryosuke Mizutani	April 1, 2022	➤ Awareness reforms, work style/system reforms, technical support, etc.

< Experts in each field >

Former agency	# of people	Deployed location	Affairs managed	Role
Self-Defense Force	2	Headquarters	Physical protection	➤ Strengthen the ability to recognize security risks, ascertain actual conditions, and make corrections as an organization by providing guidance/advice pertaining to the implementation of protective measures
Police	5	Kashiwazaki-Kariwa Nuclear Power Station		
OB from other electric companies	1			
Fire department	1			

- **36 countermeasures included in an improvement measure plan to address the physical protection incidents**, such as dialogue between upper management and field personnel, are being **successfully implemented and underway** (refer slide 5).
- **Further improvement of equipment reliability is vital, so we will continue to steadily renovate equipment and continuously improve nuclear security** (we plan to submit an application for permission to modify physical protection regulations in conjunction with the renovation of equipment by June 2022)

【 Implementation status of primary improvement measures】

< Equipment renovations/basic policy revisions, etc. >

- ✓ In order to address the problems noted in the Improvement Measure Report, additional biometric authentication devices shall be introduced, the nuclear security culture cultivation basic policy revised, and revisions made to departments in the Physical Protection Division (new departments to be created in May).

< Having upper management ascertain actual field conditions >

- ✓ Field observation by upper management executives, such as the Site Superintendent. Identify problems through dialogue with personnel and contractors (refer to slides 6 and 7)

< Expand human resources >

- ✓ **Approximately 30 personnel will be gradually added** (compared to prior to the physical protection incidents). **Former policeman, self-defense force personnel, and employees from other electric companies (8 people in total ※) shall be** employed as experts on physical protection. Their experience will be leveraged to strengthen security-related risk awareness, the ability to ascertain actual conditions, and the ability to make corrections as an organization

※Total of former self-defense personnel, policemen, and OB from other electric companies from slide 3

<External reviews>

- ✓ External experts shall review and assess nuclear security as part of TEPCO's physical protection initiatives (refer to slide 6)

【Future plans】

- ✓ **Further resources shall be devoted** to equipment countermeasures, such as revisions to restricted area demarcations, improvement/replacement of intruder detectors, renovation of access management/monitoring systems, mechanization of personnel/vehicle checks, etc., and **we shall secure an equipment budget of over ¥20 billion (over three years)** (refer to slide 8)

(Reference) 36 improvements to address physical protection incidents

➤ All to be put in place by September 2022 with the exception of two long-term countermeasures (30, 31)

No.	Improvement measure	No.	Improvement measure
①	Reconstruction of physical protection governance	⑱	Create equipment maintenance system
②	Monitoring process improvements	⑳	Revise change management processes, create educational programs
③	Strengthening of physical protection education (upper management, etc.)	㉑	Create maintenance plans (inspection plans, replacement plans)
④	Strengthening of physical protection education (Protection Division)	㉒	Clarify rules pertaining to substitute measures
⑤	Strengthening of physical protection education	㉓	Clarify time periods for function repairs
⑥	Revision of nuclear security culture cultivation plan	㉔	Create basic manuals, etc.
⑦	Messages from upper management and activities to help those messages permeate throughout the company	㉕	Increase the number of Physical Protection Department personnel
⑧	Sitting circle meetings/upper management dialogue sessions	㉖	Revise security functions/responsibilities, etc.
⑨	Improve the ability to ascertain work conditions by having managers inspect the field and field conditions	㉗	Create policy for disclosing information on inappropriate incidents
⑩	Listen to opinions about nuclear security	㉘	Continue peer reviews with other electric companies
⑪	Initiatives to ascertain understanding/improvement of nuclear security	㉙	Improve communication between the Protection Division and the rest of the power station
⑫	Confirm the competency of operators/watchmen	㉚	Revise restricted area demarcations
⑬	Confirm ID when reregistering biometric data in the field	㉛	Implement countermeasures for false alarms from intruder detectors
⑭	Introduce additional biometric authentication equipment	㉜	Improve manuals so that they reflect actual field conditions
⑮	Random training for watchmen	㉝	Create a "purpose" for Kashiwazaki-Kariwa
⑯	Alleviate congestion at each gate	㉞	Develop/strengthen risk management
⑰	Strengthen system for providing support to the Protection Division	㉟	Conduct study sessions on the Fukushima Daiichi Nuclear Power Station Accident
⑱	Ensure that ID cards are kept locked	㊱	Self-assessment/third-party assessments

- : Countermeasures that have already been implemented by TEPCO and are underway
- : Measures that are being deliberated/prepared, and shall implemented by the end of September 2022
- : Measures for which projects are being created and deliberated

4-2. Addressing the physical protection incidents

【 Improvements implemented to date ①】

- Upper management is ascertaining concerns and problems in the field and continually implementing initiatives aimed at working with the field to make improvements as part of the Improvement Measure Plan (the Chairman and President are engaging in dialogue with personnel in charge of physical protection)
- Establishment of an Expert Nuclear Security Assessment Committee. External experts shall perform an assessment every six months of TEPCO's nuclear security initiatives and performance, etc.



Dialogue between personnel and President Kobayakawa Expert Nuclear Security Assessment Committee
Expert Nuclear Security Assessment Committee (Honorifics omitted)

Name	Field of expertise	Affiliation
Isao Itabashi	Nuclear security, crisis management	Council for Public Policy, Chief of institute
Tomonori Iwamoto	Safeguards, nuclear security	Institute of Nuclear Materials Management Japan Chapter, Secretary General Japan Nuclear Fuel Limited, Fellow
Yoshihide Kuroki	General security	All Japan Security Service Association, Senior Managing Director
Naoko Noro	Physical protection, nuclear security culture	JAEA Integrated Support Center for Nuclear Nonproliferation and Nuclear Security Support Center, International Capacity-Building Support Office, Assistant Technical Director

4-2. Addressing the physical protection incidents

【 Improvements implemented to date ②】

- In order to correct weaknesses in the ability of managers to ascertain field conditions, which was identified through cause analysis, **power station executives shall identify problems through proactive field observation and dialogue**, and lead the way to promoting improvements.
- **Short-term equipment countermeasures**, such as the ⑭ introduction of additional biometric authentication equipment, and the ⑰ creation of equipment maintenance systems as put forth in the Improvement Measure Plan are already implemented.

< Examples of improvements implemented based on opinions gained through dialogue with field personnel >

Dialogue

- I'd like to make preparations to handle physical protection equipment malfunctions as winter approaches.
- I'm concerned that TEPCO security personnel alone will not be able to handle false alarms ※ during bad winter weather.

※ False alarms from properly operating intruder detector equipment caused by insufficient environmental preparations

Measures

- In addition to TEPCO security personnel in the Physical Protection Division, TEPCO employees and contracted security personnel that work in offices will provide support.
- Protective equipment that is affected by bad weather shall be replaced with equipment that has been designed to resist such conditions.

Achievements

- Personnel support has been provided and equipment has been gradually replaced thereby resulting in a maximum reduction of 90% of false alarms. (Compared to last year. Includes impact from weather conditions.)
- After implementation of the countermeasures, TEPCO security personnel commented that, "this year was vastly different from other winters."



Dialogue between station personnel and the Site Superintendent



Power station executives ascertaining actual field conditions

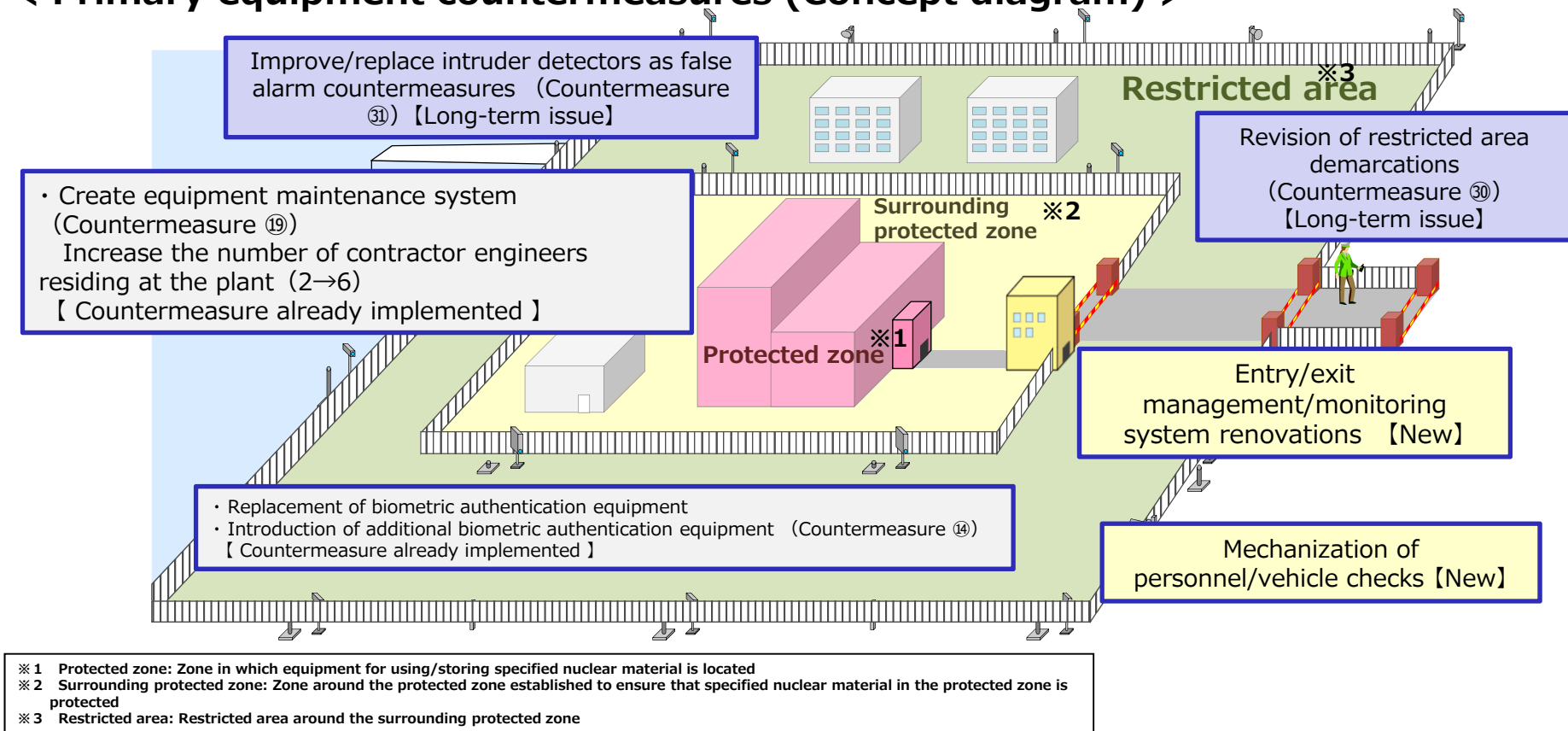


4-3. Addressing the physical protection incidents

【 Primary equipment countermeasures/future handling 】

- Projects to address the long-term issues of the Improvement Measure Plan (30 Revision of restricted area demarcations and 31 False alarm countermeasures) are still being deliberated. False alarms are being reduced through intruder detector improvements and replacement, etc.
- In addition to the Improvement Measure Plan, we also plan to introduce the latest technology to improve performance by reducing the load on security personnel, such as by updating entry/exit management/monitoring systems and the mechanization of personnel/vehicle checks.
- Along with moving forward with general improvement/updating of physical protection equipment, we shall continue to propose and implement required countermeasures whilst resisting the urge to be satisfied with current plans and countermeasures.

< Primary equipment countermeasures (Concept diagram) >



5. Cultivating unity amongst the workers at the power station

【 Improving motivation in the workplace and improving work environments 】

- Currently, upper management is engaging in dialogue with station personnel (131 times) and activities by primarily younger station personnel to create a "good power station" are underway.
- Based on the opinions from station personnel gained through these activities, power station executives are formulating the **"Purpose of the power station" (tentative title: The Purpose of Kashiwazaki-Kariwa)** (to be announced at the site superintendent's meeting in May 2022)
 - ✓ Identify the basic behaviors of all workers at the power station that will serve as beliefs and pillars of those beliefs.
 - ✓ Understanding/empathy activities shall be engaged in through the end of September 2022 to enable the actual actions of all workers of the power station to give birth to a power station that is trusted by regional residents.
- In order to promote a stronger sense of unity, **Chubu Electric OB Mr. Mizutani will be appointed Assistant to the Site Superintendent.** Mr. Mizutani Will be in charge of improving internal communication and personnel motivation, and will do his best to work with the Site Superintendent to achieve nuclear reforms.

< Dialogue with upper management >



< Activities to create a "good power station" >



Reflect the opinions of site personnel

"Purpose of the power station" (tentative title: The Purpose of Kashiwazaki-Kariwa) (to be announced in May 2022)

- ✓ Formulate beliefs that can be understood by all workers and that serve as a pillar for action

Engage in understanding/empathy activities for all workers at the power station (through the end of September 2022)

Have all power station workers fulfill their "purpose"

Repeatedly fulfill our purpose and become a trusted power station

For example...

- ✓ Reduce the number of incidents that cause concern, such as labor accidents and fires, etc. When such incidents occur, quickly convey details to regional residents by immediately sharing information within the company, including with upper management.
- ✓ Have station personnel participate in regional events to directly hear the opinions of regional residents, and deliberate how they can contribute in times of regional disaster.

- Closely examine penetrations during the general inspection through three steps: [inspection of individual penetrations, inspection of surfaces \(looking at entire walls of penetrations\) and inspection of spaces \(looking at all the penetrations in entire rooms\).](#)
Gather/organize data collected from the field, and use 3-D maps to begin systemizing buildings/equipment data [\(use 3-D mapping for unified management of field attribute data\).](#)
- This system will be used in the future for the maintenance of penetrations that have been protected from fire and flooding.

< BIM : Building Information Modeling concept diagram >

