

March 31, 2021

Tokyo Electric Power Company Holdings, Inc.

Board of Directors

## **Results of Monitoring the Progress of the Nuclear Safety Reform Plan**

~Report for the Board of Directors of Tokyo Electric Power Company Holdings, Inc.~

Upon reflecting on the Fukushima Nuclear Accident, in September 2012, Tokyo Electric Power Company Holdings, Inc. (hereinafter referred to as, “TEPCO HD”) established a Nuclear Reform Special Task Force along with the Nuclear Reform Monitoring Committee (hereinafter referred to as, “NRMC”), which serves to supervise and monitor reform initiatives from a third-party perspective.

The NRMC supervises and monitors reforms that TEPCO HD must implement if it is to become a nuclear operator with the world’s highest levels of safety awareness, technological capability, and the ability to promote dialogue with society.

As TEPCO HD is the party responsible for the Fukushima Nuclear Accident and also a nuclear operator engaging in nuclear safety reforms, the NRMC expects, in particular, that: “management will fulfill its roles”, “Nuclear Power Division governance will be strengthened”, “nuclear safety risks will be continually managed”, “the company will learn from its failures and challenges”, “the company will display sufficient technical capabilities”, “there will be continuous improvement in emergency response capabilities”, “the company will continue to proactively disclose information on risks and engage in dialogue with society”, “the company shall improve internal auditing functions”, and that “the company shall reduce exposure doses”.

Between the time when the Nuclear Reform Plan was revised in March 2013 and today, TEPCO HD has engaged in nuclear reforms, provided reports to the NRMC at all 18 of its meetings, issued a total of 30 quarterly progress reports, and has performed self-assessments of nuclear safety reforms.

However, there have been problems along the way in regards to how TEPCO HD has interacted with, and disclosed information to, society and other external parties.

Examples include the following: Announcement of contaminated water leaks inside the power station harbor (4<sup>th</sup> meeting); Disclosure of information about drainage channel K at the Fukushima Daiichi Nuclear Power Station (8<sup>th</sup>, 9<sup>th</sup> meetings); Kashiwazaki-Kariwa seismic-isolation building problem (13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup> meetings); Errors on the notification form sent from the Kashiwazaki-Kariwa Nuclear Power

Station (17<sup>th</sup> meeting). During this time these issues have been a focus of the NRMC, which has in turn requested that improvements be made.

At today's 18<sup>th</sup> NRMC meeting, TEPCO HD gave a report on nuclear safety reform initiatives implemented to date. In response to today's report, and upon reflection on the reforms that have been made so far, the NRMC expressed the following observations and opinions.

### Observations and Opinions

TEPCO HD has continued to steadily implement reform initiatives to fulfill the expectations of the NRMC, and it is making progress in continuing to raise their goals and standards. TEPCO HD has a goal to have the world's highest levels of safety, but this will take time to achieve.

The NRMC believes that these expectations will become the beliefs and actions of TEPCO HD, and that always humble self-improvement will lead to the path to a qualified and reliable nuclear operator.

Nuclear safety is not something that should be satisfied just by complying with regulatory standards, and in particular, self-assessments should be strict, uncover areas for improvement in the future and serve as an index for further improving safety. And as such, they should be strictly implemented. In that respect, we view the effort over recent years to engage in a cycle of uncovering weaknesses and continually making corrections aimed at improvements, as a step in the right direction.

Nuclear safety, risk management, communication, and self-assessments are initiatives to which there is no end. It is extremely important that management show leadership in the course of these initiatives, and that nuclear leaders set priorities, allocate authority, and monitor/follow up with the implementation status.

These initiatives must also be continually checked by internal auditing departments.

It has been almost 10 years since the Fukushima Nuclear Accident, and the number of employees who were not at the company when the accident occurred is increasing. However, we must not let the regrets and lessons learned from the accident be forgotten. These lessons learned apply to both the 1F site for decommissioning and the KK site when the nuclear reactors resume to safe operation.

NRMC opinions about specific issues related to the expectations of the NRMC are as follows:

[Safety First, Strengthening Governance and Risk Management]

- TEPCO HD must continue efforts to strengthen governance in the Nuclear Power Division and risk management under management for leading by example when it comes to prioritizing safety. The company must continue to strive to ensure that the daily behavior of employees and contractors is based on a strong safety culture at all levels of the organization. We would like the company to take the initiative in risk extraction and countermeasures, keeping in mind that the risks to be managed always change depending on the business and the external environment.
  - Responsibilities of the President have been further clarified in conjunction with revisions to the safety regulations. In light of the main point of these revisions, it is important that company processes be strengthened/maintained and measures implemented to ensure that these responsibilities are fulfilled.
  - The company is aware of the necessity to align the vectors of all departments in order to strengthen governance, and we commend TEPCO HD for clarifying the ideal state it aims to achieve as an operator articulated in the Management Model and the Decommissioning Promotion Strategy, and continually making improvements and achieving excellence.
  - We commend the company for providing training to teach all employees about the facts and lessons learned from the Fukushima Nuclear Accident, which enables each and every employee to act and behave with safety in mind.
  - We commend the company for creating a risk information management system, which clarifies processes for handling risks, thereby strengthening risk management for the company and the public.

[Willingness to Learn and Strengthening Technological Capability]

- The willingness to learn has permeated throughout the entire organization and we commend the company for its initiatives to enhance technological capability, and the progress that has been made with education and training. The ability to identify problems and causes, and make improvements, needs to be continually improved. Recognizing that mistakes and problems may always occur, TEPCO HD must continue to improve equipment design and operation procedures so that mistakes and problems do not occur. TEPCO HD should develop improvement processes to find and correct the root cause of mistakes and problems in order for improvements

such as equipment design and operational procedures to function.

- Daily efforts are being made to improve safety and quality, but we would like to see the company further strive to prevent the recurrence of human errors and nonconformances by further improving the ability to ascertain conditions in the field.
- Awareness about the importance of education and training has been heightened. In particular, as the number of employees who have no experience in operating nuclear power plants increases, practical experience and training using simulators are important, and we commend the company for steadily improving the capabilities of its operators. We expect that the company will continue to further improve technological capability by developing and implementing additional education and training programs.
- Outside organizations like the WANO and IAEA can provide information to enhance safety and technical capabilities. In addition, the WANO and IAEA can provide an independent assessment of TEPCO HD's progress. We would like TEPCO HD to incorporate reviews from external agencies such as WANO and IAEA.

[Strengthening Emergency Response Capabilities]

- We commend TEPCO HD for improving its ability to respond to emergencies by repeatedly conducting general training based on various scenarios in order to prepare for emergencies. We would like to see the company not only enhance this emergency response ability based upon prepared procedures and rules, but also identify problems and expand the scope of potential emergencies it can foresee through training, thereby reducing the number of unpredictable situations and cultivating the ability to flexibly respond to unforeseen circumstances.
- Examples of strengthening emergency response is the construction of a water reservoir, and the installation of a filter vent equipment and alternative circulation cooling systems at the KK site, reflecting the lessons learned from the Fukushima nuclear accident.
- We commend the efforts being made at Headquarters and at each site amidst the Covid-19 pandemic. We would like the company to continue to strive to improve response capabilities as part of its emergency response.

[Strengthening Risk Communication]

- Understanding risk communication and awareness of disclosing information timely on risks is improving. We would like the entire organization to continue to be aware of these issues.
  - In order to ensure effective communication, especially during emergencies, we would like to see a continuation of suitable information gathering within the company, as well as the strengthening of mechanisms for quickly and accurately disseminating information, and also continued education and training.
  - We expect that employees will become more sensitive to social concerns as they listen to the opinions of the community and apply that sensitivity in the course of their duties.
  - We commend risk communicators for striving to improve their skills and their ability to promote dialogue with the community through education and training. It would be advantageous for risk communicators to play a larger role and take more professional responsibility upon obtaining understanding throughout the entire company about the role that risk communicators play.

[Improving Internal Auditing Functions]

- Internal auditing departments serve an important function in the organization. We commend the Nuclear Safety Oversight Office (NSOO) for improving its performance via reports made to the Board of Directors on the results of field observations. The importance of the NSOO will increase as KK begins operations in the future. We would like the Nuclear Safety Oversight Office to continue to enhance and strengthen the function to identify organizational weaknesses in light of excellence throughout the world as a body independent from the Nuclear Power Division, such as reinforcing human resources who have expertise in nuclear safety monitoring in the future, and improve nuclear safety.

[Reducing Exposure Doses]

- We commend the efforts that have been made at the Fukushima Daiichi Nuclear Power Station to reduce radiation exposure through work environment improvements, which has enabled workers to wear normal uniforms and dust masks in most areas at the site. We would like to see Management continue to engage in such efforts throughout the decommissioning activities.

Conclusion:

The NRMC believes that after more than eight years of engaging in nuclear safety reforms, TEPCO HD is making progress for improving safety.

Self-assessments have been strengthened and efforts are being made to independently identify weaknesses and make improvements. Along with improving skills related to safety/quality and communication, TEPCO HD must continue its improvement cycle, and include internal auditing functions in that process.

TEPCO HD must never forget that the biggest regret about the Fukushima Nuclear Accident is the fact that TEPCO HD was convinced that “safety had already been established.” We ask that TEPCO HD continue to establish the achievements of nuclear safety reforms in the corporate culture and strengthen safety into the future.

Management must ensure that all the activities engaged in by TEPCO HD are in line with the reform objectives, lead by example in regards to prioritizing safety, and quickly and accurately providing information to society.

The NRMC will monitor TEPCO HD’s initiatives to independently and continually improve safety, and will inform society of the results of such initiatives.

(The above are the monitoring results as of January 27, 2021)

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Important postscript in light of the recent series of incidents

From the time around the NRMC meeting was held on January 27 until March, we have learned of a series of incidents at the Kashiwazaki-Kariwa Nuclear Power Station and the Fukushima Daiichi Nuclear Power Station, such as the unauthorized use of an ID card, the discovery of unfinished safety measure renovations, and the partial loss of function to nuclear material protection equipment at KK, and the failure to repair a seismometer and delays in conveying information at 1F.

It is extremely regrettable that these incidents were allowed to occur despite the continual efforts that have been made by TEPCO. TEPCO will, of course, thoroughly ascertain the causes of these incidents and strive to prevent recurrence, but the NRMC views these incidents in the following light.

When ascertaining the causes of this series of incidents and formulating countermeasures, TEPCO must not forget the principle that “people will make mistakes,” and the NRMC would like TEPCO to return to its most basic approach to countering this fact, namely implementing multilayered countermeasures.

Furthermore, when examining safety culture and company culture, TEPCO must not engage in abstract reflection about how “safety awareness was lacking,” “efforts to improve were lacking,” or “awareness was lacking,” but rather examine the extent to which safety culture has permeated throughout each layer of the organization, from upper management to personnel in the field, and then ascertain the root causes of these incidents and examine them from detailed perspectives. When doing this, we would like TEPCO to deliberate and implement policies for clarifying the roles and responsibilities of each individual as they pertain to nuclear safety.

When disclosing incidents that pertain to nuclear material protection, TEPCO, of course, must not forget the importance of maintaining nuclear material security. However, nuclear leaders must deliberate public disclosure policies in order to mitigate concern and suspicion amongst society, and regain trust.

TEPCO is currently in the process of ascertaining the causes of these incidents and deliberating/implementing countermeasures, and the NMRC will examine the conclusions that are reached and how they were reached.

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Nuclear Reform Monitoring Committee

Chairman Dr. Dale Klein

Member Masafumi Sakurai

Member Seiichiro Onishi

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