

**Summary of the Seventh Meeting of the Nuclear Reform Monitoring Committee,
1 December 2014**

Location: TEPCO Headquarters 10F West Side Conference Room

Participants: Dr. Dale Klein (Chairman)
Lady Barbara Judge CBE (Deputy Chairman)
Masafumi Sakurai (Member of the Committee)
Fumio Sudo (TEPCO Chairman, Member of the Committee)
Kazuhiro Suzuki (Secretary General)
Naomi Hirose (TEPCO President and CEO, and Chief of the Nuclear Reform Special Task Force)
Takafumi Anegawa (TEPCO Managing Executive Officer, Secretary-General of the Nuclear Reform Special Task Force)
Naohiro Masuda (Chief Decommissioning Officer, President of Fukushima Daiichi D&D Engineering Company, Managing Executive Officer)
Dr. John Crofts (Head of Nuclear Safety Oversight Office)
Ms. Chisa Enomoto (Head of Social Communication Office, Executive Officer)

Observers:

Shotaro Okawara (Managing Executive Officer)
Keita Nishiyama (Executive Officer)
Shinichiro Kengaku (Executive Officer, Deputy Director of the SC Office)
Takehiko Ota (Executive Officer)

Opening Remarks by the Chairman:

Dr. Klein underscored the committee's independence and its commitment to provide objective advice. He noted progress in the development of TEPCO's safety culture but that more progress is needed. He noted progress in the development of Key Performance Indicators (KPI), but emphasized that safety culture cannot be reduced to just a number. He also noted that the Nuclear Safety Oversight Office is performing well.

It is important, he said, to acknowledge that all the reactor cores and spent fuel pools are being cooled, and he congratulated TEPCO on the safe and timely removal of fuel from Unit 4. He said the committee would look forward to a report on water management at Fukushima Daiichi, and noted that communication in general is improving but needs to improve further.

With respect to Kashiwazaki-Kariwa NPS (KK), he said the committee was looking forward to an update, and observed that while the KK restart may be

technically easier to achieve than the decommissioning of Fukushima Daiichi, it will be important to proactively communicate to the public about the enhancements that have been made at KK.

Remarks of the Members of the Committee:

Lady Judge:

Lady Judge noted that the Nuclear Safety Oversight Office, which reports directly to the Board, has made significant reports with serious recommendations that have been accepted and acted upon by Management. She noted it has been asking hard questions and making a positive difference in the safety program, particularly in radiation protection by educating employees on the principle of ALARA (“as low as reasonably achievable”). Room remains for improvement, she noted, particularly in nuclear safety assurance and the training of personnel.

She said she is pleased that TEPCO has begun to improve risk communication, and using visuals, photos and animation to explain technical information to the public. She noted the importance of public understanding of what happens within the power plants. Referring to her experience earlier in the year visiting local mothers and midwives while accompanied by a radiation expert, she emphasized the importance of listening to local women in Fukushima when designing communication materials. Further improvements are needed in risk communications, she said, particularly so that the local populations can understand the changes being made.

Mr. Sakurai:

Mr. Sakurai noted progress in the development of safety awareness, and noted that while KPIs have played a role, they are a means rather than an end. He also noted the major progress in holding joint drills with surrounding communities, specifically the joint drill held with Niigata Prefecture, as well as at KK and Fukushima Daiichi, and said their crucial role is to discover and correct problems.

With regard to risk communications, he said he would like to see studies done on a variety of issues including timeliness, accuracy, and effectiveness. He noted the completion of the Unit 4 fuel removal, and also said TEPCO made good use of the information obtained from removing Unit 3 rubble when it began removing the Unit 1 cover, employing a method that is safer and less likely to affect neighboring areas. He also emphasized the importance of making safety more important than meeting schedule targets.

Mr. Sudo:

Noting his role as TEPCO Chairman since April 1, and his frequent contact with President Hirose and his staff, Mr. Sudo expressed his respect for how TEPCO has faced unique challenges over the past six months and produced results. At the same time, he said, the question remains whether it can restore trust and be accountable to all stakeholders, particularly the people of Fukushima and Niigata prefectures. The most important thing, he said, is “power of execution,” the ability to accomplish daily tasks steadily, safely, and transparently. And as it relates to safety, he said, the important thing is to create intangible values and rules based on a “today more than yesterday, tomorrow more than today” attitude. He noted that the very experienced vice presidents at Daiichi D&D Engineering Company who have come from Mitsubishi Heavy Industries, Hitachi GE Nuclear Energy, and Toshiba all believe TEPCO’s “power of execution” needs improvement. This need extends, Mr. Sudo said, to risk and social communications. He said TEPCO’s executives should double the amount of time they are spending on strengthening power of execution.

Remarks of the Chief of the TEPCO Nuclear Reform Special Task Force, President Hirose:

Noting that progress has been made on a number of reforms during the two-year existence of the Committee, President Hirose noted the challenge of quantifying improvements in safety culture through KPIs. While the company is committed to this effort, it will do more than consider safety culture in solely numerical terms and aims to establish a solid culture. He noted the important role of the NSOO in inculcating such a culture, and noted that his frequent talks with Dr. Crofts have helped him develop a grasp on the issues.

That effort, he said, takes time and getting good feedback is difficult. Over a two-week period, 70-80 senior managers from throughout the Nuclear Power Division were brought to training camps, and concerns were expressed about “safety” and “process” being perceived in the field as tradeoffs. Efforts are being made to ensure that safety takes precedence in actual operations.

With regard to communications, he said, the company has created a Listening Command Center that allows it to effectively monitor social media, and has also begun to take advantage of computer graphics and other tools to create materials that are easy to understand.

Drills, he said, are being held every month, and when issues are surfaced they are addressed and drills are repeated using different scenarios to ensure that any other issues are identified. He noted that the road ahead remains challenging, including the need to improve worker safety, and he expressed the desire to continue to receive the Committee’s advice.

Report on the Progress of the Nuclear Safety Reform Plan

Task Force Secretary-General Anegawa reported on the progress of the Nuclear Safety Reform Plan and on studied into potential KPIs for measuring the degree to which the reforms identified in the Plan have been realized. His report was followed by discussion:

Nuclear Safety Culture

In response to a question from Dr. Klein on how emergency drills at KK have been perceived by the local community, Mr. Anegawa noted that while earlier drills involved only TEPCO personnel, Niigata Prefecture sponsored the November 11 drill, and also observed various drills when performing their on-site inspection of the power station. This enabled the community to understand TEPCO's initiatives, and provided feedback as well.

Dr. Klein noted the innovative nature of the KPIs being developed, and suggested they be shared in technical conferences to provide dialogue and feedback, in part because they may be useful to other utilities. Lady Judge added that it is important to express the KPIs in terms that people throughout the organization can understand, and to continue to evolve them over time so that the TEPCO safety culture can be the highest in the world. Mr. Anegawa agreed with the value of outside input, and noted that the KPIs were created to conform to the 10 world-standard traits used by INPO and WANO.

Mr. Sudo observed that there are no data to correlate the achievement of KPIs with an increase in safety or an absence of disasters, and that for this reason they tend not to be used in the steel industry. The crucial thing here, he said, is for TEPCO to use them and turn them into a shared language for nuclear safety. President Hirose said that once the KPIs are fine-tuned there is room for creativity in their use. He said he wants the company to settle on how it will interpret them, share them, and use them to improve performance, rather than have them be ends in themselves.

Nuclear Safety Oversight Office

In response to a question from Lady Judge on what TEPCO is doing to protect plants from terrorism and internal sabotage, Dr. Crofts noted that IAEA standards cover physical protection, the security of people and information, and cyber security. TEPCO is working to comply with those standards, he said. A British expert in this area has conducted on-site inspections at headquarters as well as the three nuclear power stations, and will provide guidance. Dr. Klein noted that this would be a particular challenge at Fukushima Daiichi given the large workforce, and Lady Judge added that the matter was further complicated by the large proportion of contractors. Mr. Anegawa noted that TEPCO will work to parallel initiatives in cyber security currently underway at the U.S. Nuclear

Regulatory Commission, but that it will take a considerable amount of time.

Risk/Social Communications

Mr. Sudo noted that the crucial metric must be whether communications have increased trust. Mr. Sakurai said he would like to see TEPCO compile information about how it has handled risk communications, and proposals for future responses.

There was discussion about risk communications surrounding the restart of KK and whether the communications are sufficiently robust. Ms. Enomoto said that a KK working group has been established to analyze the information that people, especially women in Niigata Prefecture, want, but she said more studies are needed to determine what local residents want. Lady Judge emphasized the importance of reaching women as a means to educate entire families. Dr. Klein urged the company to closely observe the experience of other restarts, such as Sendai (Kyushu), and learn from it to proactively address the issues of KK.

Status of Initiatives at the Kashiwazaki-Kariwa and Fukushima Daiichi Nuclear Power Stations

Mr. Anegawa reported on the status of safety improvement strategies at Kashiwazaki-Kariwa, while Daiichi D & D Engineering Company President Masuda reported on that of decommissioning and decontaminations measures being undertaken at Fukushima Daiichi. The reports were followed by discussion:

Kashiwazaki-Kariwa Nuclear Power Station

In a discussion about KK's ability to withstand a tornado, Mr. Anegawa reported it can withstand a tornado of 3 on the Fujita scale even though it would not be required to withstand more than an F2 tornado. Nevertheless, Dr. Klein expressed concern that all equipment at KK is put in one place, potentially rendering it vulnerable. Mr. Anegawa responds that the equipment is firmly sheltered indoors, so that possibility of a total loss of functionality due to a tornado is low. Noting that new regulatory standards prohibit failures, measures have been taken to prevent even outdoor diesel tanks from being ruptured by flying objects.

In response to a question from Lady Judge regarding what inspectors will be looking for when they come to KK, Mr. Anegawa noted that there are no quantifiable standards for nuclear safety culture and technological capability. This, he said, is why KPIs are being introduced.

Fukushima Daiichi Nuclear Power Station

In response to a suggestion from Dr. Klein that the D&D Company work closely with the communication office, Mr. Masuda noted previous challenges in coordinating communication activities, and noting difficulties in conveying messages relating to the freezing of trench water and removal of the Unit 1 cover. Mr. Sudo noted that the D&D Company, Corporate Communications, and Social Communications have been coordinating their activities and holding a monthly meeting. He asked them to record in the minutes of those meetings the problems they have identified, how they are addressing them, etc., and provide those minutes to the Nuclear Reform Monitoring Committee.

Dr. Klein noted that where safety considerations require deadlines to be reset, consideration must be given to when and how to announce that the original deadline will not be met. Mr. Masuda noted that, when changing a procedure, it is important that the average person understand the rationale of the decisionmaking.

Closing of Proceedings (findings of the Committee)

Dr. Klein noted that good progress is being made in some areas and that in others progress needs to be greater and faster. Lady Judge noted that there has been major progress over the past 18 months, particularly with respect to beginning the adoption of a safety culture throughout the company.

Mr. Sakurai said he would like to see the D&D Company and the Social Communications Office work closely together on external communications, particularly to improve trust in risk communications. He also said he would like to see reports identifying the problems that were identified and corrected as the result of drills. For the next meeting, he said, TEPCO should provide a comprehensive report not only on incremental improvements since the most recent meeting but rather a comprehensive report that identifies what has been achieved so far, and lays the foundation for the next step.

President Hirose noted that the next meeting of the Committee will mark two years since its inception. He expressed the hope that TEPCO will be able to make the progress the Committee is requesting in communications and preparations so that it can make a favorable report at that meeting. He also noted the contribution of the Nuclear Safety Oversight Office to the achievement those items for which the Committee praised the company.

Miscellaneous

- The next committee meeting is planned to be held on March 30.
- The points committee members identified will be compiled into a list for management to review how to respond.