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Progress in TEPCO's Nuclear Safety Reform

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Synopsis

On March 29, 2014, TEPCO issued the Nuclear Safety Reform Plan describing the background cause of our Fukushima Nuclear Accident and our plan to challenge organizational and cultural change to avoid recurrence of such a tragic accident and to pursue the excellence in safety. This report will reflect that background cause with some specific examples and introduce how we are currently implementing this reform plan.

After the TEPCO nuclear scandals were revealed in 2002 TEPCO started the Nuclear Renaissance activities that also pursued the organizational and cultural change, and focused on the leadership training that provided managers and supervisors with communication skills and methods to improve work process and peer group activities to pursue the standardization of work processes among 3 nuclear sites. Though these attempts resulted in a certain level of accomplishment, Fukushima Nuclear Accident could not be prevented. The reasons were summarized in the Nuclear Safety Reform Plan as follows:

- There was recognition that nuclear safety had already been sufficiently achieved, and the scandals were not considered to be an indication of the deterioration of safety culture. Therefore, the measures were not ample to methodically improve safety awareness.
- With regard to "safety awareness", there was no specific reform plan for the former nuclear executive management due to the recognition that the cause of scandals was a problem pertaining to middle management and organizations at the nuclear sites, despite the fact that the former nuclear executive management should have taken the initiative to improve "safety awareness" throughout the organization with unwavering resolve.
- Organizational authority and responsibility during an emergency were unclear. However, there was ambiguity regarding managerial authority and responsibility even during normal operation.

In the Nuclear Safety Reform Plan the negative spiral of shortfall in accident preparedness is described. This spiral shows why an organization, whose stated vision of safety as the top priority, could not prevent the Fukushima Nuclear Accident based on the relation and structure of problems on "safety awareness", "engineering capability", and "communication ability", even though there was not a single executive in the former nuclear executive management of TEPCO who did not consider "safety to be the top priority".

The business environment surrounding the electric utility has changed greatly over the last decade or so. In the case of TEPCO, the scandals in 2002 and the Niigata-Chuetsu-Oki Earthquake in 2007 had a major impact on our capacity factor, so our executive management made strong demands on the nuclear power division to increase the capacity factor. We assumed that safety was established after certain measures for severe accidents had been implemented and capacity factor was considered to be an important management challenge. Consequently, avoiding prolonged reactor shutdown was made into one axis of the risk map that determines work priority. Measures whose effect was difficult to assess and which do not directly contribute to improving the capacity factor, such as measures to make the battery rooms watertight, were not implemented or postponed. In such a situation, measures such as SCC and earthquake countermeasures were performed in order to secure, maintain and improve the capacity factor even at an excessive cost, thinking that such expenditures could be recovered as long as the capacity factor was improved, thus our dependence upon manufacturers increased. This results in a decrease in our technological capabilities and a high-cost structure. This degradation of technological capabilities became one factor in our decreasing ability to debate purely technological

arguments with regulatory authorities and the ability to disclose the residual risks of nuclear power. The deterioration of communication skills was accelerated by hesitation to engage in risk communication.

The following 6 pillars of measures were developed in the Nuclear Safety Reform Plan, and the report introduces how each measure is currently being implemented:

Measure 1: Reform starting from senior management

Measure 2: Enhancement of oversight and support for management

Measure 3: Enhancement of capability to propose defense in depth

Measure 4: Enhancement of risk communication activities

Measure 5: Reform of emergency response organization at the power station and Headquarters

Measure 6: Change of power station organization during normal operation and enhancement of firsthand technical skills

Country or International Agency

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