PF-4

Current Status and Challenges for Decommissioning of Fukushima Dai-ichi Nuclear Power Plants

Shunichi Suzuki
Tokyo Electric Power Company, Tokyo, Japan

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Abstract

Approximately twenty months have passed since the Fukushima Accident occurred.
Facts and lessons of the Fukushima Nuclear Accident will be presented. Secondly the current Status of Fukushima Dai-ichi Nuclear Power Station (NPS) will be introduced and finally, challenges for Decommissioning of Fukushima Dai-ichi Nuclear Power Plants will be discussed.

(1) Facts and Lessons of The Fukushima Nuclear Accident

This presentation reflects what actually happened at Fukushima Dai-ichi NPS (1F) and Fukushima Dai-ni NPS (2F), how the facilities were damaged and how TEPCO responded in the recovery process, analyzes the lessons learned specifically and finally proposes a basic direction of countermeasures.

(2) Current Status of Fukushima Dai-ichi NPS

Secondly, the progress status of mid-and-long term roadmap towards Decommissioning of Fukushima Dai-ichi Nuclear Power Units 1-4 will be presented, introducing the current status of plants, including Circulating Water Cooling, Achievement of “Cold Shutdown Conditions”, Monitoring Radiation Dose Rate, Unit 4 Spent Fuel Storage Conditions. Circulating Water Cooling Systems were established and treated contaminated water has been reused for injection into the reactors in order to cool down the reactor core. As a result, temperatures of the RPV bottom and inside PCV are stable below 100 degree Celsius via the Circulating Water Cooling.

(3) Challenges for Decommissioning of Fukushima Dai-ichi Nuclear Power Plants

Finally, challenges for decommissioning of plants will be discussed. Phase 1 is the period to the start of fuel removal from the spent fuel pool (Within 2 years). Phase 2 is the period to the start of fuel debris removal (Within 10 years). Phase 3 is the period to the end of decommissioning (After 30-40 years) .Especially, removal of fuel debris will be implemented in accordance with the following steps in light of the site situation, safety requirements, and R&D progress of the remote control technologies required in the operations. Due to the much more complicated situation than TMI-2, many R&D activities are needed to be conducted in parallel to the defueling procedures. To commence these projects, Government-supported R&D team has been organized among Government (METI, MEXT), National Labs and institutes (JAEA, AIST, CRIEPI etc), Plant Fabricators (Toshiba, Hitachi GE, Mitsubishi Heavy Ind.), Academic experts and TEPCO (and Japanese LWR owner's group). Because many unexpected situations are expected, flexible program management will be necessary and advices and counsels from the world community would be very much appreciated.