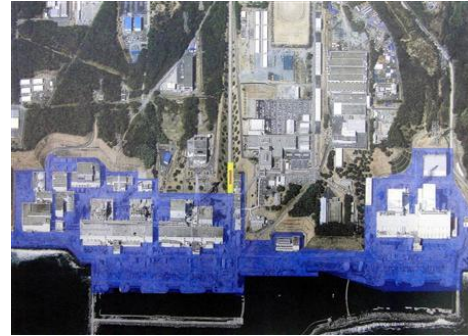


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*** Nuclear Fission Chain Reaction Was Safely Halted But Decay Heat of Fuel Was Not Cooled Down**

At TEPCO's Fukushima Daiichi Nuclear Power Station (comprised of 6 reactor units with a total installed capacity of 4,696 MW), which is located approximately 250 km north of Tokyo, immediately after the magnitude-9 earthquake, all control rods of Units 1, 2 and 3, which were in operation at the time of the strong quake, were reinserted or reactors scrammed, and as a result, the nuclear fission chain reaction was safely halted as an emergency measure. When external power to the nuclear power station was cut off because of the collapse of transmission line by the earthquake, backup power sources had started operation to run an emergency core cooling system, which means the reactors were safely shut down initially.

However, the giant tsunami, more than 14 meters high, that were triggered by the earthquake flooded and damaged this emergency system, causing the loss of all functions and making it impossible to keep the reactors under control. As all available power sources were lost, it became impossible to keep track of the operation parameters. As a result, the battery-powered lighting installed in limited areas and the headlamps carried by plant workers were the only means of inspection of the damage to equipment and facilities.

As the function of cooling the decay heat worked only partially at Units 1, 2 and 3, which were in operation when the accident occurred, reactor water there vaporized. As a result, fuel was not cooled down and the upper part of the fuel rods was exposed above

water level. This condition presumably damaged the fuel rods. It is presumed that the reaction between high temperature zirconium alloy (material of the fuel casing) and water or steam was happened to generate hydrogen within the reactor pressure vessel. At Unit 4, where all fuel rods had been removed and placed in the fuel pool for the purpose of regular inspection, the loss of power sources apparently reduced the water circulation cooling function of the pool and caused the upper part of the fuel rods to be temporarily exposed above water level.

*** Hydrogen Explosion Released Radioactive Materials into the Atmosphere around the Power Plant (No Fire Occurred)**

Hydrogen generated within the reactor pressure vessel leaked into the containment vessel and the reactor building and it eventually accumulated in the upper part of that building. A hydrogen explosion occurred when the hydrogen reached a concentration at the explosive limit and underwent a chemical reaction with oxygen in the air.

A hydrogen explosion occurred at Unit 1 on March 12 and at Unit 3 on March 14. These explosions blew off the roofs and other parts of the reactor buildings, releasing radioactive materials leaked from the pressure vessels. At Unit 4, small fires occurred on March 15 and 16, although the fuel rods had been removed from the pressure vessel and placed in the fuel pool for the purpose of regular inspection. That was presumably because hydrogen generated as a result of excessive heating due to the malfunction of the fuel cooling system of the fuel pool caused fires. Radioactivity of iodine and cesium thus were released into the atmosphere.

The radiation released by the explosions has been detected as a result of the ongoing detailed monitoring surveys. However, given that no major explosion has occurred since the hydrogen explosions mentioned above, it may be presumed that no additional radioactive gasses have been released. Unlike in the case of the Chernobyl accident, a large-scale explosion by chain reaction and fire have not occurred at Fukushima Daiichi Nuclear Power Station. Therefore, the radioactive particles released into the atmosphere presumably include a miniscule, negligible amount of materials other than cesium, such as strontium.

*** IAEA Estimates the Total Radiation Dose at 10% of the Radiation from the Chernobyl Accident**

The Japanese government assesses the severity of the Fukushima accident as Level 7 based on the INES.

The IAEA announced their estimates the amount of radioactive materials released so far as a result of the Fukushima accident at approximately 10% of the amount released in the Chernobyl accident.

*** Massive Water Pouring to Cool Down Reactors and Leakages of Highly Contaminated Water**

At Fukushima Daiichi Nuclear Power Station, the top priority for the moment is restoring stable cooling for the cooling-down of the decay heat. However, water was poured into the reactor buildings from the outside as a stopgap measure and this presumably led to the formation of pools of water with a high concentration of radioactive materials washed off from the equipment and facilities surrounding the reactor containment vessels (the total volume of such water is estimated at approximately 60,000 tons). Given that the bottom of the containment vessel of Unit 2, for example, has been damaged, contaminated water has presumably leaked out of the containment vessel.

As a high level radiation from the contaminated water makes it difficult for workers to approach the equipment or make inspections at the power station that they need to operate or inspect, it is urgently necessary to remove the contaminated water.

*** Effort to Halt the Release of Additional Radiation into the Environment**

The release of radioactive materials into the surrounding areas was caused by hydrogen explosions that occurred during the first several days after the occurrence of the nuclear accident. Thereafter, radiation in the seawater was detected following the discharge of contaminated water (not so high level) into the sea.

Currently, measures to restore the cooling function at the power plant, as well as various other measures, are being taken in order to prevent the release and spread of additional radioactive materials into the environment.

(End)