



As coolant injection to the reactor core was suspended, the water level in the reactor declined and the fuel was exposed. This caused core melt and damaged the pressure vessel. Additionally, under high temperature due to core damage, steam and zirconium of the fuel clad reacted to generate a large amount of hydrogen, which was released within the containment vessel together with steam.

In the meantime, core damage increased the temperature and pressure in the containment vessel and deteriorated its confinement function, causing gaps in such parts as the penetrator that extends to the outside of the containment vessel. Hydrogen generated due to the reaction of the steam and metal of the clad covering nuclear fuel leaked through the gaps into the reactor building and accumulated there. It led to a hydrogen explosion.

Coolant injected into the reactor leaked from the pressure vessel and containment vessel and a large amount of high-level radioactive-contaminated water accumulated underground below the reactor building and turbine building and partially flowed out into the ocean.

The damage to the pressure vessel and deterioration of the confinement function of the containment vessel caused a leak of steam containing radioactive materials. In addition, radioactive materials were discharged into the air due to hydrogen explosions at the reactor buildings and containment vessel vent operations.

In this manner, radioactive materials were released into the environment in the form of outflow of high-level contaminated water into the ocean and discharge of radioactive materials into the air.

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