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Earthquake struck Kashiwazaki-Kariwa Nuclear Power Station (The 2nd news)

At 10:13 a.m. on July 16, 2007, a strong earthquake measuring 6.8 on the Richter scale struck Chuetsu area in Japan, resulting in automatic shut down of unit 2, 3, 4 and 7 at Kashiwazaki-Kariwa NPS as designed, which is located approximately 16 km from the epicenter. Unit 1, 5 and 6 were not in operation for annual outage when the earthquake occurred. Although Tokyo Electric Power (TEPCO) is still conducting investigations, there is no environmental impact.

The maximum acceleration observed at the station was 680 gal. The designed acceleration at the observation point is 273 gal. Although the earthquake was an exceeding assumption, the reactors in the operating mode were shut down under control, and the units are currently in a stable cold shutdown condition. Since the occurrence of the earthquake, TEPCO has examined the facilities of all seven units. The nuclear power plant safety of the station is basically ensuredA detailed investigation on seismic safety including seismic data analysis will be carried out. According to TEPCO, seismic wave profile data had disappeared among the seismic data collected from the 63 existing seismographs.(There are total 97 seismographs in the station.)However, the company believes sufficient analyses will be possible based on all data for the main quake is available for all units.

The Nuclear Safety Commission (NSC) of Japan had a meeting on July 19, and commissioners reported the result of in-site investigation conducted in the morning.Nuclear and Industrial Safety Agency reported the impact on the station due to the earthquake in the meeting. TEPCO reported the situation of a fire broken out at the house transformer of unit 3.

Dr. Suzuki, Chairman of the NSC, stated as follows;

The nuclear power plant safety of the station is basically ensured, the impacts on the station are not insignificant, including the fire at its transformer facility. Although no snap decisions should be made in view of further possible fresh and corrected inputs, the information disclosed so far does not foretell any serious safety impacts on nuclear reactors concerned. The reactors in the operating mode were shut down under control. The most significant safety measures functioned, as intended in the design, of protecting high radiations in the reactors in the multiple-defense and multi-layered manners.Consequently the nuclear plant safety is maintained and this indicates the basic appropriateness of seismic regulation concepts including the relevant regulatory guides. It is not the time to contend the necessity of revising again the seismic regulatory guide. Seismic safety is of highest concern of the nation. The NSC considers it of particular importance to conduct soonest the necessary safety checks.Earliest, as practical, evaluations are what the NSC requests to the operator(s) and the regulatory body.

There is new information related to the incidents due to the earthquake as follows;

Resulting from the earthquake, the fire broke out at the house transformer of unit 3, which was extinguished in about two hours at 0:10 p.m.According to the result of insite investigation conducted by the NSC, the transformer has a fire prevention wall, and it was confirmed that there was no hazard for spreading fire.

Water in the spent fuel pool of unit 6 sloshed around.Some leaked into non radiation controlled area on the third floor and mezzanine, and was discharged to the sea via a discharge channel. The amount of water discharged to the sea was estimated about 1.2 m3 containing 9 x 104 Bq radioactivity in total. Because the water was diluted to one-several hundred millionth the legal limit of the activity concentration for discharge water from the station, which is required by law, it was estimated that there was no impact on the environment. It is presumed that water spilled over from the spent fuel pool to the reactor building refueling floor (controlled area) subsequently dripped down to the uncontrolled area via cable and conduit of the refueling machine. The discharge had stopped on July 16.

In addition, iodine and particle radioactive materials (chromium 51 and cobalt 60) were detected at the filter of stack at unit 7 during the weekly survey on July 17. The amount of radioactivity released from the stack to date is about $4 \times 108Bq$ (equivalent to an exposure of about approximately $2 \times 10-7$ mSv). Regulatory limit of annual exposure for an ordinary person is 1 mSv, and it was estimated that there was no impact on the environment. It is presumed that iodine and particle radioactive materials in the main condensers released via the stack due to the delayed manipulation for stopping the turbine gland steam exhauster during shut down of the unit.

As of July 19, approximately 70 damages on equipment in the station were identified and further investigation has been proceeding.

Above information is as of July 19 and will be updated as the further investigation by TEPCO will be carried forward.

Reference:

Nuclear Safety Commission of JapanURL ; http://www.nsc.go.jp/english/english.htm

Tokyo Electric Power Co.URL ; http://www.tepco.co.jp/en/index-e.html

Japan Nuclear Technology Institute Rev. 0 July 20, 2007

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