On July 16, 2007, a magnitude-6.6 quake occurred near the Kashiwazaki-Kariwa plant site. The Kashiwazaki-Kariwa plant site in Japan-the world's largest, with seven reactors producing 8,2120 MW. The site consist of 5 BWRs and 2 ABWRs. The epicenter of the quake was about 8-10 km from the Kashiwazaki-Kariwa plant site. Units 3, 4, and 7 were in operation at time of the event, Units 1, 5, and 6 were shutdown and Unit 2 was in startup. As a result of the quake Units 2, 3, 4, and 7 received automatic Scrams, the auxiliary transformer outside Unit 3 was on fire, drums of low-level radioactive waste fell over, water from the spent fuel pool was on the refueling floors due to sloshing from the spent fuel pool, minor transformer and generator oil leaks and seven workers suffered minor injuries. It is estimated that 1200 liters of radioactive water was discharged to the sea with a total activity of about 2432 nanocuries and 8.1E6 nanocuries of radioactive iodine and other radioactive particulate matter was released from the Unit 7 main ventilation stack with no other radioactivity found in the other stacks (estimated dose to the public less than 1 millionth of annual limit).

Japan is located in a very active seismic setting that is significantly higher than California. Only two US plants have active faults nearby. The US facility located closest to a potentially active fault, the Diablo Canyon plant in California, is built to withstand a seismic event exceeding the magnitude of the quake that occurred in Japan. The Diablo Canyon plant is located ~5 km from the nearest fault, and has been evaluated for a magnitude 7.5 earthquake. The other US plant located in California is San Onofre, which is located ~8 km from the nearest potential fault, and is designed for a magnitude 7.0 earthquake. These California plants are designed to withstand an earthquake greater than the one that occurred in Japan. The Diablo Canyon and San Onofre plants also have an auto-trip mechanism for earthquake initiated plant shut-down. Both plants have automatic shutdown during a seismic event above a specified level. Other plants in the US are located in areas of much lower seismicity than that of California. Is should be noted that the seismicity at various NPP sites varies depending on the location of any particular power plant. At the power plant site in Japan, the estimated seismicity is substantially higher than that for any US NPP east of the Rocky Mountains. US Nuclear Power Plants are designed to meet the criterion in 10 CFR 100, Appendix A, which requires the ground motion be determined by the maximum historical earthquake.

Japanese officials had been under the assumption that the nearby fault that shifted last week is a strike-slip fault, in which the two sides of the fault move horizontally against each other. However, the fault mechanism after the quake indicated that the earthquake was generated by a thrust fault (usually a dipping fault plane, and the upper block moves upwards relative to the downside block), which usually causes more damage to the structures located on its upper block. Because Diablo Canyon is also located near a fault, Hosgri fault, which is considered mostly as a strike-slip fault but with a small potion of thrust component (about 2/3 strike slip and 1/3 reverse). It could be concluded that the Hosgri fault can also behave like the earthquake fault in Japan, thought to be a strike-slip fault but generating thrusting events.

Based on extensive search on seismic background related documents by Yong Li of the NRC staff, the NRC staff has not found anything indicating that the earthquake fault for the Niigata earthquake was thought to be a strike-slip fault. In fact, many faults in the region were considered as reverse faults because of its compressional basin background. The earthquake fault mechanism confirmed that reverse faults dominating in the geologic history are still in control. Fault mechanism from the earthquakes occurred along the Hosgri fault is strike-slip type. Therefore, there is no analogy between the Hosgri fault and the Niigata earthquake fault (7/15/2007) in terms of their fault types.