Major Differences between the Chernobyl accident and the accident at the Fukushima Dai-ichi Nuclear Power Station

April 18, 2011

	Chernobyl	Fukushima Dai-ichi
Cause of accident	Violations of operating rules and regulations during an emergency shutdown test.(including disabling safety systems)	Loss of cooling functions resulting from the loss of power sources due to the tsunami, though the reactors shut down automatically during the earthquake.
Modality of accident	The reactor, without a containment vessel by design, exploded at the core. Updrafts due to the explosion and the subsequent fire dispersed radioactive substances contained in the core across a wide area.	With the containment vessels in place and no major damage to the pressure vessels, most of the radioactive substances are thought to remain within the pressure vessels.
Amount of radioactive materials released (Iodine-131 equivalent*)	5.2 million terabecquerels (5.2×10^{18} Bq) (Source: IAEA Report of the Chernobyl Forum Expert Group 'Environment')	NISA estimate: 0.37 million terabecquerels (3.7×10^{17} Bq) NSC estimate: 0.63 million terabecquerels (6.3×10^{17} Bq) (About one-tenth that of the Chernobyl accident)
Casualties	28 people died due to acute radiation sickness (massive radiation exposure) (Source: IAEA Frequently Asked Chernobyl Questions) (Note: Acute fatal exposure is 8,000 mSv or more.)	No one has died. (At present, no one has suffered from radiation damage due to radiation exposure, either. The maximum allowable exposure is limited to 250 mSv for workers at the plant.)
Evacuation and exposure of surrounding residents	Surrounding residents were ordered to evacuate *after* a large amount of radioactive substances was released into surrounding areas. Many of the residents were exposed to high levels of radiation until the evacuation was completed.	The evacuation directive was issued *before* the release of radioactive substances. This limited local residents' exposure to radiation at a low level.

* The estimates by the Nuclear and Industrial Safety Agency (NISA) and the Nuclear Safety Commission (NSC) have been converted to Iodine-131 equivalents by NISA according to the INES User's Manual.