

NISA Orders Safety Measures in Wake of March 11 Earthquake: Power Utilities Must Secure Emergency Power Sources

The Nuclear and Industrial Safety Agency (NISA) has instructed all nuclear power stations (NPSs) in Japan to implement safety measures for emergencies based on the experience of the recent earthquake disaster on March 11. It will review the responses of each power utility company in the country by the end of April.

NISA will ascertain, analyze and evaluate the full picture of the accident, including the mechanism whereby a major tsunami following the Great East Japan Earthquake of March 11 devastated the Fukushima Daiichi NPS, owned and operated by the Tokyo Electric Power Co., Inc. (TEPCO), and will then take sweeping action.

NISA stated that the direct cause of the nuclear disaster and its spreading consequences was the loss of three functions on account of the tsunami, namely: (1) emergency power sources, (2) seawater facilities to ultimately release heat to the sea, and (3) cooling of the spent fuel storage pool. A ministerial ordinance has been revised to the effect that even if a tsunami causes those NPP functions to be lost, the cooling function must be recovered at the same time damage to the reactor core and spent fuel are prevented and the release of radioactive substances is controlled.

NISA has required all NPSs in Japan to address six items, as follows: (1) making urgent inspections of equipment and facilities needed to respond to emergencies caused by tsunami; (2) reviewing emergency response plans and implementation drills; (3) securing power sources in emergencies; (4) enabling ultimate heat removal in emergencies; (5) securing the cooling of spent fuel storage pools in emergencies; and (6) taking measures immediately needed at each site based on structure and other elements.

By the end of April, NISA will strictly review the state of implementation of emergency safety measures submitted by the power utilities. As for medium- and long-term measures, NISA will also take action at facilities, including seawalls, to prevent disasters based on an assumed tsunami height calculated after accident investigations and other actions by experts and specialists in the future.

When an aftershock (maximum intensity of 6-plus out of 7 on the Japanese "tremor intensity scale") struck off Miyagi Prefecture on the evening of April 7, none of the three emergency diesel generators were available for Unit 1 of the Higashidori NPS, owned and operated by the Tohoku Electric Power Co., Inc., which was not operating at the time due to a periodic inspection. Two of the generators were undergoing periodic inspections, and one had an oil leak. On April 10, the Nuclear and Industrial Safety Agency (NISA) directed Japan's power utilities to change their safety maintenance rules so that two or more emergency diesel generators are always available, even when reactors are experiencing cold shutdown.

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