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**Fukushima Daiichi Nuclear Accident; based on the Final Report of Atomic Energy Society of Japan**

NAOTO SEKIMURA, Department of Nuclear Engineering and Management, The University of Tokyo

The Atomic Energy Society of Japan (AESJ) published the Final Report of the AESJ Investigation Committee on Fukushima Daiichi NPS Accident in March 2014. The AESJ is responsible to identify the underlying root causes of the accident through technical surveys and analyses, and to offer solutions for nuclear safety. At the Fukushima Daiichi, Units 1 to 3, which were under operation, were automatically shut down at 14:46 on March 11, 2011 by the Tohoku District-off the Pacific Ocean Earthquake. About 50 minutes later, the tsunami flooded and destroyed the emergency diesel generators, the seawater cooling pumps, the electric wiring system and the DC power for Units 1, 2 and 4, resulting in loss of all power except for an air-cooled emergency diesel generator at Unit 6. Unit 3 lost all AC power, and later lost DC before dawn of March 13. Cooling the reactors and monitoring the results were heavily dependent on electricity for high-pressure water injection, depressurizing the reactor, low pressure water injection, and following continuous cooling. In Unit 3, for example, recent re-evaluation in August 2014 by TEPCO shows that no cooling water was injected into the reactor core region after 8PM on March 12, leading to the fuel melting from 5:30AM on March 13. Even though seawater was injected from fire engines afterwards, the rupture of pressure vessel was caused and the majority of melted fuel dropped into the containment vessel of Unit 3. The estimation of amount of radioactive materials such as Xe-133, I-131, Cs-137 and Cs-134, emitted to the environment from Units 1 to 3 is discussed in the presentation. Direct causes of the accident identified in the AESJ Report were, 1) inadequate tsunami measures, 2) inadequate severe accident management measures and 3) inadequate emergency response, post-accident management/mitigation, and recovery measures. These were caused by the following underlying factors, i.e., a) lack of awareness on the roles and responsibilities by experts, b) shortfalls in establishing safety measures and fostering safety awareness by utilities, c) lack of safety awareness by the regulatory body, d) inadequacies in attitude of learning from efforts and collaborations in the international community, and e) shortage of qualified personnel to ensure safety and inadequacies in organization and management framework.