

According to U.S. researcher, Fukushima reactor had meltdown 3.5 hours after cooling system collapsed

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Fukushima reactor had meltdown 3.5 hours after cooling system collapsed: U.S. researcher

A meltdown occurred at one of the reactors at the Fukushima No. 1 Nuclear Power Plant three and a half hours after its cooling system started malfunctioning, according to the result of a simulation using “severe accident” analyzing software developed by the Idaho National Laboratory.

Chris Allison, who had actually developed the analysis and simulation software, reported the result to the International Atomic Energy Agency (IAEA) in late March. It was only May 15 when Tokyo Electric Power Co. (TEPCO) admitted for the first time that a meltdown had occurred at the No. 1 reactor at the Fukushima nuclear plant.

According to Allison’s report obtained by the Mainichi, the simulation was based on basic data on light-water nuclear reactors at the Laguna Verde Nuclear Power Plant in Mexico that are about the same size as that of the No. 1, 2, and 3 reactors in Fukushima.

According to the simulation, the reactor core started melting about 50 minutes after the emergency core cooling system of the No. 1 reactor stopped functioning and the injection of water into the reactor pressure vessel came to a halt. About an hour and 20 minutes later, the control rod and pipes used to gauge neutrons started melting and falling onto the bottom of the pressure vessel. After about three hours and 20 minutes, most of the melted fuel had piled up on the bottom of the pressure vessel. At the four hour and 20 minute mark, the temperature of the bottom of the pressure vessel had risen to 1,642 degrees Celsius, close to the melting point for the stainless steel lining, probably damaging the pressure vessel.

TEPCO, the operator of the crippled Fukushima nuclear plant, had tried to fill the containment vessel of the No. 1 reactor with water, but it decided to abandon the plan after it discovered that a meltdown had occurred at the reactor.

Masanori Naito, director in charge of safety analysis at the Institute of Applied Energy, said, “TEPCO could have conducted similar analysis at an early stage and assumed the meltdown had occurred. TEPCO should have prepared other cooling methods besides the method of filling the reactor with water.”

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<http://mdn.mainichi.jp/mdnnews/national/news/20110523p2a00m0na019000c.html>
