
Fukushima is the biggest industrial catastrophe in the history of mankind

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Scientific experts believe Japan's nuclear disaster to be far worse than governments are revealing to the public.

"Fukushima is the biggest industrial catastrophe in the history of mankind," Arnold Gundersen, a former nuclear industry senior vice president, told Al Jazeera.

Japan's 9.0 earthquake on March 11 caused a massive tsunami that crippled the cooling systems at the Tokyo Electric Power Company's (TEPCO) nuclear plant in Fukushima, Japan. It also led to hydrogen explosions and reactor meltdowns that forced evacuations of those living within a 20km radius of the plant.

Gundersen, a licensed reactor operator with 39 years of nuclear power engineering experience, managing and coordinating projects at 70 nuclear power plants around the US, says the Fukushima nuclear plant likely has more exposed reactor cores than commonly believed.

"Fukushima has three nuclear reactors exposed and four fuel cores exposed," he said, "You probably have the equivalent of 20 nuclear reactor cores because of the fuel cores, and they are all in desperate need of being cooled, and there is no means to cool them effectively."

TEPCO has been spraying water on several of the reactors and fuel cores, but this has led to even greater problems, such as radiation being emitted into the air in steam and evaporated sea water – as well as generating hundreds of thousands of tons of highly radioactive sea water that has to be disposed of.

"The problem is how to keep it cool," says Gundersen. "They are pouring in water and the question is what are they going to do with the waste that comes out of that system, because it is going to contain plutonium and uranium. Where do you put the water?"

Even though the plant is now shut down, fission products such as uranium continue to generate heat, and therefore require cooling.

"The fuels are now a molten blob at the bottom of the reactor," Gundersen added. "TEPCO announced they had a melt through. A melt down is when the fuel collapses to the bottom of the reactor, and a melt through means it has melted through some layers. That blob is incredibly

radioactive, and now you have water on top of it. The water picks up enormous amounts of radiation, so you add more water and you are generating hundreds of thousands of tons of highly radioactive water.”