

Japanese Trying to Stabilize Radioactive Fuel Pools, But Are Moving Too Slowly ... By a Decade

By Washington's Blog

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Tepco Moving To Secure Spent Fuel Pools ... But They May Be a Decade Too Late

Scientists say that the big Japanese earthquake last year has increased the chance of a big earthquake near the Fukushima reactors.

The Wall Street Journal <u>reported</u> in February:

The heft from last year's powerful March 11 earthquake shocked a sleeping fault line close to the Fukushima Daiichi nuclear plant back to life, according to a <u>new scientific study</u>. And based on their findings, the scientists who conducted the study warn the battered nuclear power plant should brace itself for another big one.

The new study from the European Geosciences Union, published on Tuesday, cautions that the seismic risk at the Fukushima Daiichi nuclear plant has increased because the magnitude 9 earthquake jolted the plates underneath the area into a more precarious position. But that's not all: The real problem may be the fluids forming as a result of the Pacific plate digging under the adjacent Okhotsk plate. Japan's northern region lies directly above the Okhotsk plate.

According to the scientists, the fluids threaten to swim up toward fault zones, where they can soak into the brittle crust of the earth along the fault line, reducing friction, pulling the fault lines apart and triggering another large earthquake.

While the epicenter of the March 11 quake occurred about 100 miles away from the Fukushima Daiichi plant, the scientists say the next big earth-shaker could be centered much closer. The scientists concluded it would be wise to strengthen the plant's infrastructure accordingly. The report did not predict when the earthquake will hit, except to say it would be in the "near future."

The team of geophysicists behind the study – all based at Tohoku University in Sendai City in northeastern Japan — analyzed a sample of over 6,000 earthquakes that occurred from June 2002 to October 2011, in the northeast region. With this data, they used seismic tomography to create a detailed portrait of the area that mapped out subterranean activity. The technique is similar to the way a CT or CAT scan can uncover tumors inside humans, the scientists explain.

The team focused on the strongest aftershock following the March 11 earthquake that was centered inland. That magnitude 7 temblor hit exactly a month after the March 11 quake, underneath Iwaki, a city located just 25 miles from the troubled plant.

The paper's parting words: "Therefore, much attention should be paid to the FNPP (Fukushima nuclear power plant) seismic safety in the near future."

Indeed, there have been <u>innumerable earthquakes</u> near Fukushima since the reactors melted down.

Senator Ron Wyden – a senior member of the Senate's energy committee who toured the plant earlier this month – has been <u>sounding the alarm about the danger to the spent fuel pools of another big earthquake</u>.

As the Wall Street Journal writes:

Another big earthquake or tsunami could send Fukushima Daiichi's fragile reactor buildings tumbling down, resulting in "an even greater release of radiation than the initial accident," Mr. Wyden warned in a Monday letter to Japanese Ambassador to the U.S. Ichiro Fujisaki.

In particular, Japan isn't moving fast enough to remove dangerous nuclear-fuel rods from the reactors, and the U.S. should offer its help to speed things along

Mr. Wyden's warning touches on what some experts think is the biggest problem at the Fukushima plant: another earthquake or tsunami that exposes the least protected of its nuclear fuel to outside air.

Fukushima Daiichi suffered meltdowns at three of its reactors last year after the March 11 earthquake and tsunami knocked out power in the area. Much of the nuclear fuel in those three reactors is thought to be in a melted lump at the bottom of the vessels that surround the core. That's bad, but at least the vessels shield the outside world from the radioactive fuel.

If the pool should spring a leak, or another earthquake bring the pool crashing down, all that fuel would be exposed to the outside air, letting them heat up and release massive amounts of radiation. Other reactors have spent-fuel pools too, but they contain less fuel.

Mr. Wyden points out, though, that the schedule allows up to ten years to get all the spent fuel in all the Fukushima reactor pools out — something he says is too risky.

"This schedule carries extraordinary and continuing risk if further severe seismic events were to occur," he wrote in his letter to Ambassador Fujisaki. "The true earthquake risk for the site was seriously underestimated and remains unresolved.

To be clear, Tepco seems to have some good ideas for stabilizing the fuel pool at reactor number 4, and eventually removing the spent fuel rods and storing them safely in "dry cask" storage. See this, this, this and this.

The problem is that the seismic dragon has apparently been awakened in the Fukushima

area ... and a decade is far too long to wait to deal with <u>one of the greatest threats facing</u> <u>humanity</u>.

If the geophysicists at the Tohoku University are right, a massive earthquake could hit very close to Fukushima at any time.

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