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By John Sullivan and ProPublica | June 9, 2011 | 9

Vk d u h H p d b S u b w

A [fire](#) in an electrical switch room on Tuesday briefly knocked out cooling for a pool holding spent nuclear fuel at the [Fort Calhoun nuclear plant](#) outside Omaha, Neb., plant officials said.

The safety of deep pools used to store used radioactive fuel at nuclear [plants](#) has been an issue since the accident at Japan's Fukushima nuclear plant in March. If the cooling [water](#) a pool is lost, the used nuclear fuel could catch fire and release radiation.

As ProPublica reported earlier, [fire safety is a continuing concern](#) at the country's 104 commercial reactors, as is the [volume of spent fuel](#) piling up at plants.

Officials at Fort Calhoun said the situation at their plant came nowhere near to Fukushima's. They said it would have taken 88 hours for the heat produced by the fuel to boil away the cooling water.

Workers restored cooling in about 90 minutes, and plant officials said the temperature in the pool only increased by two degrees.



Image: Nuclear Regulatory Commission

The fire, reported at 9:30 a.m., led to the loss of electrical power for the system that circulates cooling water through the spent fuel pool, according to a [report](#) from the Nuclear Regulatory Commission. A chemical fire suppression system discharged, and the plant's fire brigade cleared smoke from the room and reported that the fire was out at 10:20 a.m., the NRC said.

Mike Jones, a spokesman for the plant's owner, the Omaha Public Power District, said Fort Calhoun has a backup pump to provide water to the spent fuel in case the main system is lost. That pump, which runs on a separate power supply from the rest of the plant, was inspected and standing by on Tuesday, but plant operators restored main power to the pool before the emergency pump was needed, he said.

Fort Calhoun's single reactor has been shut down since April for refueling. The plant had already been operating under a heightened level of alert because of nearby flooding on the Missouri River, the NRC said. The cause of the fire remained under investigation this morning.

John Sullivan is an investigative reporter for [ProPublica](#), an independent, non-profit newsroom that produces journalism in the public interest.

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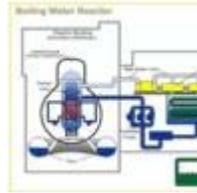
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Partial Meltdowns Led to Hydrogen Explosions at Fukushima Nuclear Power Plant

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They have fire brigades in Nebraska?

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It can't happen here, can it?

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Eh, it is unlikely that a SINGLE factor would create a Fukushima-like situation. The real issue is that operators seem to have put too little stock in the possibility that multiple problems can arise at the same time, and that they can have a single underlying cause, like the earthquake in Japan creating a tsunami, which results in the plant getting hit with a whole series of failures all at one time. Obviously this kind of thing needs much more serious consideration. I think the main

lesson we see from this event on its own is that operators are pretty well prepared to deal with specific single emergencies. I think we already knew that though.

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"The safety of spent fuel pools...has been an issue since the accident at Japan's Fukushima Daiichi..."

Really? Only since then? Then why was the President's Blue Ribbon Commission (brc.gov) meeting this past year and just now working up a final report that includes fuel handling issues? C'mon editors.

But, before anyone should speak or type about US nuclear power, they should read...
<http://energyfromthorium.com/pdf/CivilianNuclearPower.pdf>
and learn why we're 'only' 49 years behind, with the Chinese now committing \$1B to pass us by...
<http://energyfromthorium.com/2011/01/30/china-initiates-tmsr/#comments>

Put www dot in front of these...
theregister.co.uk/2011/02/01/china_thorium_bet/
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scientificamerican.com/article.cfm?id=are-new-types-of-reactors-needed-for-nuclear-renaissance
scientificamerican.com/article.cfm?id=china-goes-nuclear-to-avoid-coal-burning
<http://nextbigfuture.com/2011/04/china-academy-of-science-annual-budget.html>

Or, just start lobbying your reps to get us out of the LWR mud...
<http://tinyurl.com/25mgqkd>
<http://tinyurl.com/yb2qgex>

We don't have another 49 years.

(sorry for the delimiter text, but SciAm is even suspicious of their own links!)

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tharter said, "I think the main lesson we see from this event on its own is that operators are pretty well prepared to deal with specific single emergencies."

It should also be said that the plant operators and the fire brigade are the same people. And it should be added that when accidents do happen, it is almost always the fault of the executive management as a result of cutting corners. Whenever we hear of an explosion at a refinery being caused by "operator error," it is more likely it was management error. [This isn't to say that operators don't error, but you get what you pay for (quantity and quality).]

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I'm all for taking the money we're throwing away for loan guarantees for Gen III+ reactor construction and using it to make a Thorium research reactor. This way, we can actually pin down the actual economics of this technology somewhat and develop methods to make sure thorium reactors are viable. This will probably take 20 years or so (work on research reactors in the 60s didn't give us NEARLY enough information to make competitive commercial reactors), so we should deploy as much renewable energy as possible in the mean time.

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The temperature rose only 2 degrees despite the cooling system not working for 90 minutes? That sounds unlikely to me.

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Why does that sound unlikely? It is very easy to calculate. Decay heat from fuel decreases exponentially with time and it very easily calculated. Fort Calhoun is a small nuclear plant

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(one 476 MW reactor) that has been operating since 1973. We know how big the pool is and how much spent fuel is in it (including its age distribution). Calculate it. 2 degrees does not sound unreasonable to me. If it generated more heat, maybe it would be lucrative to generate steam and produce electricity from it -- but it's not. Have you ever even seen a spent fuel pool?

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Nuclear fuel should be recycled. We don't recycle nuclear fuel because it is valuable and people steal it. The place it went that it wasn't supposed to go to is Israel. This happened in a small town near Pittsburgh, PA circa 1970. A company called Numec was in the business of reprocessing nuclear fuel. I almost took a job there, designing a nuclear battery for a heart pacemaker. [A nuclear battery would have the advantage of lasting many times as long as any other battery, eliminating many surgeries to replace batteries.] Numec did NOT have a reactor. Numec "lost" some nuclear fuel. It wound up in Israel. The Israelis have fueled both their nuclear power plants and their nuclear weapons by stealing nuclear "waste." It could work for any other country, such as Iran or the United States.

It is only when you don't have access to nuclear "waste" that you have to do the difficult process of enriching uranium. Numec is no longer in business. The reprocessing of nuclear fuel in the US stopped. That was the only politically possible solution at that time, given that private corporations did the reprocessing. My solution would be to reprocess the fuel at a Government Owned Government Operated [GOGO] facility. At a GOGO plant, bureaucracy and the multiplicity of ethnicity and religion would disable the transportation of uranium to Israel or to any unauthorized place. Nothing heavier than a secret would get out.

The problem is political: The Republicans think GOGO plants are socialist/communist, which is nonsense. A COCO [Contractor Owned Contractor Operated] plant is the low bidder, who is inevitably a front for Israel or some other country. We could send our spent fuel to France to be recycled.

France recycles fuel for several countries. If we give it to Russia, the Russians will recycle it and sell it back at a much higher price.

See:

<http://www.pittsburghlive.com/x/pittsburghtrib/news/specialreports/buri> but remember that the US had no bomb grade uranium at that time. Uranium bombs are overweight and inefficient. The comment about "bomb grade uranium" is hype.

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