

Nuclear reactor closest to twister cited for safety flaws

Is everything protected from a tornado on this site? No. But we protect the critical elements,' says plant spokesperson

By Dina Cappiello and Matthew Daly

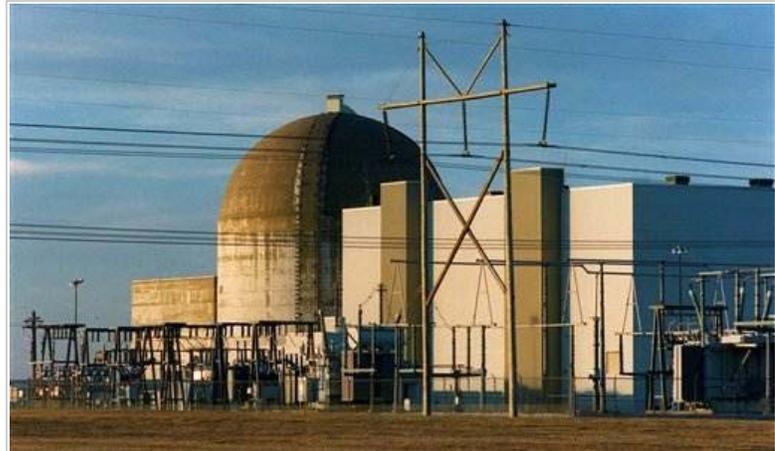
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WASHINGTON — The closest nuclear power plant to tornado-ravaged Joplin, Mo., was singled out weeks before the storm for being vulnerable to twisters.

Inspections triggered by Japan's nuclear crisis found that some emergency equipment and storage sites at the Wolf Creek nuclear plant in southeastern Kansas might not survive a tornado.

Specifically, plant operators and federal inspectors said Wolf Creek did not secure equipment and vehicles needed to fight fires, retrieve fuel for emergency generators and resupply water to keep nuclear fuel cool as it's being moved.



The Wolf Creek nuclear power plant, near New Strawn, Kan., went online in 1985.

Despite these findings, the Nuclear Regulatory Commission concluded that the plan met requirements put in place after the Sept. 11 attacks that are designed to keep the nuclear fuel cool and containment structures intact during an emergency.

Wolf Creek Nuclear Operating Corp., which runs the facility about 150 miles northwest of Joplin, said it would take action to correct the problems.

"The issues affected only one of several (emergency) procedures, so we continue to conclude Wolf Creek meets requirements, the same conclusion we've reached for every U.S. plant," said Scott Burnell, a NRC spokesman.

Wolf Creek, until recently, was one of three nuclear plants placed on a federal watch list in March for safety-related issues.

David Lochbaum, a former nuclear plant engineer who now works on nuclear safety for the advocacy group Union of Concerned Scientists, said the equipment that a tornado could disable is the "backup of backups," but that potential should raise concern nonetheless.

"It's kind of nuclear safety 101," Lochbaum said. "It's kind of stupid for it to be there, where it could help with a tornado, and a tornado takes it out."

Power knocked out earlier at 2 sites

Already this year, tornadoes have knocked out power to nuclear power plants in Alabama and Virginia, exposing vulnerabilities.

At Browns Ferry in Alabama, storms disabled sirens, meaning that police and emergency personnel would have had to use telephones and loudspeakers in a crisis.

At the Surry Power Station in Virginia, documents obtained by The Associated Press show that a tornado destroyed a fuel tanker used to refuel backup generator.

Those instances, along with the situation at Wolf Creek, highlight a larger problem at the nation's 104 nuclear reactors: While reactors and safety systems are designed to withstand a worst-case earthquake, flood, or tornado, that doesn't necessarily mean all emergency equipment or the buildings that house such equipment are disaster proof.

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Wolf Creek's location in Tornado Alley means that it was designed to handle the maximum tornadoes possible for the United States, with wind speeds up to 360 miles per hour and a maximum rotational speed of 290 miles per hour.

But its fire truck is parked in a sheet-metal building "not protected from seismic or severe weather events," according to the NRC inspection conducted after the Japanese disaster.

Jenny Hageman, a spokeswoman for the plant, said there are other options besides on-site equipment for dealing with fires.

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"We are absolutely protected from a tornado," Hageman said. "Is everything protected from a tornado on this job site? No. But we protect the critical elements."

The NRC's post-Japan inspections found numerous other instances where U.S. nuclear plants kept equipment needed to fight fires or to cope with a loss of electrical power in places that a flood could overwhelm or an earthquake could damage.

Six twisters in that county since 1985

What sets Wolf Creek apart is that it is at much greater risk of being struck by a tornado than other plants are from natural disasters.

Since 1985, when the Wolf Creek plant came on line, six tornadoes have touched down in Coffey County, where the plant is located, according to the National Climatic Data Center. All of those twisters were minor, and caused no injuries or deaths.

Over that same time period, the National Weather Service issued 23 tornado warnings in the county.

"Before Joplin, we had a tornado in the county next to us that ripped up the city of Redding," said Coffey County emergency management coordinator Russel Stuke. Stuke expressed skepticism about the NRC's findings, but acknowledged that "a nuclear plant in Kansas should be prepared for a tornado. I wouldn't go as far to say Wolf Creek is not."

Despite the close calls, including the recent series of deadly tornadoes in the South and Midwest, a twister never has struck Wolf Creek, Stuke said.

NRC records show that those nuclear plants hit by a tornado have emerged largely unscathed:

- In June 2010, a tornado ripped off siding off a building housing emergency equipment and knocked out one of two power sources at the Fermi nuclear plant in Michigan. An alert was declared, and the plant was stabilized.
- Tornadoes struck the Quad Cities nuclear power plant in northwestern Illinois in 1990 and 1996. In 1990, the plant's security fence was damaged and the roof of one building blew onto a duct that connects the radioactive waste processing area to a venting stack. No radioactive gas was released. Six years later, a tornado damaged one of the unit's secondary containment structures, leading to an alert and shutdown.
- In 1998, a tornado hit the Davis-Besse plant in Ohio, causing significant damage to electrical distribution systems, sirens and other "unfortified" structures, according to the NRC. There were no adverse effects to public health and safety.

Similar problems occurred more recently at nuclear power plants in Virginia and Alabama in the path of tornadoes. After the twister at the Surry plant damaged a tanker truck used to fuel backup generator, state officials were unsure whether the generator it supplied was needed to run emergency systems.

The utility called state officials seeking help, and a contractor supplied the plant with the needed fuel.

"I personally do not want to be that close to disaster again," said Harry Colestock, the director of operations for the Virginia Department of Emergency Management said in an email directing his staff to hold a follow-up meeting with the company, Dominion. Records from the meeting show that Dominion agreed to supply a liaison to the state's emergency operations center upon request.

Just over a week later, tornadoes forced the Browns Ferry Nuclear Plant near Athens, Ala., to shut down after severe weather wrecked transmission lines and created problems for a plant in Tennessee.

The storms also disrupted siren systems that alert residents living near nuclear power plants to trouble. The sirens, which are connected to the electrical grid, failed during a blackout. Tennessee Valley Authority officials said they are in the process of adding sirens that have battery backups, meaning they would work even during a power outage.

At one point, only 12 of 100 sirens in the communities surrounding Browns Ferry worked. A similar problem occurred in the region surrounding the Sequoyah Nuclear Plant in Soddy-Daisy, Tenn., which lost 36 of its 108 sirens. If there had been a crisis at either nuclear plant, emergency officials would have driven vehicles with loudspeakers through affected areas to alert residents.

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