



# Nuclear Energy Information Service

*Illinois' Nuclear Power Watchdog since 1981*

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## PRESS RELEASE – UPDATE

### Developments in the Virginia Earthquake and North Anna Nuclear Plant Emergency Shut-Down

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### North Anna Nuclear Plant Loses Offsite Power During Emergency Power

**CHICAGO**—The two North Anna nuclear reactors automatically “SCRAMMED” as a result of the 5.9 magnitude earthquake experienced in Virginia today. The epi-center of the quake was near the town of Mineral, just 13 miles from the reactors.

Some significant updates include:

- The “scram” – and emergency automatic shutdown of the reactors – was the result of a “**loss of offsite power**” situation at the reactor site. The NRC states it does not yet know why the reactors lost offsite. Residents living in areas near the reactors do have power at present.

**NEIS COMMENT:** The Fukushima nuclear disaster in Japan is also viewed as being caused by the “loss of offsite power,” coupled with the failure of all available back-up power generation systems onsite. As such it is a serious problem; and was extensively addressed in the July 12<sup>th</sup> Report from the special NRC 90-day study group on the lessons learned from the Fukushima disaster. It remains a major source of concern at U.S. reactors as well.

- NRC states that nine reactor sites in VA, MD, PA and NJ declared “unusual events” due to the earthquake. Only North Anna shut down as a result.

**NEIS COMMENT:** the earthquake in Virginia has received ratings ranging from 5.8 to 6.0. According to NRC documents, the North Anna reactors are rated to be able to withstand an earthquake ranging from 5.9 to 6.1 on the Richter Scale. However, these ratings only apply to the reactor buildings themselves, and not to the less-reinforced by important ancillary structures and the spent fuel pools, which may or may not be within reactor buildings. Seismic concerns at U.S. reactor sites were given considerable attention in the July 12<sup>th</sup> NRC Report.

- While the backup diesel generators did in fact start up as a result of the loss of offsite power, the Washington Post reports that one has already failed to operate.

**NEIS COMMENT:** Rep. Ed Markey’s office released a report earlier this year chronicling the frequent failure of back-up diesel generators at U.S. nuclear plants. Not all U.S. reactors have back-ups (battery power) for the back-ups (diesel generators). And few if any have separate back-up power sources of any kind for the more vulnerable spent fuel pools – a glaring safety concern that Fukushima has brought to light.

“This earthquake is a wake-up call that NRC Commissioners Kristine Svinicki, William Magwood, William Ostendorf were dead-wrong to urge delay in implementing the immediate recommendations of the July 12<sup>th</sup> NRC study team,” notes Dave Kraft, Director of NEIS. “Mother Nature could care less whether Commissioner Svinicki is

personally unprepared to evaluate the report, or Commissioner Ostendorf wants the full staff to take years for further study to make recommendations. The earthquakes at Fukushima and now in Virginia have their own timelines – and expose the hazard of the endless study – for as much as 5 years, by some accounts -- suggested by these Commissioners,” Kraft says.

“If these Commissioners are not capable of understanding the recommendations of over 120 years of reactor experience provided to them by the NRC study group, then perhaps they lack the capacity to fulfill their role as Commissioners, and should consider resigning,” Kraft suggests.

“These earthquakes say it is time to act – not dither.”

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## **DETAILED COMMENTS ABOUT THE NORTH ANNA REACTORS:**

By Robert Alvarez

An earthquake measuring 5.9 on the Richter scale just occurred less than a hour ago. It's epicenter was in Mineral, VA--- approximately 10 miles from two nuclear power reactors at the North Anna site. According to a representative of Dominion Power, the two reactors were designed to withstand a 5.9-6.1 quake. The Nuclear Regulatory Commission (NRC) ranked the North Anna Reactors as being 7th in the nation in terms of earthquake risks.

Control rods are automatically inserted to halt a reactor, if it is impacted by an earthquake. However, the reactor core still has a large amount of decay heat that requires power to remove it if there is a loss of offsite power to prevent a melt down. It is reported that the North Anna reactors were shut down and is operating with back-up diesel generators. The failure to remove reactor decay heat is what led to severe accidents at the Fukushima nuclear site on Japan. It is not clear, at this time, what damage might have been sustained at the nuclear site.

The North Anna reactors are of the Westinghouse Pressurized Water design and went on line in 1979 and 1980 respectively. Since then the reactors have generated approximately 1,200 metric tons of nuclear spent fuel containing about 228,000 curies of highly radioactive materials -- among the largest concentrations of radioactivity in the United States.

Nearly 40 percent of the radioactivity in the North Anna spent fuel pools is cesium-137 - a long-lived radioisotope that gives off potentially dangerous penetrating radiation and also accumulates in food over a period of centuries. The North Anna Pools hold about 15-30 times more Cs-137 than was released by the Chernobyl accident in 1986. In 2003, IPS helped lead a study warning that drainage of a pool might cause a catastrophic radiation fire, which could render an area uninhabitable greater than that created by the Chernobyl accident.

The spent fuel pools at North Anna contain 4-5 times more than their original designs intended. As in Japan, all U.S. power nuclear power plant spent fuel pools do not have steel lined, concrete barriers that cover reactor vessels to prevent the escape of radioactivity. They are not required to have back-up generators to keep used fuel rods cool, if offsite power is lost. Even though they contain these very large amount of radioactivity, spent reactor fuel pools in the U.S. are mostly contained in ordinary industrial structures designed to protect them against the elements.