



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-001

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Jaden Turner & Derek Hatch
c/o Mr. Benjamin
Richfield High School
510 W. Wildcat Way
Richfield, Utah 84701

Hello Jaden and Derek;

Thank you for your letter to Chairman Jaczko regarding U.S. nuclear power plants, and I apologize for the delay in getting back to you. The Nuclear Regulatory Commission's primary mission is to ensure public health and safety during civilian uses of radioactive materials (such as in nuclear power plants) in the United States. The NRC oversees the operation of 104 U.S. commercial nuclear power plants, the ongoing construction of five new reactors and the process of creating nuclear fuel in the United States.

A great deal of basic information about nuclear power and the NRC's role in overseeing it is available in our Information Digest, which is on the agency website at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/> and I've included a hard copy. I've also included other documents that relate to your questions, particularly on spent nuclear fuel and low-level waste.

The Atomic Energy Commission, the agency that preceded the NRC, set requirements that ensured U.S. nuclear power plants were designed and built to withstand severe natural events, including hurricanes, tornadoes, floods, earthquakes and so on. The NRC has continued to enforce and enhance those regulations for existing plants and proposed new reactors.

As science and technology have progressed, the NRC has incorporated new information sources and analytical methods to enhance the quality and level of detail U.S. plants must provide in showing they meet the requirements to safely shut down in the face of severe natural events. In 2011, several U.S. plants safely withstood tornado-generated damage, flooding along the Missouri River, the effects of Hurricane Irene and the Virginia earthquake.

Nuclear power plants' primary effect on the environment involves water use. Reactors generate steam that runs the plant's turbine-generator, and the plants require large amounts of water to condense that steam back into water before it returns to the reactor. That outside water most often comes from rivers, lakes or the ocean, and the process has two main effects. Drawing the water in can harm fish and other aquatic life,

while returning the now-warmer water to the river/lake/ocean can provide a beneficial zone for fish and other creatures to live in.

While the NRC focuses on safety, the Department of Energy is the government agency that deals with the policy question of how the nation should invest in various energy sources.

Please feel free to e-mail me at Scott.Burnell@nrc.gov if you have any other questions. Good luck with your project.

Scott Burnell

/RA/

Office of Public Affairs
Nuclear Regulatory Commission

Encl: NRC Information Digest
"A Short History of Nuclear Regulation, 1946-2009"
"Three Mile Island after 30 Years"
Fact Sheets