



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

January 29, 2018

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Hello Mikel:

Thanks for your letter to Chairman Svinicki regarding your thoughts on nuclear power and the proposed new nuclear power plant next to the existing Fermi reactor near Monroe. The NRC's mission is to ensure the public's health and safety and protect the environment during the U.S. civilian use of radioactive materials.

Companies pursuing approval of their reactor technologies do so of their own volition, sometimes with support from the Department of Energy. U.S. utilities such as DTE make their own decisions on whether to pursue nuclear power plants as an option. The utilities also have entire control over the reactor technology they wish to pursue. The NRC can only approve or reject applications to approve reactor designs or to license new reactors, the agency cannot change an application's reactor technology.

The NRC's only role is examining whether a reactor design meets the relevant NRC requirements to ensure the public remains safe. To this point, all current U.S. reactors, including Watts Bar Unit 2 in Tennessee, are based on cooling the core with water. The agency concludes the public will be safe if these designs are used. The NRC is currently aware of several companies that are interested in pursuing reactor technology using something other than water to cool the core. One company, Oklo, has indicated it is examining a sodium-cooled design. Other companies are considering designs using molten salts or inert gases to cool the core. If these companies apply for design approval the NRC will carry out its reviews accordingly.

With regards to the proposed new Fermi reactor, the NRC reviewed DTE's application from September 2008 through February 2015. This thorough review covered both the safety and environmental aspects of building and operating the proposed reactor. In issuing the license for the Fermi new reactor, the NRC has concluded the public will remain safe if the reactor is built and operated.

The NRC approved the proposed design for the new Fermi reactor, the Economic Simplified Boiling-Water Reactor, in 2014. The design includes several safety features that would operate without the need for electricity, meaning the reactor would be able to safely withstand the sort of events that occurred before the 2011 Fukushima accident.

When the NRC decided to issue the Fermi new reactor license, the agency imposed conditions on the proposed reactor to account for the lessons learned from the Fukushima accident.

In 2007, the Tennessee Valley Authority told the NRC it was resuming construction of Watts Bar Unit 2, where work had been halted in 1985. The NRC updated its safety and environmental reviews over the next few years, and concluded it was appropriate to give Watts Bar Unit 2 an operating license in October 2015. The reactor was also required to meet post-Fukushima safety enhancements.

The available evidence shows U.S. nuclear power plants have operated safely for more than 50 years. The radioactive material from the 1979 partial meltdown at Three Mile Island had no measurable effect on public health. Apart from Three Mile Island, U.S. nuclear power plants have safely withstood severe events such as tornadoes, floods, and hurricanes including Andrew and Katrina with no impact to the public. In the years following the Fukushima accident, the NRC imposed additional requirements on operating U.S. reactors to enhance their ability to remain safe.

NRC research over the past decade has examined the potential consequences of a U.S. reactor accident. These detailed analyses of accident scenarios show that post-Fukushima enhancements can stop an accident before it can affect the public. Even if an accident cannot be stopped, the research shows the effects are much less than earlier thought. The potential radioactive material reaching the environment would only be enough to slightly increase cancer risk in the affected population.

I've included additional information on the NRC's overall operations and the agency's response to the Fukushima accident. Please feel free to e-mail me at Scott.Burnell@nrc.gov if you have any other questions.

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