October 2, 2013

The Honorable Charles W. Dent
United States House of
Representatives
Washington, DC 20515

Dear Congressman Dent:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to a September 11, 2013, facsimile from your office, requesting information about the history of the Integral Fast Reactor (IFR) and the role of the NRC in approving the use of IFR technology.

Under the leadership of the U.S. Department of Energy (DOE), research on IFR technology began in the 1980's at Argonne National Laboratory. The IFR is fueled by metal alloy and cooled by liquid sodium, resulting in high-energy neutrons that are "fast." IFRs are a type of breeder reactor that could be operated as a net producer of plutonium and useable for commercial power production. The program was cancelled by Congress in 1994. Currently, GE Hitachi Nuclear Energy (GEH) has an advanced reactor design called PRISM (Power Reactor Innovative Small Module) that is based on the IFR model.

The NRC's role in the commercialization of IFR technology in the United States would be to certify the reactor design, and license its construction and operation domestically. In the early 1990's, the NRC staff conducted a pre-application review of PRISM that resulted in the publication of a pre-application safety evaluation report in 1994. We currently have no information from GEH regarding a specific timeframe for submission of any application and there are no ongoing technical conversations between the NRC and GEH regarding PRISM.

For more information about the research and development of IFRs, I encourage you to contact DOE's Office of Nuclear Energy, which has an advanced reactor concepts program to support research and address long-term technical barriers to the development of advanced nuclear fission energy systems utilizing coolants such as liquid metal, fluoride salt, or gas. The U.S. also is a signatory to the Generation IV International Forum (GIF), which is a cooperative international activity organized to carry out research and development needed to establish the feasibility and performance capabilities of next-generation nuclear energy systems, including liquid metal-cooled fast reactors.

I hope this information is useful to you. If you have any questions, please contact me or Rebecca Schmidt, Director of the Office of Congressional Affairs, at (301) 415-1776.

Sincerely,

/RA/

Mark A. Satorius
Executive Director
for Operations

I hope this information is useful to you. If you have any questions, please contact me or Rebecca Schmidt, Director of the Office of Congressional Affairs, at (301) 415-1776.

Sincerely,

/RA/

Mark A. Satorius
Executive Director
for Operations

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