

August 3, 2001

The Honorable Jeff Bingaman, Chairman
Committee on Energy and Natural Resources
United States Senate
Washington, D.C. 20510-6150

Dear Mr. Chairman:

Enclosed is the NRC's response to a question submitted by Senator Domenici following the July 12, 2001, hearing on S. 472, the Nuclear Energy Supply Assurance Act. We ask that this response be included in the record of the hearing.

Sincerely,

/RA/

Dennis K. Rathbun, Director
Office of Congressional Affairs

Enclosure: As stated

Question from Senator Domenici

Topic: Safety of Generation IV reactors. I've been concerned that the NRC is not adequately funded or staffed to explore the full range of safety questions that arise with introduction of more modern technologies into our present reactors or even into entirely new reactor designs.

Do you concur that NRC needs to rebuild its research infrastructure to respond to new demands on your staff.

ANSWER.

Yes. NRC needs to rebuild or strengthen aspects of its research infrastructure to respond to new demands. These demands are increasing with the deregulation of the electricity market and the renewed interest in new reactor designs. In order to confirm the safety of new reactor designs and technology, a strong nuclear research program should be maintained.

In response to industry deregulation, reactor licensees can expect to operate plants longer, increase power output, extend fuel burn-up, and make use of advanced technologies to optimize power production capability. Research plays an essential role in enabling the NRC to assess the safety of such actions. NRC must also be fully prepared to address safety matters regarding new reactor designs and new technologies. In addition, NRC must be prepared to

revise our regulatory framework and infrastructure for dealing efficiently and effectively with new technology applications. To support such a state of readiness, we must conduct the necessary research activities that cover not only the present issues facing the nuclear industry, but also those that enhance the staff's knowledge base and tools for the future.

Over the last two decades, the NRC research program support funding declined from more than \$200M in the early 80s to \$46M in FY 2001. This long term decline in resources is one factor that has contributed to a declining infrastructure (people, facilities, and analytical tools) and resulted in a limited ability to provide NRC with an independent capability to focus on longer term and forward-looking research on emerging safety issues or new designs. We, like other nations with major nuclear power programs, have become more and more dependent on international research efforts conducted outside of the U.S. and have consequently lost significant control over access to facilities. This dependency is due primarily to limited availability of NRC as well as the DOE funds, which have impacted the availability of U.S. research and test facilities. For example, in preparing for readiness for new reactor licensing, the Commission recently directed the staff to consider an integrated international research program with respect to gas reactors that would reduce costs, leverage facilities in various countries, and obtain information in a more timely fashion.

The NRC's FY 2002 budget request includes some funds to evaluate new technologies as they apply to existing operating reactors. However, this research is generally focused on near term

applications. In addition, our FY 2002 budget also provides a very low level of effort to support the Department of Energy's Generation IV initiative by identifying potential regulatory issues related to advanced reactor designs. The House and Senate Energy and Water Development Appropriation bills increased the budget request by \$10 million for future NRC licensing activities. Some of these funds will be used for research in new reactor technologies.

The Commission is mindful of the important role of research in fulfilling the agency's mission and is continuing to look at ways to rebuild or strengthen aspects of its research infrastructure to respond to new demands. Your interest and support in this matter are greatly appreciated.