

March 27, 2001

Professors Don W. Miller and Richard S. Denning
Nuclear Engineering Graduate Studies Program
The Ohio State University
1081 Robinson Laboratory
206 West 18th Avenue
Columbus, OH 43210-1154

Dear Drs. Miller and Denning:

I would like to thank you for your letter of March 7, 2001, on the critical needs for regulatory research associated with the evolving Generation IV reactor designs. Your insights are greatly appreciated and very timely. The Commission recently directed the staff to assess the technical, licensing and inspection capabilities that would be necessary to review an application for a new reactor design. This will include the capability to review the Generation III+ and Generation IV reactor designs including the Westinghouse AP-1000, the Pebble Bed Modular Reactor (PBMR), and the International Reactor Innovative and Secure (IRIS) designs. In addition, the Commission has asked the staff to examine its regulations relating to license applications, such as 10 CFR Parts 50 and 52, in order to identify whether any enhancements are necessary for licensing such plants.

In order to confirm the safety of new reactor concepts, the Commission believes that a strong nuclear research program is required. As you have noted a comprehensive evaluation of the Commission's research activities is underway with assistance from a group of outside experts and from the Advisory Committee on Reactor Safeguards. With the benefit of these insights, the Commission anticipates that steps will be undertaken to strengthen our research program capabilities. In this regard, the Commission has historically supported cooperative research with our Nation's Universities as a cost-efficient and mutually beneficial approach to achieving our organizational and program needs. We expect that such cooperative research will continue in the future.

At the present time there is the potential that the NRC will conduct a pre-application review of an advanced reactor design such as the PBMR. Such a review would necessarily involve both technology assessment and the suitability of the NRC's regulatory infrastructure. As you point out, we would anticipate that any pre-application to eventually license a Generation IV reactor will bring with it challenges in both of these areas. We would expect that the NRC would need to draw upon specialized expertise, both internal and external to the NRC, to resolve the identified issues in a timely manner.

With this background, we would be pleased to discuss the relevant capabilities and the interests among universities, such as The Ohio State University, and to explore possible areas and ways in which the NRC might expand its cooperative research with university nuclear engineering programs in the future.

If you wish to discuss this subject further, please contact me (301-415-6641), or Thomas King (301-415-5790) of my staff.

Sincerely,

/RA/

Ashok Thadani, Director
Office of Nuclear Regulatory Research

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