



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

COMJSM-00-0003

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October 31, 2000

COMMISSIONER

Approved. See attached comments.

*Edward McGaffigan, Jr.*  
Edward McGaffigan, Jr. 1/27/01

MEMORANDUM TO: Chairman Meserve  
Commissioner Dicus  
Commissioner Diaz  
Commissioner McGaffigan

FROM: Jeffrey S. Merrifield *JSM*

SUBJECT: STAFF READINESS FOR NEW NUCLEAR PLANT  
CONSTRUCTION AND THE PEBBLE BED REACTOR

As you are aware, several utilities are seriously exploring the option of building new nuclear plants in the United States. Joe Colvin, the President of the Nuclear Energy Institute (NEI), recently announced that a new plant may be ordered in the United States within five years, but that conditions for doing so may be ready in as little as two years. In addition to these activities, PECO Energy (PECO) is actively involved in Pebble Bed reactor initiatives in South Africa. If such initiatives prove successful, it is not inconceivable to think that PECO may try to utilize this technology in the U.S. According to recent comments attributed to Corbin McNeill, PECO's President and CEO, PECO could apply for a design certification in as few as 15 months.

I am not prepared to address the likelihood of these initiatives, and I certainly do not want to give the impression that I am in any way promoting them—as I am not. However, given the magnitude of the technical, licensing, and inspection challenges associated with these initiatives, I believe the agency must approach them in a proactive manner. Specifically, I believe it would be prudent for us to take the steps necessary to ensure that the staff is prepared to carry out its responsibilities should new plant orders emerge or should PECO, or any other entity, pursue the Pebble Bed reactor in the United States.

I am sensitive to staff resource constraints, and appreciate that our limited resources must primarily be focused on immediate and definitive needs. However, consistent with the NRC's "Corporate Management Strategies," I believe the Commission must, at a minimum, better understand what general steps need to be taken and the timeframes required to do so, to assure agency readiness should these challenges arise. Therefore, I propose that the Executive Director for Operations (EDO) take the following actions.

1. Assess our staff's technical and licensing capabilities and identify enhancements, if any, that would be necessary to ensure that the agency can effectively carry out its responsibilities associated with a new plant application.

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Commissioner McGaffigan's Comments on COMJSM-00-0003

I agree with Commissioner Merrifield that the Commission needs to approach the possibility of new reactor orders and the further licensing of advanced reactor designs in a proactive manner. That was the promise of the Commission in both its 1986 and 1994 policy statements on regulation of advanced nuclear power plants. However, we also will need to deal with the tremendous uncertainty about some of these plans in making budget decisions and resource commitments. Since our budget is derived from licensee fees, we will also face choices about which of the prospective activities are generic (to be funded from Part 171 annual fees) and which should be charged to a specific licensee under Part 170 fees. To the extent that DOE funding can be provided for NRC activities related to the Generation IV Program, as discussed in Dr. Travers' November 14, 2000 memo, the Commission's decision-making on resource commitments will be made somewhat easier.

As I understand the situation today, we may face design certification reviews for AP-1000, a modular pebble-bed high temperature gas reactor (PBMR), and an integrated modular light water reactor (International Reactor Innovative and Secure (IRIS)) in the next few years. The plans for the AP-1000 are the most advanced and discussions with the staff and ACRS are ongoing. The PBMR design certification could be submitted in 2002 (but not concluded until 2006 because of the need for prototype testing of the initial reactor planned to be constructed in South Africa). The IRIS design certification could be submitted somewhat later, but Westinghouse has said it would like to achieve design certification by 2007. In addition, according to press accounts, we could be receiving early site permit applications from multiple utilities by next year. An application for a combined license to build and operate one of the three currently certified advanced reactors (ABWR, System 80+ and AP-600) might not be far behind (in a December 10, 2000 memo, Dr. Travers mentioned growing industry interest in a new plant order in the 2005-2006 timeframe).

Like Commissioner Merrifield, I cannot judge the likelihood of these activities. But it is clear that we could be facing a tremendous challenge which as recently as three years ago seemed a remote possibility. I therefore agree with the Commissioner Merrifield's proposed actions, and agree with Commissioner Diaz' proposal to expand proposed action 4 to include all Generation 3+ or Generation 4 light water reactors.

I would encourage the industry to be as specific as possible about their plans and schedules so that the agency can plan and budget for advanced reactor activities without disrupting our current important initiatives. Any currently unbudgeted advanced reactor activities will be coming at the same time as a bow wave of license renewal applications, large numbers of license transfer requests associated with industry restructuring, and a growing workload in the area of spent fuel storage, including the initial license renewal for a dry cask storage facility. I would prefer not to face unexpected tradeoffs between resources for these activities and resources for the advanced reactor activities.

E. McGaffigan