Release

October 17, 2001

MEMORANDUM TO: Michael E. Mayfield, Director, DET:RES
Scott F. Newberry, Director, DRAA:RES

FROM: Thomas L. King, Director, DSARE:RES /RA/

SUBJECT: FUTURE REACTOR LICENSING RESEARCH PLAN

In SECY-01-0188 (ADAMS accession number ML012640279) on the Future Licensing & Inspection Readiness Assessment (FLIRA), dated October 12, 2001, the staff made a commitment to the Commission to develop a research plan to support NRC's licensing activities for the near-deployment plants. These plants include the two high-temperature gas-cooled reactors – Pebble Bed Modular Reactor (PBMR) and the Gas Turbine Modular High Temperature Reactor (GT-MHR), and two advanced light water-cooled reactors – AP1000 and the International Reactor Innovative and Secure (IRIS) design. Early identification of the scope and schedule of research and development, and testing is crucial to an efficient and effective future reactor licensing process, and it will also provide a sound basis for budgeting and planning.

DSARE has the lead to develop the research plan identifying major areas of research and development to support the advanced reactor licensing efforts. The initial draft should be ready by the end of this year to support the FY04 budget planning activities. This plan should be written to conform with our proposed budget for FY02 and FY03, and should cover the period FY02 through FY06, and should include details of the needed anticipatory and confirmatory research, including analytical code development to model the design and operational characteristics of the new reactors, materials testing, new technologies (such as digital I&C), and HTGR fuels testing. In addition to the scope of the future research, this plan should also include resource and schedule estimates, including the costs associated with any facility modifications that may be necessary to conduct the needed research and to obtain the desired experimental data. It is also envisioned that cooperative research both with the industry and international community will be a key factor in developing research plans to leverage cost. Our goal is not to repeat the collaborative research work completed under the auspices of IAEA and published in various technical documents. We need to identify those areas of anticipatory and confirmatory research that will be necessary to develop sufficient data and tools for us to effectively and efficiently support the future reactor licensing activities. One of the objectives of the NRC workshop on High Temperature Gas-Cooled Reactor Safety and Research Issues that was conducted from October 10–12, 2001, was to identify future research needs and high-priority safety issues. During discussions, various safety issues were identified and priorities were assigned. A workshop summary containing the list of safety research topics will be issued in the coming weeks. However, our tabulation of future research topics may not be restricted to the list developed as a result of workshop discussions.

CONTACT: Raji Tripathi (RRT1), DSARE:RES

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It is imperative that we identify early on various areas for future research and development. Because of the resource constraints, we would also need to prioritize the tasks I have assigned Raji Tripathi of my staff to coordinate the necessary efforts within RES, and also with NRR and NMSS, to develop this research plan. Please identify senior staff contacts in various technical disciplines who can assist and provide input to Raji. Full cooperation from you and your staff is vital to our timely formulation of a realistic research plan to ensure adequate resource allocations to meet our obligations in the future reactor licensing activities.

Your cooperation will be greatly appreciated. If you have any questions, feel free to call me at 415-7499 or Raji Tripathi at 415-7472.

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