August 19, 2008

The Honorable Peter J. Visclosky
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

The Energy Policy Act of 2005 (Public Law 109-58), Title VI, Subtitle C, Section 644, requires the Secretary of Energy and the Chairman of the U.S. Nuclear Regulatory Commission to jointly submit to Congress, within three years of enactment of the Energy Policy Act (August 8, 2005), a licensing strategy for the Next Generation Nuclear Plant. The joint report has been provided under separate cover. The Commission is providing supplemental NRC information to that report for consideration by the Congress.

If you have any questions, please contact me. You may also contact Ms. Rebecca Schmidt, Director of the Office of Congressional Affairs at 301-415-1776.
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Sincerely,

***/RA/***

Dale E. Klein

Enclosure:
As stated

cc: Representative David L. Hobson
Samuel W. Bodman, DOE
Jim Nussle, OMB

Identical letter sent to:

The Honorable Peter J. Visclosky
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States House of Representatives
Washington, D.C. 20515
cc: Representative David L. Hobson
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable Bart Gordon
Chairman, Committee on Science
and Technology
United States House of Representatives
Washington, D.C. 20515
cc: Representative Ralph M. Hall
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable Jeff Bingaman
Chairman, Committee on Energy
and Natural Resources
United States Senate
Washington, D.C. 20510
cc: Senator Pete V. Domenici
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable John D. Dingell
Chairman, Committee on Energy
and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative Joe Barton
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable Robert C. Byrd
Chairman, Committee on Appropriations
United States Senate
Washington, D.C. 20510
cc: Senator Thad Cochran
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable David Obey
Chairman, Committee on Appropriations
United States House of Representatives
Washington, D.C. 20515
cc: Representative Jerry Lewis
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable Byron L. Dorgan
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States Senate
Washington, D.C. 20510
cc: Senator Pete V. Domenici
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable Thomas R. Carper
Chairman, Subcommittee on Clean Air
and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator George V. Voinovich
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable Rick Boucher
Chairman, Subcommittee on Energy
and Air Quality
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative Fred Upton
Samuel W. Bodman, DOE
Jim Nussle, OMB

The Honorable Barbara Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator James M. Inhofe
Samuel W. Bodman, DOE
Jim Nussle, OMB

**Requirements for Successful Implementation of the Recommended NGNP Licensing Approach**

The Energy Policy Act of 2005 (Public Law 109-58) (EPAct) establishes a target date of September 30, 2021 to complete construction and begin operations of a prototype Next Generation Nuclear Plant (NGNP) facility or submit to Congress a report establishing an alternative date for completion. To achieve such an aggressive schedule, the Department of Energy (DOE) and the NGNP applicant must strictly adhere to the provisions discussed in the licensing strategy and the Nuclear Regulatory Commission (NRC) must focus special attention on the NGNP application and accelerate its normal review and procedures while ensuring protection of public health and safety. To implement the NGNP licensing strategy successfully and meet the congressionally mandated operation date of 2021, the following will be necessary:

- Sufficient resources to develop the design, conduct the licensing review, and construct the facility must be available.

- Full funding at requested levels for the project duration.

- The NRC, DOE, and applicant must assign a very high priority to both the NGNP pre-application and combined license (COL) application review.

- DOE must choose a single design no later than March 2009 to support the pre-application review.

**Public Liability under the Atomic Energy Act**

Section 170 of the Atomic Energy Act (AEA) (known as the Price-Anderson Act) establishes an indemnification and public liability scheme for damages resulting from nuclear power reactor accidents. For public liability purposes, the Price-Anderson Act separates NRC-licensed facilities into two basic categories—(1) "facilities designed for producing substantial amounts of electricity and having a rated capacity of 100,000 electrical kilowatts or more;" and (2) "all other licensees of the Commission" (AEA Sections 170b.(1), 170e.(1)). Due primarily to a retrospective insurance pool plan, the Price-Anderson Act establishes a much higher aggregate public liability ceiling for damages resulting from an accident involving "facilities designed for producing substantial amounts of electricity and having a rated capacity of 100,000 electrical kilowatts or more" (AEA Sections 170b.(1), 170e.(1)(A)).

Current design plans for the NGNP include the possibility of using the energy produced by the reactor for process heat in industrial processes, with little or no provision for the actual generation of electricity. If the NGNP is not designed and constructed to produce substantial amounts of electricity and with a rated capacity in excess of 100,000 electric kilowatts, it may not fall into the category of facilities subject to the retrospective premium pool providing a greater amount of financial protection for potential public liability in the event of a nuclear incident. This could result in disparate treatment for the NGNP and comparable commercial nuclear power plants.

At some time in the next few years as more details about the NGNP project are known, it may be appropriate for Congress to consider the applicability of the retrospective premium pool plan in the Price-Anderson Act to a very high temperature reactor with a rated capacity of 300,000 thermal kilowatts rather than 100,000 electric kilowatts.[1] This would clarify whether the NGNP or other similarly sized reactor should be treated the same under Price-Anderson as the current commercial nuclear power plants, regardless of those reactors' end-use.

**NRC Technical Policy Issue**

Based on a preliminary assessment of the NGNP technology and design concepts being considered, the following technical policy issue will require resolution before licensing an NGNP. The use of a risk-informed and performance-based licensing approach for an NGNP will require the applicant to develop, and the NRC to review, a design-specific probabilistic risk assessment. It will also require the NRC to decide how to modify existing requirements and to develop new requirements that allow the use of risk information in their implementation.

**Skill Development, Training and Knowledge Management**

The skill set needed in certain review areas for an NGNP will differ significantly from that needed for a light water reactor (LWR). The NRC will identify the critical skill areas where gaps exist or are projected to exist during the review of the prototype and follow up commercial NGNP license applications. The NRC staff will likely use staffing models based on its experience with LWR reviews to evaluate staffing needs.

Additional areas requiring infrastructure development include regulatory guides, standard review plans, codes and standards, reactor oversight process development, and inspection programs. These guidance documents need to address NGNP-specific issues involving security and safeguards, spent fuel, environmental matters and inspection and startup testing. Infrastructure development must also include NRC staff training and qualification program development.

Qualification programs for training and certifying that employees have sufficient regulatory knowledge for regulating and licensing LWRs are already in place. The NRC will need to develop a qualification program specific to NGNP designs to certify employees' knowledge for licensing and regulating an NGNP. The gradual integration and training of employees on NGNP technology will be essential to the future of the NGNP reviews. To address this, the NRC will expand the use of existing training tools, including mentoring, on the job training, formal classroom and online training, and self study activities. Pre-application reviews of high temperature gas-cooled reactors (such as the pebble bed modular reactor and the NGNP) will serve to develop the skill set and experience necessary to review the NGNP license applications.

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[1] A 300,000 thermal kilowatts rating is equivalent to a 100,000 electric kilowatt rating for a light water reactor (LWR), assuming an approximate 33 percent conversion efficiency. This LWR conversion efficiency has not significantly changed since the Price-Anderson Act was enacted.

While the NRC will focus on training its employees as the principal vehicle for preparing for the NGNP reviews, it will also explore other options, such as contract support to ensure that experienced personnel are available to support the reviews. In addition, to supplement the technical expertise of the staff and independent consultants, the NRC may engage experts from the National Laboratories to ensure that it will have a well rounded knowledge base to perform the NGNP licensing reviews.