

December 10, 2009

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

Dear Mr. Chairman:

As requested in your letter dated December 1, 2009, I am submitting, on behalf of the U.S. Nuclear Regulatory Commission (NRC), the following comments regarding S. 2052, the "Nuclear Energy Research Initiative Improvement Act of 2009," and S. 2812, the "Nuclear Power 2021 Act."

Because of our role as a regulator, the NRC offers no comments on whether, as a policy matter, small modular reactors or other new nuclear reactor technologies should or should not be pursued. The NRC's role would be limited to ensuring that any reactors utilizing new technologies will be constructed and operated in a manner that will provide adequate protection of public health and safety and the common defense and security. Accordingly, the NRC's comments relate to the NRC's regulatory role.

S. 2052

S. 2052 would require the U.S. Department of Energy (DOE) to "conduct research to lower the cost of nuclear reactor systems." This language would not, though, expressly direct the DOE to conduct research on safety in conjunction with its research related to cost reduction for nuclear reactor systems. Such safety research could be valuable in supporting the NRC's role in determining whether particular cost-saving measures are consistent with public health and safety—a determination the NRC would need to make before making any licensing decisions. Accordingly, the NRC suggests adding the words "consistent with protection of public health and safety" after the words "lower the cost of nuclear reactor systems" in the provision of Section 2 of S. 2052 that would add a new paragraph (2) to section 952(a) of the Energy Policy Act of 2005.

To the extent that the research into nuclear reactor systems leads to submission to the NRC of applications based upon new technologies or designs, the NRC may need to conduct infrastructure development and confirmatory research before receiving applications in order to ensure an efficient and effective review process once applications do arrive. To facilitate efficient licensing reviews, Congress would therefore need to provide the NRC with adequate appropriations to cover this pre-application work.

S. 2812

S. 2812 requires the DOE to obtain two small modular reactor design certifications from the NRC by January 1, 2018, and to obtain two NRC combined licenses—one for each certified design—by January 1, 2021. As the NRC staff has indicated in prepared written testimony for the Committee’s December 15, 2009 hearing, the NRC has already begun conducting preparatory work on various matters related to small modular reactors. However, the amount of additional work that the NRC must do to prepare itself for efficient reviews of the small modular reactor design certification and combined license applications described in S. 2812 will vary based upon the technologies ultimately chosen. For example, the NRC expects that it is much closer to being able to efficiently evaluate applications for small modular reactors that would utilize light water reactor technology—the same technology employed in the existing fleet of large commercial nuclear plants—than applications reliant on technologies with which the NRC has much less experience.

Thus, while the NRC is not contending that the deadlines in S. 2812 are unattainable, and while the NRC would make a concerted effort to make licensing decisions within any statutory timeframe, the NRC emphasizes that the time and resources it will need to develop the appropriate infrastructure and conduct any necessary confirmatory research could vary substantially depending upon which small modular reactor technologies are ultimately pursued. S. 2812 does set target dates for ultimate receipt of NRC licenses, but it sets no deadline for determining which technologies will be chosen as the basis for the designs that the DOE and its private-sector partners would seek to have licensed. Therefore, it is not clear how much advance warning the NRC would have about which technologies the license applications will reference.

In addition, pursuant to its Atomic Energy Act responsibilities, the NRC will not grant a license if the applicant does not demonstrate to the NRC that public health and safety and common defense and security will be adequately protected. Therefore, for the deadlines in S. 2812 to be met, the NRC would need to receive appropriations adequate to support any necessary infrastructure development and confirmatory research as well as the application reviews themselves, and applicants would need to submit high quality applications in a timely manner.

In light of the considerations described above, the NRC suggests adding language to the deadline provisions of S. 2812 to ensure there is no undue pressure on the DOE or the NRC to compromise on safety or security because of impending statutory deadlines. Section 645 of the Energy Policy Act of 2005 provides an example of possible alternative language. That act established the Next Generation Nuclear Plant Project, and Section 645(c) sets forth a specific date by which the DOE is to complete construction and begin operations of a prototype nuclear plant and associated facilities. But Section 645(c) also gives the DOE the option – in the event it cannot comply with the statutory deadline – of “submit[ting] to Congress a report establishing an alternative date for completion.” The NRC believes that similar safety-valve language would be appropriate for S. 2812 to account for any complications related to safety or

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security that might arise as new small modular reactor technologies are developed and assessed.

If you have questions about these views, please do not hesitate to contact me.

Sincerely,

/RA/

Gregory B. Jaczko

cc: Senator Lisa Murkowski