

Rulemaking Comments

From: Per F. Peterson [peterson@nuc.berkeley.edu]
Sent: Sunday, May 18, 2008 6:44 PM
To: Rulemaking Comments
Cc: Carol Gallagher
Subject: Comments on: Regulation of Advanced Nuclear Power Plants; Draft Statement of Policy
Attachments: UCB_NRC_Advanced_Reactor_Policy_Comments.pdf

Dear Sir or Madam,

Attached please find my comments on the draft statement of policy on "Regulation of Advanced Nuclear Power Plants." Thank you for this opportunity to provide feedback on this policy statement.

Best regards, Per Peterson

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May 19, 2008

Carol Gallagher
Rulemakings and Adjudications Staff
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Comments on Draft Policy Statement, "Regulation of Advanced Nuclear Power Plants; Statement of Policy."

Dear Ms. Gallagher:

Thank you for this opportunity to provide comments on the NRC draft policy statement, "Regulation of Advanced Nuclear Power Plants; Statement of Policy." I am a co-chair of the Generation IV International Forum's Proliferation Resistance and Physical Protection Working Group, and I am pleased to see that the policy statement explicitly calls out policy related to reactor security, and emphasizes the importance of early consideration and integration of security design along with safety and reliability.

The draft policy lists a number of design attributes that could assist in establishing the acceptability or licensability of a proposed advanced reactor design. This list includes attributes that relate to security. But the focus of the discussion on security appears to be on the threat of sabotage of facilities, with aircraft crash being the example that is specifically cited.

The policy does not explicitly mention the threat of theft, which can be reduced and controlled by a well-designed system for material control and accounting. In addition, because U.S. policy is to offer its nuclear facilities for international safeguards, reactor designs should also consider how effectively international safeguards can be implemented, in particular design information verification, containment and surveillance, and material accounting. These issues will be yet more important for future advanced reactor designs that will have co-located reprocessing and fuel fabrication facilities.

Knowing where materials are is important for safety as well, and design features that support design information verification, containment and surveillance, and material accounting, and that provide passive barriers to the potential theft of materials, are important to consider from the earliest stages of design.

For these reasons I recommend that the final policy discuss explicitly both the threats of theft and sabotage, and that it also encourage designers to consider requirements for implementing international safeguards monitoring early in the design process, particularly for reactors that will be co-located with reprocessing facilities.

One possible modification to the final policy statement would be to add specific reference to design attributes that relate to theft and to international safeguards, such as a sentence saying:

“Among the attributes that could assist in establishing the acceptability or licensability of a proposed advanced reactor design, and therefore should be considered in advanced designs, are:

“...Designs that emphasize passive barriers to potential theft of nuclear materials, and that facilitate design information verification, containment and surveillance, and accounting for nuclear materials, particularly for advanced reactors with co-located reprocessing facilities.”

Thank you for your consideration of these comments. I would happy to provide additional feedback or recommendations related to these comments if needed, and can be contacted at (510) 643-7749 or at peterson@nuc.berkeley.edu.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'F. Peterson', with a large, stylized initial 'P' at the start.

Per F. Peterson
Professor
Department of Nuclear Engineering

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