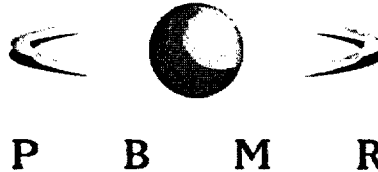


PR 50 and 53
(71FR26267)



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January 4, 2007 (2:56pm)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Date:
December 28, 2006

Your Ref.:

Our Ref.:
USDC20061228-1

Enquiries:
E.G. Wallace
TEL:US 423-344-6774

Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTN: Rulemakings and Adjudications Staff.

RE: Comments on Advance Notice of Proposed Rulemaking (ANPR) on *Approaches to Risk-Informed and Performance-Based Requirements for Nuclear Power Reactors* (71 Fed. Reg. 26267, May 4, 2006)

Pebble Bed Modular Reactor (Proprietary) Limited, (hereinafter referred to as "PBMR Pty Ltd") appreciates the opportunity to submit comments on the ANPR for development of a risk-informed and technology-neutral set of regulations in 10 CFR Part 53. These comments are in addition to the comments that we provided to you on September 11, 2006, which are still valid and applicable.

The NRC's regulations in 10 CFR Part 50 are largely focused on light water reactors (LWRs), and contain little or no provisions that are directly applicable to gas-cooled reactors or other reactor technologies. PBMR Pty Ltd is designing and will soon be constructing a gas-cooled reactor in the Republic of South Africa, and we are currently engaged with the NRC in a pre-application review for design certification of the PBMR. As a result, we believe that PBMR Pty Ltd will be the most affected by the NRC's rulemaking to develop regulations that are technology-neutral and risk-informed, and PBMR Pty Ltd is well-situated to contribute to the development of those regulations.

We generally endorse the comments by the Nuclear Energy Institute (NEI) on the ANPR. Additionally, we offer the following comments on some of the specific issues raised by the ANPR:

- With respect to Question 1, PBMR Pty Ltd supports the continued development of risk-informed and performance based revisions to 10 CFR Part 50. We also support NRC's development of a Technology-Neutral Framework (TNF) to guide the development of regulatory requirements for new reactors. However, we

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believe that it would be premature to finalize a new rule such as a new Part 53 until more experience is available in the licensing of new reactors, especially new, advanced non-LWRs. We believe that going forward there should be a five-step approach:

- Develop a preliminary draft rule based on the responses to the Advanced Notice of Rulemaking questions.
- Publish the draft for information so that an application can be developed for a non-LWR design approval/ certification taking into account the information requirements of the draft rule.
- Review and approve a non-LWR design using a Part 50-Part 52 approach
- Evaluate the preliminary rule with insights gained against the non-LWR design that is being approved in step 2 for comments, and
- Update and publish the final rule for comment.

In the approach above, the TNF could be used as guidance for deciding which parts of Part 50 to apply and which parts need exemptions. For licensing new reactors, especially non-LWRs, it is better to license one or more reactors under the current regulations and assess the draft rule and the guidance of the TNF before developing a new rule. Drafts of technology-neutral rules could be developed and tested against non-LWR power reactor licensing and operational projects.

- With respect to Question 7, PBMR Pty Ltd has submitted four papers on Project 732 that specifically propose the development of a performance-based, risk-informed regulatory and licensing framework for a non-LWR design. These papers are directly applicable to this initiative. PBMR Pty Ltd would invite NRC to critically consider these papers as part of this effort to establish a TNF as well as considering them in the PBMR Design Certification preapplication review.
- With respect to Question 36 in the ANPR, emergency planning (EP) regulations should be generic and technology neutral. However, EP regulations should also be risk-informed, and plants should not be subject to deterministic EP requirements. For example, different technologies do not necessarily need the same size of emergency planning zones (EPZs) and the same offsite emergency planning. Instead, the EP regulations should account for the risk posed by individual plants. Even the current regulations in Appendix E to Part 50 recognize that the EPZs for gas-cooled reactors should not automatically be subject to the EPZ requirements for LWRs. The criteria for Generation IV reactors, including the PBMR, is to minimize if not eliminate the need for offsite emergency planning. As a result, design trade offs have been made to reduce the risk to the public with EPZs as small as 400 meters. To require more would unnecessarily prejudice these small, inherently safe reactors relative to the economies of scale of ALWRs.
- With respect to Question 43 in the ANPR, we believe that the classification of a structure, system, or component (SSC) as "safety-significant" should be based upon the importance of the SSCs in preventing or mitigating design basis accidents (DBAs). Similar to current regulatory practice, SSCs that are important for preventing or mitigating infrequent events (e.g., severe accidents) or for defense-in-depth purposes should not necessarily be classified as safety-significant, but instead should receive special treatment sufficient to ensure that the SSCs can perform their safety functions in accordance with the reliability and availability values assumed in

the probabilistic risk assessment or the assumptions and outcomes in the defense-in-depth evaluations.

- With respect to Question 64 in the ANPR, the NRC should continue with appropriate risk-informed changes to 10 CFR 50 to gain additional risk-informed insights for LWR designs that were developed without the integral use of PRA and risk-informed safety and regulatory reviews. However, it is important to note that the process of risk-informing Part 50 is seen as neither adequate nor sufficient for non-LWRs. The development of a new Part 53 is essential for non-LWR designs due to the considerable differences between LWRs, and the associated regulatory framework for evaluating them, and other reactor types.

Finally, as noted in the ANPR, the NRC "...plans to continue the ongoing efforts to revise specific regulations in 10 CFR Part 50...". Recognizing the extended period of time that will be needed to draft and fully implement a new Part 53, PBMR supports NRC's efforts to revise specific requirements within the existing 10 CFR Part 50 insofar as such individual regulations are technology-neutral and risk-informed.

Should you have any questions, please feel free to contact me.

Yours sincerely,



Edward G. Wallace
Senior General Manager – U.S. Programs
Pebble Bed Modular Reactor (Proprietary) Limited

From: Carol Gallagher
To: Evangeline Ngbea
Date: 01/04/2007 10:34:20 AM
Subject: Comment letter on Approaches to Risk-Inform & Performance-Base Requirements for NPRs

Attached is a comment letter on the above noted ANPR that I received via the rulemaking website on 12/29/06.

The commenter's address is:

Edward M. Burns
5627 Beacon Street
Pittsburgh PA 15217-2011

Carol

Mail Envelope Properties (459D1E74.7E3 : 5 : 35764)

Subject: Comment letter on Approaches to Risk-Inform & Performance-Base Requirements for NPRs
Creation Date 01/04/2007 10:34:12 AM
From: Carol Gallagher
Created By: CAG@nrc.gov

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Options

Expiration Date: None
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

Junk Mail Handling Evaluation Results

Message is not eligible for Junk Mail handling
Message is from an internal sender

Junk Mail settings when this message was delivered

Junk Mail handling disabled by User
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Junk List is not enabled
Junk Mail using personal address books is not enabled
Block List is not enabled