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April 22, 2005

Rules and Directives Branch
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

This letter provides comments from PBMR Pty, LTD on the Regulatory Structure for New Plants Licensing – Part 1: Technology Neutral Framework draft NUREG 3-2005.

PBMR Pty, LTD appreciates the NRC staff work in development of a risk-informed, performance-based and technology-neutral framework. We look forward to continued interaction with the staff in the development of the Regulatory Framework, and in the resolution of specific technical issues associated with the development of resulting Regulations. This effort is an important generic step in establishing a workable framework for the design certification of our pebble bed reactor. As such, PBMR Pty, LTD encourages an aggressive program to complete this effort, one that will benefit all advanced reactor suppliers and licensees with a modern, performance based, risk- informed regulatory structure that is more suitable for the improved designs being developed today.

PBMR Pty, LTD has been an active participant in the US NRC sponsored workshops on this framework and also an active member of the NEI Working Group on the Technology Neutral Framework. As such, we broadly support the comments provided by NEI in their letters of April 11 and 22 on this issue.

In addition to those comments, PBMR Pty, LTD would offer the following additional comments:

SISP Review Complete
Template = Adm-013

E-RIDJ = Adm-03
Add A. Singh (AX53)

General

The overall draft NUREG requires a more extensive editing that develops the new terms for the new framework and uses the new terms consistently and avoids using established terms in new ways, which leads to confusion.

The intent to make the new regulations performance-based is clear, yet the extent of development of the performance criteria and acceptance standards is too incomplete for effective comment.

The four step program outlined in the NUREG to complete the development of a new regulatory framework for advanced reactors includes, as the last step, the development of technology-specific regulatory guides. It is unclear that this is a necessary element of the process. It appears at this juncture that the development of a certified design that meets the performance criteria of Technology Neutral Regulations should obviate the need for additional Regulatory Guides. Further, it will be virtually impossible to develop the Technology Specific Regulatory Guides for a non-LWR in advance of a detailed design that is submitted for review, and impractical to write the Regulatory Guides concurrently with a design certification review. The requirement to have the development of the Regulatory Guides completed as a prerequisite for the initial non-LWR design certification would thus be a "Catch-22" situation that would be neither efficient nor effective. At best, the development of a Technology Specific Framework could be developed as an interpretive document that may be useful in applying the Technology Neutral Regulations to a specific design type.

Specific Comments:

Event Classifications - The NUREG proposes to use the mean value of events or event families to determine the region conditions (i.e., AOO, DBE, BDBE) that set the design and evaluation criteria. PBMR Pty, LTD supports this approach. The uncertainty bands that surround an event or event family that cross a boundary line between regions should not cause that event to be reclassified. Rather, the underlying conditions that lead to the uncertainty bands should be examined along with the defense-in-depth available for that scenario to determine whether adequate safety is achieved. Alternative actions by the designer may be proposed that reduce the uncertainty band. This is particularly important for BDBE that by their nature may have greater uncertainty bands, but should not necessarily become DBE.

SSC Classification – The industry has a number of inconsistent terms that it has used over time to describe the relative significance of SSC from a safety perspective. The development of this framework should add clarity to the process going forward by choosing terms that are not subject to the confusion of past uses or misleading as to intent.

Recent design certifications of ALWRs have made good use of the Commission policy on the treatment of non-safety SSCs that have some safety significance. These SSCs are typically installed for normal operations or investment protection, but can also serve to eliminate or reduce the severity of transients or accidents. The new framework and regulations should utilize the precedents for Regulatory Treatment of Non-Safety Systems (RTNSS) established in Secy 94-084 and recent design certifications to codify the

relationship between SSCs relied on for safety (i.e., inherent and passive safety SSCs) and those additional non-safety SSCs that provide defense in depth when examined in a risk-informed approach.

Defense in Depth (DID) - The NUREG discussion of defense in depth overlooks the first level of defense utilized by designers. This initial level sets the level of normal operational performance, robustness and margins to upsets. For example, the selection of very low power densities is creates low decay heat levels that make inherent passive safety possible for advanced gas reactors. The current IAEA definition of DID levels provides a more complete description of DID levels and should be considered in the new framework. Additionally, DID should be treated holistically for a design. The language in the NUREG suggests that each level of DID will be independently assessed and changes imposed regardless of the overall safety and DID in a design.

Emergency Planning – The establishment of emergency planning zones and requirements should be treated on a case-by-case basis for non-LWR designs as currently provided in regulations. Extensive operating experience should not be the basis for this determination as this would impose a potentially unwarranted penalty on initial licensees and unnecessarily involve a greater degree of public involvement and concern about the safety of advanced plants.

PBMR Pty, LTD appreciates the opportunity to comment on the development of the Technology Neutral Framework. I would be pleased to answer any questions that you may have.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'E. Wallace', written in a cursive style.

Edward G. Wallace
Senior General Manager- US Programs
PBMR (Pty) Ltd

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