November 29, 2004

ORGANIZATION: PEBBLE BED MODULAR REACTOR (PBMR) PTY LIMITED

SUBJECT: SUMMARY OF NOVEMBER 3, 2004, PUBLIC MEETING ON PEBBLE BED MODULAR REACTOR PRE-APPLICATION REVIEW ACTIVITIES

On November 3, 2004, Nuclear Regulatory Commission (NRC) senior management and staff conducted a public meeting at NRC Headquarters with senior management representatives from Pebble Bed Modular Reactor Pty. Ltd. (PBMR Pty.). The purpose of the meeting was to provide PBMR Pty. with the opportunity to present their proposed plans, schedules, and objectives for a PBMR pre-application review and follow-on design certification application (DCA) review. The meeting had been requested by PBMR Pty. during an NRC drop-in visit on August 30, 2004. The meeting agenda, a list of attendees, and the presentation handouts that were used by PBMR Pty., are attached to this meeting summary.

Dr. Regis Matzie, a member of the PBMR, Pty. Board of Directors, presented background information on the origins of the PBMR project in the Republic of South Africa (RSA) and the basis for the PBMR Pty Ltd. proposal for PBMR pre-application interactions with the NRC and plans for a PBMR DCA. Dr. Matzie indicated that, although there was U.S. nuclear utility interest in the PBMR for electric power generation, none would consider a combined license application for a plant design that had not received NRC design certification.

Dr. Alistair Ruiters, Director General, Department of Trade and Industry, Republic of South Africa (RSA) and Chairman of the Board of Directors, PBMR Pty., described the commitment of the RSA government to PBMR development and deployment as a strategic initiative to meet the future electric power needs in RSA and the needs of other African nations; a means to establish RSA global technology alliances; and a means to ensure the success of PBMR commercial deployment worldwide.

Mr. Dieter Matzner, General Manager, Power Plant Division, PBMR Pty. discussed the use of demonstrated German pebble bed reactor technology for the PBMR plant design. He also described the worldwide network of established equipment suppliers and technology development organizations supporting PBMR design and development activities, and the use of light water reactor vessel materials and proven power conversion system equipment in the plant design. He discussed PBMR reactor building design, safety and protective functions, which include protecting against the penetration by a large modern commercial aircraft. He also summarized the RSA licensing activities for the PBMR which began in 2001 and which will include the submission of a safety analysis report (following the Reg Guide 1.70 standard format and content) by January 2006 to the RSA reactor licencing authority. The integrated licensing and deployment program schedule within the RSA calls for construction delivery of the PBMR demonstration plant module by mid-2010, with sequential delivery of additional commercial PBMR modules starting in 2013.

Dr. Matzie discussed U.S. nuclear utility interests in PBMR. These interests are reflected in the PBMR being included as a potential plant design in each of the three early site permit applications; the establishment of a PBMR U.S. Utility Advisory Group with seven member

utilities, and nuclear utility interest in the Department of Energy's Next Generation Nuclear Plant (including the PBMR as a potential design option) with NRC licensing.

Mr. Edward Wallace, Senior General Manager of U.S. Programs, PBMR Pty., presented their proposed plans for a limited-scope pre-application review, focused on key PBMR licensing issues and aimed at achieving a more effective and efficient PBMR DCA review. The proposed pre-application review activities involve scope, schedule and resource planning from November 2004 to June 2005, and conduct of the review, including completion of NRC staff position papers, by December 2006. The proposed pre-application review scope proposed by PBMR Pty. includes licensing basis event selection methodology and analysis assumptions; fuel design and qualification; applicable design codes and standards and materials selection; analytical codes verification and validation methodology; and single-module versus multiple-module design certification. PBMR Pty. estimates that the NRC staff resources needed to conduct the pre-application review are about 1.0-1.5 full-time-equivalent (FTE) for planning activities and about 3-5 FTE to conduct the review. The staff will review these resource estimates after receipt of any formal request for pre-application review.

At the end of the meeting the staff requested PBMR Pty. to submit a letter to the NRC to formally request the proposed PBMR pre-application interactions. The staff stated that the letter should be sent to the attention of Dr. Carl Paperiello, Director, Office of Nuclear Regulatory Research and it should clearly describe the proposed plans and schedules, the proposed pre-application topics, the desired deliverables, and the PBMR Pty. expectations on how the deliverables would be utilized in a PBMR DCA.

/RA/

Stuart D. Rubin, Senior Technical Advisor
for Advanced Reactors
Division of Systems Analysis and Regulatory Effectiveness
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