

March 15, 2006

ORGANIZATION: PEBBLE BED MODULAR REACTOR (PTY) LTD.

PROJECT: PEBBLE BED MODULAR REACTOR PRE-APPLICATION REVIEW

SUBJECT: SUMMARY OF PUBLIC MEETING WITH PEBBLE BED MODULAR REACTOR (PTY) LTD. FOR FAMILIARIZATION WITH PEBBLE BED MODULAR REACTOR DESIGN, LAYOUT, AND SYSTEMS

The U.S. Nuclear Regulatory Commission (NRC) staff met with representatives from Pebble Bed Modular Reactor (Pty) Ltd. on February 28 through March 2, 2006, to discuss design principles, layout, and systems of the Pebble Bed Modular Reactor (PBMR). The purpose of the meeting was to familiarize NRC staff with the PBMR design, in support of future white papers that will be submitted to NRC for design certification pre-application review. The meeting notice with agenda was published on February 14, 2006 (ML060450482). PBMR requested this meeting on February 2, 2006 (ML060370388) pursuant to a plan transmitted by letter dated December 8, 2005 (ML053420601) and discussed at the public meeting on December 12, 2005 (ML053630306).

The meeting was a Category 1 meeting and observed by the public and interested stakeholders. The attendance list for the meeting is shown as Enclosure 1 and the agenda is included as Enclosure 2. PBMR's meeting handouts can be accessed through the Agencywide Documents Access and Management System (ADAMS) under Accession No. (ML060650129). If you do not have access to ADAMS or if there are problems in accessing the handouts located in ADAMS, contact the NRC Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737 or by e-mail to pdr@nrc.gov.

The following areas of the PBMR design were discussed in the meeting:

- (1) PBMR Program Overview - Information was provided about the South African project activities and the technological basis for the design.
- (2) PBMR Design Principles - Information was provided about the core, fuel and thermodynamic parameters of the gas cycle.
- (3) Reactor Unit and Main Support Systems - Functional descriptions were provided for the main elements of the reactor unit and support systems, including the fuel handling system.
- (4) Power Conversion Unit - Information was provided about the Brayton Cycle and the sensitivity to various internal and external parameters. Descriptions were also provided of subsystems in the power conversion unit, such as the helium pressure boundary.
- (5) Auxiliary Systems Overview - Information was provided about key auxiliary systems such as the reactor cavity cooling system.
- (6) Civil Structures and Equipment Arrangements - Information was provided about the confinement philosophy and the building layout of the South African demonstration plant.

(7) Automation Systems - Information was provided about the control functions and the human-system interfaces.

(8) Electrical Systems - Information was provided about loads on the electrical systems and the standby power systems.

(9) Wrap-up - PBMR reiterated their objectives for the pre-application process and identified the topics for the planned March 15-16, 2006, meetings on safety design, plant operations, and events.

During the meeting, the NRC staff expressed interest in more detailed information on several key systems, such as the fuel handling system. PBMR (Pty) stated that many of the issues raised by the staff will be addressed during the second set of familiarization sessions on the safety design and analysis and plant operations and events scheduled for March 15-16, 2006.

Please direct inquiries regarding this meeting to N. Prasad Kadambi at 301-415-5896, or npk@nrc.gov.

/RA/

N. Prasad Kadambi, Project Manager
New & Advanced Reactors Branch
Division of Risk Assessment & Special Projects
Office of Nuclear Regulatory Research

Project No. 732

Enclosures: 1. Lists of Attendees
2. Agenda

cc w/encls: See next page

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/RA/

N. Prasad Kadambi, Project Manager
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Division of Risk Assessment & Special Projects
Office of Nuclear Regulatory Research

Project No. 732

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Distribution for February 28, March 1 and 2, 2006 PBMR Meeting dated March 15, 2006

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NRC/PBMR PUBLIC MEETING
TUESDAY, FEBRUARY 28, 2006 9:00 A.M. TO 5 P.M., T-2 B3
ATTENDANCE

Page 1 of 2

NAME	AFFILIATION
Tim Lupold	NRR/DOI
Stan Ritterbusch	Westinghouse
Johan Slabber	PBMR
T. Y. Chang	NRC/RES
Steven Arndt	NRC/RES
Charles Kling	Westinghouse
Sud Basu	NRC/RES
Kim Gruss	NRC/NRR/DC1
Sujit Samaddar	NRC/NRR/DE
Laura Quinn	NRR/DLR/REBA
Evan Keto	NRR/DLR/REBB
Barry Elliot	NRR/DC1
Peggy Bennett	RES
Marty Stutzke	NRR/DRA/APLA
John N. Ridgely	NRC/RES
Stuart Rubin	NRC/RES
Yuri Orechwa	NRC/NRR
Michael Waters	NRC/RES
Christiana Lui	NRC/RES
James Danna	NRC/RES
Kent B. Welter	NRC/RES
Ed Wallace	PBMR
Fred Silady	PBMR (Technology Insights)

Enclosure 1

NRC/PBMR PUBLIC MEETING
TUESDAY, FEBRUARY 28, 2006 9:00 A.M. TO 5 P.M.
ATTENDANCE

Page 2 of 2

NAME	AFFILIATION
Scott Penfield	PBMR
Edward Burns	PBMR
James Kim	NRC/NRR
M. Srinivasan	USNRC/RES
Joe Muscara	USNRC/RES
Don Carlson	USNRC/RES
Hans-Wolfgang Chi	PBMR (Technology Insights)
S. Bajorek	NRC/RES
D. Whittal	AREVA
F. Shahrokhi	AREVA
Trevor Cook	U.S. DOE
Ted Sullivan	NRC/NRR
Thecla Fabian	FCW
Jenny Weil	McGraw-Hill
K I Parczewski	NRC/NRR
G. Hammer	NRC/NRR
C. Antonescu	NRC/RES
Karl Fleming	PBMR-Technology Insights
N.P. Kadambi	NRC/RES

NRC/PBMR PUBLIC MEETING
WEDNESDAY, MARCH 1, 2006 9:00 A.M. TO 5 P.M.
ATTENDANCE

Page 1 of 2

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Ed Wallace	PBMR
Karl Fleming	PBMR-Technology Insights
Hans-Wolfgang Chi	PBMR (Technology Insights)
Stan Ritterbusch	Westinghouse
Wendy Wong	DOE
Stan Echols	NRC
Simon Sheng	NRC
Yuri Orechwa	NRC/NRR
Donald Carlson	NRC/RES
N.P. Kadambi	NRC/RES
Peggy Bennett	NRC/RES
Kamal Naidu	NRC/DE
Jet Vora	NRC/RES
Al Tardiff	NRC/NSIR
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Edward Burns	PBMR
James Kim	NRC/NRR
Farshid Shahrokhi	AREVA-NP
David Whittal	AREVA-NP
Johan Slabber	PBMR
Stuart Rubin	NRC/RES

NRC/PBMR PUBLIC MEETING
WEDNESDAY, MARCH 1, 2006 9:00 A.M. TO 5 P.M.
ATTENDANCE

Page 2 of 2

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Tim Lupold	NRR/DOI
Kris Parczewski	NRC/NRR
Vijay Goel	NRC/NRR
Herman Graves	NRC/RES

NRC/PBMR PUBLIC MEETING
THURSDAY, MARCH 2, 2006 9:00 A.M. TO 5 P.M.
ATTENDANCE

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Edward Burns	PBMR Team
David Whittal	AREVA-NP
Stan Ritterbusch	PBMR Westinghouse
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Mike Waterman	NRC/NRR - NRC/RES
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Bill Raughley	RES/DFERR
Jet Vora	RES/DFERR

PBMR Safety and Design Familiarization

Session 1 - Plant layout and systems, and fuel design / fueling operations

Tuesday, February 28, 2006, **Room T-2 B3**

9:00 a.m. Introductory Remarks

9:15 a.m. PBMR Program Overview

10:15 a.m. Break

10:30 a.m. PBMR Design Principles

12:15 p.m. Lunch

1:15 p.m. Reactor Unit and Main Support Systems

2:45 p.m. Break

3:00 p.m. Reactor Unit and Main Support Systems (Cont'd)

4:00 p.m. Open Discussion

Wednesday, March 1, 2006, **Room O-13 B4**

9:00 a.m. Power Conversion Unit

11:00 a.m. Break

11:15 a.m. Auxiliary Systems Overview

12:15 p.m. Lunch

1:15 p.m. Auxiliary Systems Overview (Cont'd)

2:30 p.m. Break

2:45 p.m. Civil Structures and Equipment Arrangements

3:45 p.m. Open Discussion

Thursday, March 2, 2006, **Room O-13 B4**

9:00 a.m. Automation System

10:45 a.m. Break

11:00 a.m. Electrical System

11:30 a.m. Wrap-up Discussions