

February 12, 2002

MEMORANDUM TO: Ashok C. Thadani, Director
Office of Nuclear Regulatory Research

FROM: Farouk Eltawila, Director */RA/*
Division of Safety Analysis and Regulatory Effectiveness
Office of Nuclear Regulatory Research

SUBJECT: MEETING WITH EXELON GENERATION COMPANY, DEPARTMENT
OF ENERGY, AND OTHER INTERESTED STAKEHOLDERS
REGARDING THE PEBBLE BED MODULAR REACTOR
(PROJECT 713)

On November 29-30, 2001, the Nuclear Regulatory Commission (NRC) staff held the 7th meeting with representatives of Exelon Generation Company (Exelon). Other stakeholders, including the Department of Energy (DOE), were provided an opportunity to comment. The meeting addressed pre-selected topics associated with the Pebble Bed Modular Reactor (PBMR) pre-application review. Attachment 1 contains the agenda for the meeting. Attachment 2 contains a list of the attendees.

In his opening remarks, RES Project Manager, Stuart Rubin (NRC), discussed the principle objectives of the PBMR pre-application review, which is to prepare feedback and guidance to Exelon on the significant issues related to the siting, construction, and licensing of a PBMR in the United States. Exelon's comments and questions and the Future Licensing and Inspection Readiness Assessment (FLIRA) Report prepared by the staff were discussed. A PBMR Pty. representative provided a comprehensive tutorial presentation on the PBMR operational modes and operation states of the PBMR. This was followed by an Exelon presentation on their views of the kinds of testing that would be needed for a PBMR combined construction permit and operating license (COL).

Nanette Gilles of the New Reactor Licensing Project Office (NRLPO), NRR, provided a brief overview of the future licensing and inspection readiness assessment that was included as an attachment to SECY-01-0188, dated October 12, 2001. Ms. Gilles' presentation reviewed information regarding the purpose of the assessment and the process and assumptions that were used to perform the assessment. The slide presentation is provided in Attachment 3. Following the presentation, Exelon was provided an opportunity to comment and discuss questions previously provided to the staff in their letter dated, November 26, 2001 (Attachment 4). Kevin Borton of Exelon lead the discussion. Some of the key issues discussed were the impact of planned rulemaking on potential future applications, the scope of the Part 52 Rulemaking with respect to the NEI petitions, and the assumptions that were used by the staff in developing resource estimates and schedules.

William Kriel, PBMR Pty. provided a tutorial presentation on "PBMR Operational Modes and States." The presentation provided an overview of the operational states and application of

PBMR Pty. analytical methods used to analyze the PBMR operations such as changes in modes and states and anticipated operational occurrences. Attachment 5 contains a copy of the slides used during the presentation. Additionally, on November 27, 2001, in support of the presentation, Exelon provided the staff with an advance copy of a technical "white paper" entitled "PBMR Operational Modes and States." The white paper (Attachment 6) formally documented the technical information covered in the oral presentation. Exelon did not request a NRC formal review of this presentation.

The final presentation was given on "Testing Requirements for a Combined License" by Kevin Borton (Exelon) and Rod Krich (Exelon). Attachment 7 contains a copy of the slides presented during this presentation. In regards to testing requirements (see summary tables in Attachment 7), the applicant (Exelon) stated that there were no testing prerequisites for the issuance of a combined license. Exelon believes that full-scale prototype testing is not required for a combined license, and to require prototype testing for issuance of a combined license would create a "Catch-22." Exelon intends to use previous PBMR test data and believes that demonstration testing in South Africa was not needed to support licensing of the PBMR in the United States. Exelon also requested future discussions on the process and need for testing to license the PBMR in the United States.

Jerry Wilson (NRLPO) stated that there are three types of testing, that relate to the licensing of nuclear power plants (NPPs) in the in the United States: (1) "Confirmatory" testing, which is not required to license NPPs and, is performed to confirm the understanding of a phenomena or the performance of a safety feature; (2) "Verification" testing, which is required under section XI of Appendix B to Part 50 and 10 CFR 52.97(b), and is performed during and after construction of the NPP to verify that the as-built plant conforms with the approved design, and (3) "Qualification" testing, which is required under section III of Appendix B to Part 50 and 10 CFR 52.47(b)(2), and is performed to demonstrate that safety features will perform as predicted in the safety analysis report and to qualify analytical codes for use in the plant's safety analysis.

Mr. Wilson stated that if it is determined that qualification testing is necessary for a NPP design, NRR will require that testing be completed before a license is issued. In addition, license conditions could not be used in lieu of performing qualification tests before licensing. Mr. Wilson stated that different type(s) of testing may be necessary to qualify a NPP, depending on the design, and would be determined on a case-by-case basis. Furthermore, while full-scale prototype testing is not a necessary requirement for licensing NPPs, it could be required for certain designs. Mr. Wilson disagreed with Exelon's claim that there is a "Catch-22" in the process for licensing a prototype NPP. It was agreed that NRC and Exelon should have future discussions on the process for determining whether and what testing will be necessary to license a PBMR in the United States.

Attachments: As stated **ADAMS Package Accession Number ML020450095**

cc w/o atts: See attached list

A. Thadani

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(PROJECT 713)

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cc w/o atts (continued):

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cc w/o atts: See attached list

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Mr. James Riccio
Public Citizen's Critical Mass Energy Project
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AGENDA

NRC Meeting with Exelon and DOE on the PBMR Pre-application Review
(ASLBP Hearing Room T3B45)

Thursday, November 29, 2001
(1:00 pm - 3:15 pm)

1:00-1:10 PM	Introductory Remarks (A. Cubbage)	NRC
1:10-1:25 PM	Future Licensing and Inspection Readiness Assessment Report (N.Gillles)	NRC
1:25-3:00 PM	Discussion of Exelon Comments and Questions on the FLIRA Report (K. Borton)	Exelon/NRC
3:00-3:10 PM	Stakeholder Comments	
3:10-3:15 PM	Closing Remarks	NRC/Exelon

Friday, November 30, 2001
(9:00 am - 1:00 pm)

9:00-9:15 AM	Introductory Remarks (S. Rubin)	NRC
9:15-10:30 AM	PBMR Operation, Modes and States (Willem Kriel)	PBMR
10:30-10:45 AM	Break	
10:45-11:45 AM	PBMR Operation, Modes and States - Continued (Willem Kriel)	PBMR
11:45-12:45 PM	Exelon Views on Testing Requirements for a PBMR COL (Rod Krich, Kevin Borton)	Exelon
12:45-12:55 PM	Stakeholder Comments	
12:55-1:00 PM	Closing Remarks	NRC/Exelon

**NRC/EXELON PBMR PRE-APPLICATION MEETING
NOVEMBER 29, 2001**

NAME	AFFILIATION	PHONE	E-MAIL
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**NRC/EXELON PBMR PRE-APPLICATION MEETING
NOVEMBER 29, 2001**

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NOVEMBER 30, 2001**

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