

NR

From: Stuart Rubin
To: Farouk Eltawila
Date: 8/9/02 7:42AM
Subject: Drop in Visit by David Nicholls

Farouk:

Amy Cabbage left me a voice message requesting that I confirm the status of the C-Note. I had told her in an E-mail message earlier this week that you had indicated that you sent the attached draft on to John Craig (through the RES front office) Perhaps Marcia can track down the status of the C-Note and get back to all on the distribution to this message. (Also, I have not seen the final version)

Thanks

Stu

Attached is a draft of the C-note text for the subject meeting Please provide your comments before I send it over to NRR and OIP for review and comment

Thanks

Stu

CC: Amy Cabbage; Howard Faulkner, John Flack, Marcia Karabelnikoff, Thomas Bergman

T/70

On August 1, 2002, David Nicholls, CEO, PBMR Co., Republic of South Africa (RSA) conducted a drop-in visit with management and staff from RES, NRR and OIP. Mr. Nicholls presented an overview of the status and future plans and schedule for the PBMR Project. He indicated that they expect to resume PBMR pre-application activities "in earnest" in 2005, and submit an application for design certification in 2006. Between now and 2005, they would like to interact on a limited basis to try to reach resolution on certain key technical issue areas and to discuss NRC expectations for testing. One area mentioned for technical area mentioned was the possibility of NRC review of topical reports submitted for PBMR safety analysis codes and methods. Currently, licensing the construction of a demonstration plant module in RSA is a priority focus for PBMR organizational resources. Accordingly, the PBMR company does not have sufficient staff available to interact with the NRC at the level that Exelon had interacted during their PBMR pre-application review (e.g., monthly meetings).

Mr. Nicholls also discussed several major changes that have evolved to the PBMR design. Changes include: reducing the number of modules in a plant from 10 to 8, utilizing dry-gas seals, increasing electrical rating from 150 MWe to 165 MWe per module, providing for only 10 years worth of spent fuel storage within the spent fuel containers inside the reactor building. Additional years of onsite spent fuel storage capability would be provided in concrete storage cylinders located on pedestals outside the reactor building. The graphite pebble (porous) central reflector column has been replaced by a fixed solid graphite block central reflector column. He indicated that this change reduces core (fueled annulus) helium coolant bypass flow and lowers the maximum fuel temperature from 1250° to 1350° C to about 1130° C. To ensure structural integrity of the core, the PBMR design-basis will include replacement of the graphite outer and central reflector blocks after about 20 years. The reactor system is being specifically designed to allow ease of removal and replacement of these blocks. Fuel design burn up has been increased from 80 GWd/t to 100 GWd/t. The maximum burnup was believed by PBMR to be 160 GWd/t.

PBMR Co. expects to start construction of a demonstration plant in the RSA in November 2005 and to complete construction in October 2007. Initial fuel loading would occur in August 2008. He indicated that PBMR project was beginning to transition from a purely design focus to an emphasis on major equipment procurement for both the PBMR demonstration plant and the PBMR fuel fabrication facility. This was occurring in anticipation of a favorable outcome of the PBMR feasibility study and a decision to proceed with construction of a demonstration plant. He indicated that the PBMR company had a \$1B budget to achieve these results.

PBMR has contracted with Nuclear Fuel Industries Company (NFI) of Japan to design the PBMR fuel fabrication facility in South Africa and to supply the initial fuel core for the PBMR demonstration facility. NFI fabricated the fuel for the High Temperature Engineering Test Reactor (HTTR) which is a prismatic block HTGR which is now operating at the Japan Atomic Energy Research Institute.

Mr. Nicholls said that PBMR Co. would not pursue the fuel irradiation test program that had been jointly developed by Exelon and DOE and submitted to the NRC as part of the PBMR fuel qualification program since it was not considered necessary for licensing the PBMR in the RSA. However, he indicated that PBMR supported others, such as NRC and DOE, conducting such testing. Finally, he indicated that the PBMR Co. would welcome cooperative technical exchange activities between the National Nuclear Regulator in the RSA and the USNRC in connection with the safety review of the PBMR design.