MNES
MHI Nuclear Energy Systems, Inc.

February 16, 2007

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: David B. Matthews

Project No. 0751
MNES Ref: NS-USAPWR-07-01

Subject: US-APWR Testing Schedule

Consistent with the request from the USNRC concerning opportunities for the NRC to observe the MHI testing program, and tour the testing facilities for the US-APWR, the Attachment to this letter identifies the tests and the associated time windows.

It is our understanding that this information is to be used by the NRC to begin planning for travel to Japan to view the testing, and to discuss how test procedures are reviewed and followed by the MHI Quality Assurance Group.

MHI will quickly determine the exact testing dates and finalize the test procedures. This information will be provided to the NRC as soon as possible.

If the NRC has any questions or additional information for MHI, please contact me using the information provided below.

Sincerely,

MHI Nuclear Energy Systems, Inc

C. K. Paulson

C. Keith Paulson, Senior Technical Manager
Direct Telephone: 412 374-4063
E-mail: ck_paulson@mhi-nes.com

cc: S. R. Monarque

MAILING ADDRESS
MHI Nuclear Energy Systems, Inc.
Nuclear Services
P.O. Box 355, Suite 301 West
Pittsburgh, PA 15230

STREET ADDRESS
4350 Northern Pike
Suite 301 West
Monroeville, PA 15146

TELEPHONE
(412) 374-7395

FACSIMILE
(412) 374-7377

D079
Add: Dave B. Matthews

Feb.13, 2007
Mitsubishi Heavy Industries, Ltd.

Confirmation Tests Planned for US-APWR DC Application

The lower core internal design of US-APWR have been partly changed from the reference Japanese APWR since the active core height has been increased from approximately 12ft to 14ft and the top mounted incore instrumentation system (ICIS) has been adopted. The effects of these design changes are basically verified by analytical evaluations for design review, however the following tests are planned to confirm that the design has enough margin.

(1) Neutron Reflector (NR) Reflood Characteristics
NR is adopted in the US-APWR design. WCOBRA/TRAC has models for thermal conduction and surface heat transfer in the NR. The test is performed just for confirmation of the ability of WCOBRA/TRAC.

(2) Reactor Vessel Lower Plenum Flow Tests
The lower core plate and lower core support is integrated since 14ft core active height is selected for US-APWR. Additionally, the adoption of top mounted ICIS results in the simplification of reactor internal structures in the lower plenum. The design of core internal has been performed considering the influence of these changes on the inlet flow. The confirmation test of this design will be performed.

The following table summarizes objective, description and schedule of each planned test.

Title	Objective	Description	Schedule	Location
Neutron Reflector Re-flood tests	Confirmation of WCOBRA/TRAC prediction of re-flood characteristics	Generated vapor and droplet flow rates accompanied by quench of NR metal will be measured to confirm the heat transfer model of WCOBRA/TRAC related to metal quenching.	Test Aug. 2007 – Nov. 2007	Takasago R&D Center
Lower Plenum Flow Tests	Confirmation of Reactor Vessel Lower Plenum Design	Core inlet flow rate at fuel assembly channels will be measured to confirm the flow distribution at core inlet.	Test Jul. 2007 – Sep. 2007	
		Flow-induced vibration of lower plenum structures will be measured to confirm the analytical prediction of FIV response.	Test Oct. 2007	
		Fluid temperature at fuel assembly channels will be measured to confirm the temperature distribution at core inlet for non-uniform cooling condition.	Test Dec. 2007	