



**MITSUBISHI HEAVY INDUSTRIES, LTD.**  
16-5, KONAN 2-CHOME, MINATO-KU  
TOKYO, JAPAN

October 4, 2012

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555  
ATTN David B. Matthews, Director  
Division of New Reactor Licensing

52-21

**Subject: Status of the Review of US-APWR Design Certification Application  
Regarding Seismic and Structural Analyses**

Dear Sir:

This letter is in response to your letter of September 13, 2012 concerning the status of the review of the seismic and structural analyses for the US-APWR Design Certification. MHI acknowledges that there have been more structural and seismic analyses changes to the US APWR standard plant design than desired which have impacted the NRC staff review of these topics. The changes have occurred in part because the US-APWR design was originally based on the hard rock site conditions that are typical in Japan. As is common practice in the United States, a standard plant design must meet a broader range of soil conditions, albeit both of our currently affiliated COLAs are founded on rock. In addition, the original analyses were based on modeling previously common in the nuclear industry for seismic analyses but no longer the state of the art and therefore not acceptable without extensive justification. Consequently, over the past eighteen months a number of design improvements and analysis methodology changes were required to make the design consistent with current expectations. The overall effect of the changes that have been made has been to simplify the design of the already robust US-APWR standard plant.

MHI took the following action to minimize the potential for additional fundamental design changes. A team of experts reevaluated our DCD submittal against the NRC's Standard Review Plan. This team also performed an analysis of revisions to all relevant guidance documents that have been issued by the NRC since the development of the DCD. This integrated examination of the US APWR design did not identify any significant safety issues that may remain and provides assurance that no additional fundamental design changes will be identified going forward with the NRC's review. While minor design enhancements are always a possibility, no changes are expected which would alter the design inputs for the seismic analyses. With regard to ensuring an integrated design approach, a 'roadmap' document was developed to ensure that the overall design approach is adequately described and complete. This document also ensures that the Technical Report submittals are consistent with each other and utilize appropriate design inputs, assumptions and methodologies for all seismic and structural analyses.

DOB  
WRO

In order to help ensure high quality, technical sufficiency and completeness of submittals, MHI has instituted three levels of independent review. First, submittals are and will continue to be subject to oversight by the COL applicants through their participation in the Seismic Task Force. Second, MHI will establish a Quality Review Team comprised of technical and licensing personnel which will perform an internal peer review. Third, MHI will engage an external and independent company experienced with nuclear seismic design activities to perform a confirmatory review to ensure quality.

The timeliness of our submittals will be assured through increased oversight of our subcontractors and through the routine monitoring of production schedules. MHI has conducted a schedule improvement review to revisit our planned work and we have been able to move up the deliverable dates for DCD changes, RAI responses and Technical reports. Our production schedules and submittal date allow sufficient time to accomplish the quality reviews discussed above. MHI will submit the specific details regarding these schedule improvements in our upcoming revision to the Seismic Closure Plan.

Management oversight of our seismic and structural design going forward has been strengthened. In addition to daily management oversight by MHI and MNES managers, Vice-President and Executive Director involvement is routinely provided. The intent of this effort is to ensure the adequacy of resources, maintenance of the schedule and ensure quality.

In summary, MHI is committed to ensuring a seismic design that is fully integrated and that submittals to the NRC are of high quality. As a result of efforts to date, the potential for additional structural design changes in support of the seismic analyses has been minimized. MHI appreciates the focus brought to the seismic activities and the constructive feedback and insights gained from the NRC. I am confident that the design changes that are being implemented to resolve design feasibility issues will support the efficient completion of your seismic review activities.

I look forward to meeting with you and your staff on October 10, 2012 to discuss this response and provide you the opportunity to discuss it further with us. Please contact Mr. Joseph Tapia, General Manager of Licensing, Mitsubishi Nuclear Energy Systems, Inc., if the NRC has questions concerning any aspect of this letter.

Sincerely,



Yoshiki Ogata, Director  
APWR Promoting Department  
Mitsubishi Heavy Industries, Ltd.  
16-5, Konan 2-Chome, Minato-Ku  
Tokyo, 108-8215 JAPAN

Contact Information:

Joseph Tapia, General Manager of Licensing Department  
Mitsubishi Nuclear Energy Systems, Inc.  
1001 19<sup>th</sup> St. North, Suite 710  
Arlington, VA 22209  
E-mail: [joseph\\_tapia@mnes-us.com](mailto:joseph_tapia@mnes-us.com)  
Telephone: (703)908-8055