

# REQUEST FOR ADDITIONAL INFORMATION 448-3469 REVISION 1

9/1/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 09.03.02 - Process and Post-Accident Sampling Systems  
Application Section: 9.3.2

QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects)  
(CIB1)

09.03.02-11

## Background

GDC 64 requires monitoring the reactor containment atmosphere and other locations for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents. The SRP and RG 1.21 require that samples be taken in such a way as to be completely representative of the region being sampled. For gas sample lines, the DCD states that heat tracing and insulation are used to eliminate condensation. However, once in a gas sample vessel, dew condensation is collected and routed to holdup tanks, but no mention is made of analysis for possible dissolved contaminants such as dissolved fission product iodine. This is especially important, since the PGSS also doubles as the PASS gas sample line. In RAI 9.3.2-7 (Reference 1), the staff requested the applicant to explain how species in the condensate would be accounted for. In reply, MHI explained that there was very little likelihood that any dew condensation would occur, even in accidents (Reference 2). However, there are undoubtedly occasions when dew condensation would occur, since MHI has planned sampling procedures that account for it. Furthermore, accident conditions are ripe for such circumstances, since the temperature in containment is elevated, the moisture level is high due to steam from the RCS and spray water, and important water-soluble fission products (such as I and Cs) may still have elevated airborne concentrations. Thus, to fully measure gas samples as required by RG 1.21, any species in condensation must be accounted for.

## Requested Information

Describe how measurements can account for important constituents that may dissolve in dew condensation of gas samples.

## References

1. "Request for Additional Information No. 294-2129 Revision 1, SRP Section: 09.03.02 - Process and Post-Accident Sampling Systems, Application Section: 9.3.2," March 31, 2009 (ADAMS Accession No. ML090920137).

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2. Letter from Yoshiki Ogata, MHI, to NRC dated May 14, 2009; Docket No. 52-021, MHI Ref: UAP-HF-09241; Subject: MHI's Response to US-APWR DCD RAI No. 294-2129 Revision 1 (ADAMS Accession No. ML091380162).