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TOKYO, JAPAN

May 28, 2009

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

Attention: Mr. Jeffrey A. Ciocco

Docket No. 52-021
MHI Ref: UAP-HF-09268

Subject: MHI's Responses to US-APWR DCD RAI No. 360-2767 Revision 1

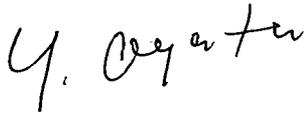
Reference: [1] "Request for Additional Information No. 360-2767 Revision 1, SRP Section: 09.01.03 – Spent Fuel Pool Cooling and Cleanup System - Design Certification and New License Applicants, Application Section: 9.1.3," dated May 13, 2009.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Response to Request for Additional Information No. 360-2767 Revision 1".

Enclosure 1 is the response to 1 question that is contained within Reference [1].

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of the submittals. His contact information is below.

Sincerely,



Yoshiki Ogata,
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

DOB
MLW

Enclosures:

1. Responses to Request for Additional Information No. 360-2767 Revision 1

CC: J. A. Ciocco
C. K. Paulson

Contact Information

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Enclosure 1

UAP-HF-09268
Docket No. 52-021

Responses to Request for Additional Information
No. 360-2767 Revision 1

May 2009

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

5/27/2009

**US-APWR Design Certification
Mitsubishi Heavy Industries, Ltd.
Docket No. 52-021**

RAI NO.: NO. 360-2767 REVISION 1
SRP SECTION: 9.1.3 – Spent Fuel Pool Cooling and Cleanup System
APPLICATION SECTION: 9.1.3
DATE OF RAI ISSUE: 5/13/2009

QUESTION NO.: 09.01.03-6

RAI 09.01.02-19 (Reference 1) requested that the applicant provide a more detailed explanation about its sampling and impurity limits in the SFP water. RAI 09.01.03-05 (Reference 2) inquired about additional purity evaluation prior to refueling operations.

The applicant's response to RAI 09.01.02-19 (Reference 3) listed a revised Table 9.1.3-1 to be included in the DCD. The applicant's response to RAI 09.01.03-05 (Reference 4) also listed a revised Table 9.1.3-1 to be included in the DCD, as well as a table used to explain its response (Table 1). Various entries in the three tables are inconsistent, perhaps due to typographical errors. For example, Table 1 of Reference 4 gives the units for the standard values as ppm, and the units for the limiting values as ppb, but the values for all species appear appropriate for ppb. The units for Table 9.1.3-1 of Reference 3 and Table 9.1.3-1 of Reference 4 are in ppm and appear appropriate. However, the limiting values of silica differ between the two tables. Also, Table 9.1.3-1 in Reference 4 has an extra column when compared to the same table in Reference 3.

Requested Information

1. Reconcile the differences in the tables from References 3 and 4, and verify the replacement to be included in the revised DCD as Table 9.1.3-1.

References

1. "Request for Additional Information No. 248-2178 Revision 1, SRP Section: 09.01.02 – New and Spent Fuel Storage, Application Section: Section 9.1.2", dated March 2, 2009. (ADAMS Accession No. ML090620645)
2. "Request for Additional Information No. 201-2199 Revision 1, SRP Section: 09.01.03 – Spent Fuel Pool Cooling and Cleanup System, Application Section: 9.1.3", dated February 24, 2009. (ADAMS Accession No. ML090560657)
3. Letter from Yoshiki Ogata, MHI, to NRC dated March 30, 2009; Docket No. 52-021 MHI Ref: UAP-HF-09128; Subject: MHI's Response to US-APWR DCD RAI No. 248-2178 Revision 1 (ADAMS Accession No. ML090910646)
4. Letter from Yoshiki Ogata, MHI, to NRC dated March 26, 2009; Docket No. 52-021, MHI Ref: UAP-HF-09126; Subject: MHI's Response to US-APWR DCD RAI No. 201-2199 Revision 1 (ADAMS Accession No. ML090920844)

ANSWER:

The inconsistencies in the three tables are due to typographical errors in Table 1 of Reference 4 and revised Table 9.1.3-1 of Reference 3 for the DCD. The unit used in the third column (US-APWR Standard) in Table 1 of Reference 4 should be in ppb not ppm so that it matches the unit used in the EPRI water chemistry requirements. The silica limit values of ≤ 150 ppb in Table 1 of Reference 4 and ≤ 1.5 ppm in Table 9.1.3-1 of Reference 3 are incorrect. The correct limit value for silica is ≤ 1.0 ppm.

The extra column in the revised Table 9.1.3-1 given in Reference 3 has been added to include the monitoring frequencies being asked for in the RAI. A new table with incorporated corrections and monitoring frequencies will be provided to replace the original Table 9.1.3-1 in the DCD, thus the contradicting revised tables given in References 3 and 4 should be ignored.

Impact on DCD

Table 9.1.3-1 of Tier 2 DCD shall be replaced with the table below:

	Parameter	Unit	Standard value	Limit value	<u>Sampling Frequency</u>
1	Boron	ppm	-	≥ 4000	<u>1/Week</u>
2	Chloride ion	ppm	≤ 0.05	≤ 0.15	<u>1/Week</u>
3	Fluoride ion	ppm	≤ 0.05	≤ 0.15	<u>1/Week</u>
4	<u>Sulfate</u>	<u>ppm</u>	<u>≤ 0.05</u>	<u>≤ 0.15</u>	<u>1/Week</u>
5	<u>Silica</u>	<u>ppm</u>	<u>≤ 1.00</u>	<u>≤ 1.00</u>	<u>1/Month</u>
6	Turbidity	ppm	≤ 0.50	-	<u>1/Week</u>
7	<u>Gamma Isotopics</u>	<u>$\mu\text{Ci/ml}$</u>	-	-	<u>Continuous</u>

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.