


MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

July 10, 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- 09367

Subject: MHI's Responses to US-APWR DCD RAI No. 387-2931 Revision 1

Reference: [1] "Request for Additional Information No. 387-2931 Revision 1, SRP Section: 09.01.02 – New and Spent Fuel Storage - Design Certification and New License Applicants, Application Section: 9.1.2," dated June 11, 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. 387-2931 Revision 1".

Enclosure 1 is the responses to 3 questions that are contained within Reference [1]. Of these questions, the response to Question 09.01.02-23 is scheduled within 60 days of receipt of RAIs, because it must be discussed compliance with RG 4.21 which was issued after the US-APWR DCD docketing.

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,

Y. Ogata

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

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NRC

Enclosures:

1. Responses to Request for Additional Information No. 387-2931 Revision 1.

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

Contact Information

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Enclosure 1

UAP-HF-09 09367
Docket No. 52-021

Responses to Request for Additional Information
No. 387-2931 Revision 1

July 2009

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

07/10/2009

US-APWR Design Certification

Mitsubishi Heavy Industries, Ltd.

Docket No. 52-021

RAI NO.: NO. 387-2931 REVISION 1

SRP SECTION: 09.01.02 – New and Spent Fuel Storage

APPLICATION SECTION: 9.1.2

DATE OF RAI ISSUE: 06/11/2009

QUESTION NO.: 09.01.02-21

In RAI No. 132-1538, Question No.: 09.01.02-06, the staff requested the applicant to include in the DCD a description of the inspection program (including testing interval) for the spent fuel storage racks and spent fuel pool liner. In its response to this RAI dated 1/29/09, the applicant stated that:

Inspections of the integrity of the liner and SFP storage racks, verifying their presence, absence of significant corrosion, etc., will be conducted upon completion of construction/installation, and informally upon every visit of plant personnel to the operating floor in the vicinity of the SFP. Formal inspections will be conducted before every fuel move interfacing with the SFP, and especially for the SFP racks prior to their utilization. Any build-up of crud or debris that may interfere with inspection of the SFP floor areas or, in a worst-case scenario, have the potential to obstruct coolant flow for the spent fuel storage racks, will be cleared as necessary by underwater vacuum systems with underwater viewing capabilities whenever necessary prior to significant build-up.

The applicant has not discussed the procedure or created a COL information item requiring the COL applicant to create a procedure that will instruct the operator to perform the above mention

formal inspection of the integrity of the spent fuel racks.

The staff requests the applicant to discuss in the DCD the key elements of the procedure that will instruct the operator to perform the above mention formal inspection of the integrity of the spent fuel racks, or to create a COL information item in the DCD that will direct the COL applicant to create such procedure.

ANSWER:

DCD Tier 2 will be revised to add a COL information item to direct the COL applicant to provide provisions that will instruct the operator to perform formal inspection of the integrity of the spent fuel racks.

Impact on DCD

- Add the following as ninth paragraph to DCD Section 9.1.2.1:

“The COL Applicant is to create a procedure that will instruct the operator to perform formal inspection of the integrity of the spent fuel racks.”

- Add the following COL information item to the DCD Section 9.1.6;

“COL 9.1(9) The COL Applicant is to create a procedure that will instruct the operator to perform formal inspection of the integrity of the spent fuel racks.”

Impact on COLA

The COLA shall be updated to address changes to the DCD for COL item 9.1(9).

Impact on PRA

There is no impact on the PRA.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

07/10/2009

US-APWR Design Certification

Mitsubishi Heavy Industries, Ltd.

Docket No. 52-021

RAI NO.: NO. 387-2931 REVISION 1

SRP SECTION: 09.01.02 – New and Spent Fuel Storage

APPLICATION SECTION: 9.1.2

DATE OF RAI ISSUE: 06/11/2009

QUESTION NO.: 09.01.02-22

In RAI No. 132-1538, Question No.: 09.01.02-012, the staff requested the applicant to discuss in the DCD the SFP liner capacity to withstand all design basis loads.

In its response to this RAI dated January 29, 2009, the applicant stated that the key feature of the liner, its leak-tightness, will be established by the pit's maintaining of the water used to fill it upon completion of construction and construction inspections, and by the absence of water in the liner leakage collection system which is provided with a leak detection capability, so no liner ITAAC is considered necessary.

The staff agrees with the applicant statement that no ITAAC is need to verify the leak tightness of the spent fuel pool liner, but the staff did not find the available preoperational tests appropriate to test the leak-tightness of the liner. The staff evaluated DCD Section 14.2.12.1.85, "Spent Fuel Pit Cooling and Purification System (SFPCS) Preoperational Test," an found that this preoperational test will fill the spent fuel pool in order to test the SFPCS, but evaluating the leak-tightness of the liner is not one of the test objectives. The staff considers that evaluating the leak-tightness of the liner should be one of the test objectives.

The staff requests the applicant to include in the DCD the evaluating the leak-tightness of the spent fuel pool liner as one of the objectives of Preoperational Test 85.

ANSWER:

Evaluation of the leak-tightness of the spent fuel pool liner will be added as one of the objectives of Preoperational Test 14.2.12.1.85.

Impact on DCD

- Replace fifth Objective of the Preoperational Test 14.2.12.1.85 with the following:

“5. To demonstrate that the spent fuel pit can be filled from the RWSP or primary makeup water **and retain its leak-tightness.**”

- Replace third Test method of the Preoperational Test 14.2.12.1.85 with the following:

“3. The ability to partially fill the spent fuel pit from the RWSP and PMWS **and retain its leak-tightness** is verified.”

- Replace third Acceptance Criteria of the Preoperational Test 14.2.12.1.85 with the following:

“3. The spent fuel pit can be filled from either the RWSP or the PMWS. **The level of water necessary to perform its design basis functions is maintained and demonstrated by the instrumentation described in DCD Section 9.1.3.1.**”

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.