

US-APWRRRAIsPEm Resource

From: Buckberg, Perry
Sent: Tuesday, January 14, 2014 1:40 PM
To: 'us-apwr-rai@mhi.co.jp'; US-APWRRRAIsPEm Resource
Cc: Lee, Samuel; Curran, Gordon; McKenna, Eileen; Kallan, Paul
Subject: US-APWR Design Certification Application RAI 1070-7386 (Section 09.05.04 - Emergency Diesel Engine Fuel Oil Storage and Transfer System)
Attachments: US-APWR DC RAI 1070 BPTS 7386.pdf

MHI,

The attachment contains the subject fuel oil related request for additional information (RAI). This RAI was sent to you in draft form on January 13, 2014 resulting in no need for clarification. Your licensing review schedule assumes technically correct and complete responses when the response is issued.

Please submit your RAI response to the NRC Document Control Desk.

Thanks,

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U.S. Nuclear Regulatory Commission

Office of New Reactors

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REQUEST FOR ADDITIONAL INFORMATION 1070-7386

Issue Date: 1/14/2014

Application Title: US-APWR Design Certification - Docket Number 52-021

Operating Company: Mitsubishi Heavy Industries

Docket No. 52-021

09.05.04 - Emergency Diesel Engine Fuel Oil Storage and Transfer System

QUESTION:

09.05.04-52

The staff reviewed EQ report MUAP-10023, Revision 6, for the US-APWR GTG and found a potential inconsistency between ASTM fuel oil standards used for GTG EQ qualification program. NRC guidance and US-APWR FSAR (including Technical Specification) specify use of ASTM D975 diesel fuel standard, as shown in references below. However, the US-APWR GTG was EQ qualified utilizing ASTM D396 standard for fuel oil, as demonstrated in MUAP-10023, and the staff is unable to locate any justification of the mixed use of fuel standards.

The standards in question are ASTM D975 "Standard specification for Diesel Fuel Oils" and ASTM D396 "Standard Specification for Fuel Oils." It should also be noted that use of D396 is currently not endorsed by the NRC. The following are a few locations of ASTM references:

- MUAP-10023 (EQ test report) Section 5.2.3 qualified GTG using:

"Engine fuel will be commercial grade No. 2 fuel oil, with limits as stated in ASTM Specification D-396 (Reference 10-7)."

- FSAR Section 9.5.4.2.3 shows GTG fuel as follows:

"The diesel fuel oil choice is in accordance with ASTM D975, and Chapter 16 requirements (Ref. 9.5.4-10)."

- FSAR Section 16, Bases B3.8.3 - SR 3.8.3.3 states:

"Within 31 days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975-07b (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-07b (Ref. 6)..."

and,

"Verify in accordance with the tests specified in ASTM D975-07b..."

- RG 1.137 states:

"The NRC endorses, in part, the requirements for the design and testing of EDG fuel oil and fuel oil systems used in safety-related applications at nuclear power plants as described in ANSI/ANS-59.51-1997, and ASTM standard D975-13."

- ISG 021 states:

"Only EGTG systems that are air cooled and fueled by diesel fuel oil, in accordance with ASTM D975, are considered in this ISG."

The applicant is requested to confirm which ASTM standard will be used during standard operation of the GTG and justify the chosen fuel oil is properly qualified to ensure reliable diesel generator and gas turbine

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generator operation and performance are maintained and designed to be compatible with postulated environmental conditions.