


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

November 26, 2012

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-12293

Subject: MHI's Response to US-APWR DCD RAI No. 975-6927 (SRP 14.03.07)

Reference: 1) "Request for Additional Information No. 975-6927, SRP Section 14.03.07 - PLANT SYSTEMS - INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA – Application Section: 14.2.12.1.46", dated November 5, 2012.

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. 975-6927."

Enclosed is the response to one RAI question contained within Reference 1.

Please contact Mr. Joseph Tapia, General Manager of Licensing Department, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this submittal. His contact information is provided below.

Sincerely,

 ^{for}

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

Enclosure:

1. Response to Request for Additional Information No. 975-6927

DOB
MRO

CC: J. A. Ciocco
J. Tapia

Contact Information

Joseph Tapia, General Manager of Licensing Department
Mitsubishi Nuclear Energy Systems, Inc.
1001 19th Street North, Suite 710
Arlington, VA 22209
E-mail: joseph_tapia@mnes-us.com
Telephone: (703) 908 – 8055

Docket No. 52-021
MHI Ref: UAP-HF-12293

Enclosure 1

UAP-HF-12293
Docket No. 52-021

Response to Request for Additional Information No. 975-6927

November 2012

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

11/26/2012

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: 975-6927
SRP SECTION: 14.03.07 - PLANT SYSTEMS - INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA
APPLICATION SECTION: 14.2.12.1.46
DATE OF RAI ISSUE: 11/05/2012

QUESTION NO.: 14.03.07-93

This is a follow-up to RAI 959-6765, Question 09.04.01-33.

Regulatory Basis: RG 1.155, RG 1.9 "Application and Testing of Safety-Related Diesel Generators in Nuclear Power Plants"

The staff notes that the applicant's response to Question 09.04.01-33 provided acceptable amendments to Sections "A. Objectives", "B. Prerequisites" and "C. Test Method " for the preoperational test "14.2.12.1.46 Alternate AC Power Sources for Station Black Out Preoperational Test". However, no amendment for Section "D. Acceptance Criteria" was provided for the preoperational test.

The staff believes that the addition of an acceptance criterion to the preoperational test is warranted. This criterion should reflect the related test Objective "3" and should provide a clear threshold for acceptance of the test results. The acceptance criteria should be congruent with the guidance of **Regulatory Guide 1.9** and could read similar to:

The initial reliability of each alternate ac power source has been established per Regulatory Guide 1.9 as demonstrated by twenty-five consecutive successful starts of each alternate ac power source, without loading, per Test Method C.4 above.

The staff requests that the applicant add an acceptance criterion to Section "D" of DCD Tier 2 Preoperational Test 14.2.12.1.46.

ANSWER:

In the response to RAI 959-6765, Question 09.04.01-33, submitted by MHI letter UAP-HF-12275 (Accession No.: ML12284A024), dated October 5, 2012, MHI revised the preoperational test for the AAC GTGs (DCD Subsection 14.2.12.1.46). DCD changes were made to Part A (Objectives), Part B (Prerequisites), and Part C (Test Method) of the preoperational test. However, no corresponding acceptance criterion was added to Part D (Acceptance Criteria). Therefore, MHI will revise DCD Subsection 14.2.12.1.46 Part D to include the acceptance criterion for the 25 start test of the AAC GTGs.

Impact on DCD

DCD Subsection 14.2.12.1.46 will be revised as described in the answer above and as shown in the attached DCD markup.

Impact on R-COLA

There is no impact on the R-COLA.

Impact on S-COLA

There is no impact on the S-COLA.

Impact on PRA

There is no impact on the PRA.

Impact on Technical / Topical Reports

There is no impact on the Technical / Topical Reports.

~~4.155, based on historical data of the similar type of the ac alternate power sources.~~

DCD_09.04.
01-30

C. Test Method

1. Fuel oil is transferred from the fuel oil storage tank to the fuel oil day tanks by means of the transfer pumps. Appropriate flow parameters are recorded.
2. The control logic of the alternate ac power source breaker, alternate ac power source start circuit, and support pumps and valves are verified.
3. The operability of the alternate ac power source starter is verified.
4. Twenty-five consecutive starts of each alternate ac power source, without loading, is verified.
5. The alternate ac power source is started, voltage and frequency control demonstrated, phase rotation verified, and the backup generator synchronized to offsite power and loads.
6. During the testing, fuel oil consumption is monitored with the alternate ac power source operating at the continuous load rating.
7. With a simulated LOOP signal, the proper alternate ac power source trips is verified.
8. With the alternate ac power source connected to its bus, an automatic start signal causes it to return to standby operation.
9. Verify all associated indications and alarms during test sequences.

DCD_09.04.
01-30
DCD_09.04.
01-33

D. Acceptance Criteria

1. The controls, interlocks, and operation of the alternate ac power source breakers and support systems operate as designed (see Subsection 8.3.1.1.1).
2. Each alternate ac power source completes 25 consecutive starts, without loading, without a failure.
3. Each alternate ac power source can be synchronized with offsite power.
4. Upon the receipt of automatic start signals, the alternate ac power sources operate as designed.
5. The alternate ac power source fuel oil consumption does not exceed the design requirements.
6. All associated indications and alarms operate per design.

DCD_14.03.
07-93