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TOKYO, JAPAN

December 15, 2010

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-10334

Subject: Update of Chapter 8 of US-APWR DCD

- Reference:**
- 1) Letter CP-200901597 logged as TXNB-09074 from M.L. Lucas (Luminant) to U.S. NRC, "COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4, DOCKET NUMBERS 52-034 AND 52-035, REVISION 1 TO THE COMBINED LICENSE APPLICATION," dated November 20, 2009
 - 2) Letter MHI Ref: UAP-HF-09490 from Y. Ogata (MHI) to U.S. NRC, "Submittal of US-APWR Design Control Document Revision 2 in Support of Mitsubishi Heavy Industries, Ltd.'s Application for Design Certification of the US-APWR Standard Plant Design" dated on October 27, 2009.
 - 3) NRC Request for Additional Information (RAI) No. 5116 Revision 1, RAI #182, 10/19/2010, Comanche Peak Units 3 and 4, Luminant Generation Company, LLC. Docket No. 52-034 and 52-035, SRP Section: 08.02 - Offsite Power System, Application Section: FSAR Section 8.2
 - 4) NRC Request for Additional Information (RAI) No. 5117 Revision 1, RAI #183, 10/19/2010, Comanche Peak Units 3 and 4, Luminant Generation Company, LLC. Docket No. 52-034 and 52-035, SRP Section: 08.04 - Station Blackout, Application Section: FSAR Section 8.4

During the review process of the Combined License Application for Comanche Peak Units 3 and 4 (Reference 1, "R-COLA"), which incorporates by reference the Mitsubishi Heavy Industries, Ltd. (MHI) Design Certification Application for the US-APWR Standard Plant Design (Reference 2, "DCD"), the U.S. Nuclear Regulatory Commission ("NRC") Staff has requested additional information about offsite power system and station blackout (Reference 3 and 4).

During development of the Luminant response to these RAIs for the R-COLA, MHI has determined that updates of Chapter 8 of the MHI US-APWR Design Control Document are required.

With this letter, MHI transmits to the NRC Staff the proposed DCD updates necessary to support the Luminant response to these RAIs. These updates will be incorporated in a future DCD revision.

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

D081
NRD

Sincerely,

A handwritten signature in black ink, appearing to read "Y. Ogata". The signature is written in a cursive style with a large initial "Y" and a long, sweeping tail.

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

Enclosure:

1. Update of Chapter 8 of the US-APWR DCD

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

Contact Information

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Enclosure 1

UAP-HF-10334
Docket No. 52-021

Update of Chapter 8 of US-APWR DCD

December 2010

Luminant received NRC Request for Additional Information No. 5116 Revision 0, RAI#182 and 5117 Revision 0, RAI #183, dated on 10/19/2010.

During development of the responses to the above RAI #182 and #183, MHI determined they were necessary to revise Chapter 8 of the US-APWR Design Control Document (DCD).

A mark-up draft of the DCD is attached in this document.

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- COL 8.3(10) *The COL applicant is to provide protective device coordination.*
- COL 8.3(11) *The COL applicant is to provide insulation coordination (surge and lightning).*
- COL 8.3(12) *The COL is to provide a cable monitoring program for underground and inaccessible cables within the scope of the maintenance rule (10 CFR 50.65)*

8.3.5 References

- 8.3.1-1 IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits, IEEE Std 384, 1992.
- 8.3.1-2 Criteria for Independence of Electrical Safety Systems, Regulatory Guide 1.75 Revision 3, February 2005.
- 8.3.1-3 Seismic Design Classification, Regulatory Guide 1.29 Revision 4, March 2007.
- 8.3.1-4 IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations, IEEE Std 603, 1998.
- 8.3.1-5 Criteria for Safety Systems, Regulatory Guide 1.153 Revision 1, June 1996.
- 8.3.1-6 IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations, IEEE Std 323, 2003.
- 8.3.1-7 IEEE Standard Criteria for the Protection of Class 1E Power Systems and Equipment in Nuclear Power Generating Stations, IEEE Std 741, 1997.
- 8.3.1-8 Adequacy of Station Electric Distribution System Voltage, BTP 8-6, March 2007.
- 8.3.1-9 IEEE Guide for Motor Protection, IEEE Std C37.96, 2000
- 8.3.1-10 Guide for Protective Relay Applications to Power Transformers, IEEE Std C37.91, 2000.
- 8.3.1-11 Thermal Overload Protection for Electric Motors on Motor-Operated Valves, Regulatory Guide 1.106 Revision 1, March 1977.
- 8.3.1-12 IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations, IEEE Std 344, 2004.
- 8.3.1-13 Qualification and Test Plan of Class 1E Gas Turbine Generator System, MUAP-07024-P Rev.1 (Proprietary) and MUAP-07024-NP Rev.1 (Non-Proprietary).

The AAC power system will be inspected and tested periodically based on manufactures' recommendations and Reg 1.155 to demonstrate operability and reliability. The surveillance test interval does not exceed 3 months (Quarterly). During the quarterly test the AAC is started and brought to operating conditions. Additionally, during every refueling outage, the AAC generator is tested by performing a timed start and rated load capacity test. The reliability of the AAC power system will meet or exceed 95% as determined in accordance with NSAC-108 (Reference 8.4-2) or equivalent methodology to meet the Criterion 5 of Section C.3.3.5, RG 1.155 (Reference 8.3.1-21). Testing and maintenance of the AAC is evaluated under the reliability assurance program and the maintenance rule program as described in DCD and COLA Section 17.4 and COLA 17.6.

Procedures to cope with SBO are addressed in Section 13.5 and the training is addressed in Section 13.2. These include all operator actions necessary to cope with SBO for at least the duration in accordance with Subsection 8.4.2.1.1 and to restore normal long-term core cooling/decay heat removal once ac power is restored. This meets the requirement of Regulatory Position C.3.4 of RG 1.155.

The quality assurance of AAC GTG is controlled in accordance with DCD Chapter 17 and related topical report PQD-HD-19005 Revision 2 (Reference 8.4-3). This meets the requirements of Regulatory Position C.3.5 of RG 1.155.

8.4.3 Combined License Information

No additional information is required to be provided by a COL applicant in connection with this section.

8.4.4 References

- 8.4-1 Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors, NUMARC 87-00, Revision. 1, August 1991.
- 8.4-2 Reliability of Emergency Diesel Generators at U.S Nuclear Power Plants, NSAC-108, September 1986.
- 8.4-3 Quality Assurance Program (QAP) Description For Design Certification of the US-APWR, PQD-HD-19005 Revision 3, September 2009.

8.3.3 Tests and Inspections

All active components of the electrical system are accessible for inspection during plant power generation. The electrical system components like transformers, switchgears, circuit breakers, MCCs, GTGs and their controls are tested in accordance with applicable standards and manufacturer recommendations for the Class 1E and non-Class 1E before plant startup.

The Class 1E electrical power systems are provided with four redundant trains and any one train can be taken out for maintenance and testing during normal power operation without impacting the minimum safety requirements.

- The Class 1E GTGs are periodically inspected and tested per the requirements of IEEE Std 387 (Reference 8.1-1).
- The restoration of AAC power supply within 60 minutes to one of the Class 1E buses from the AAC GTG is verified by test.
- The batteries are periodically inspected and tested per IEEE Std 450 (Reference 8.3.2-4) and IEEE Std 484 (Reference 8.3.2-3).

Underground and inaccessible cables within the scope of the maintenance rule (10 CFR 50.65) are monitored by periodical testing in a manner similar to the medium voltage cables in underground duct banks described in Subsection 8.2.1. The COL Applicant is to provide the cable monitoring program for underground and inaccessible cables with the scope of the maintenance rule.

8.3.4 Combined License Information

- COL 8.3(1) *The COL applicant is to provide transmission voltages. This includes also MT and RAT voltage ratings.*
- COL 8.3(2) *The COL applicant is to provide ground grid and lightning protection.*
- COL 8.3(3) *The COL applicant is to provide short circuit analysis for ac power system, since the system contribution is site specific.*
- COL 8.3(4) *Deleted*
- COL 8.3(5) *Deleted*
- COL 8.3(6) *Deleted*
- COL 8.3(7) *Deleted*
- COL 8.3(8) *The COL applicant is to provide short circuit analysis for dc power system.*
- COL 8.3(9) *Deleted*