MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

August 22, 2012

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

Attention: Mr. Paul Prescott

Docket No. 52-021
MHI Ref: UAP-HF-12235

Subject: **Reply to Notice of Violation No.05200021/2012-201**

Reference: 1) "NRC INSPECTION REPORT NO.05200021/2012-201 AND NOTICE OF VIOLATION" dated July 23, 2012.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") the responses to Notice of Violation No.05200021/2012-201(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 the submittals. His contact information is below.

Sincerely,

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

Enclosures:

1. MHI Action Plan to Notice of Violation (NOV) for GTG Qualification Test at ESI

CC: J. A. Ciocco
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Docket No. 52-021
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Enclosure 1

UAP-HF-12235
Docket No. 52-021

US-APWR
MHI Action Plan to Notice of Violation (NOV)
for GTG Qualification Test at ESI

August 2012

MHI Action Plan to Notice of Violation (NOV)
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General

MHI has reviewed, with ESI, the violations and causes. These are documented below to each violation. In addition, MHI will require that the NOVs and responses be read by MHI engineering and QA personnel by September 30, 2012. MHI will also incorporate appropriate discussion of this or similar issues in continuing training for such personnel.

NOV-A (NRC Identification No. 05200021/2012-201-01)

1. Content of NOV

Criterion III, "Design Control," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," states that, "Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components.

Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible organization."

MHI QAM, UES-20080022, "Change Control," Revision 5, dated October 13, 2011, states, in part, that, "changes to final designs and nonconforming items dispositioned use-as-is or repair shall be justified and subject to design control measures commensurate with those applied to the original design. When any changes to design inputs or outputs are made, the changes shall be justified and subject to design control measures commensurate with those applied to the original design. These measures shall include evaluation of effects of those changes on the overall design and on any analysis upon which the design is based. Evaluation shall be documented, even though the changes do not affect any of the design outputs."

Contrary to the above, as of June 8, 2012, MHI failed to ensure adequate evaluation of design control changes for gas turbine generators (GTG) testing activities. Specifically, MHI did not perform a design change evaluation for the GTG's compressor discharge hose replacement that failed during prototype testing and failed to ensure the design change was included in final design documentation.

2. Reason for the violation, or, if contested, the basis for disputing the violation or severity level

The tubing material connecting to the pressure gauge is specified as stainless (SUS) in attachment 4 "Liquid Fuel System Diagram" of MHI Technical Specification (4GG-UAP-20080012 Rev.5). ESI failed to include this design input requirement when developing the "Fuel oil system P&ID." Design verification of this design output at ESI did not reveal the omission and MHI also did not identify that the Fuel Oil System P&ID contained this design error. MHI did not specify in the Requirement for Purchase Order (4GG-UAP-20080011 Rev.2) that ESI shall notify MHI if a design change occurred.

3. Corrective action steps that have been taken and the result achieved, and the corrective steps that will be taken to avoid further violations

(1) ESI issued Corrective Action number 2012-18 to document, track and address this condition.

(2) ESI drawing was revised to incorporate the material change.

(3) ESI reviewed the drawing in accordance with ESI's design review procedure to insure that the change was appropriate.

(4) ESI will revise the ESI drawing in the Qualification Test report for the Emergency Gas Turbine Generator (8001517-FRT).

(5) MHI will train design personnel in the necessity for a review that includes the MHI design specification related to the supplier design outputs, in accordance with the MHI Quality Assurance Manual (UES-20080022 Rev.5).

(6) MHI generated a Change Order Proposal (COP) form as a part of the revised procedure UES-20080279 Rev.3 to be used for suppliers to request any technical or quality deviations from the requirements of the Purchase Order. In future testing, MHI will specify in the purchase specification that ESI shall use the COP form to notify design changes.

4. Date when full compliance will be achieved

Full completion will be achieved by September 30, 2012.

NOV-B (NRC Identification No. 05200021/2012-201-02)

1. Content of NOV

Criterion XI, "Test Control" of Appendix B to 10 CFR Part 50 states, in part, that, "a test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents."

MHI MUAP-07024-P, "Qualification and Test Plan of Class 1E Gas Turbine Generator System," Revision 2, dated on October 10, 2010, Section 4, "Principal Design Criteria," describes the scheduled maintenance activities as requirements for two design conditions of the GTGs.

Contrary to the above, as of June 8, 2012, MHI, which has the overall responsibility for the test program, failed to include scheduled maintenances in the test procedure as required by the two design conditions of the GTG. Specifically, MHI failed to send ESI the adequate fuel nozzle cleaning procedure prior to the start and load acceptance test, and approved the test procedure 8001517-FTP without including the scheduled maintenance.

2. Reason for the violation, or, if contested, the basis for disputing the violation or severity level

ESI did not include the cleaning requirement in the test procedure. ESI believed that this would be performed by the Kawasaki Heavy Industries (KHI) representative, the GTG supplier, as required by the KHI Instruction. MHI reviewed the test procedure without considering the scheduled maintenance activities.

3. Corrective action steps that have been taken and the result achieved, and The corrective steps that will be taken to avoid further violations

(1) ESI issued Corrective Action number 2012-15 to document, track and address this issue.

(2) All ESI engineering personnel involved with test procedure reviews have been retrained to assure that when test procedures are reviewed they address all testing and maintenance requirements. Testing procedures will continue to be reviewed in accordance with the Design Verification checklist, which includes consideration of maintenance requirements.

(3) ESI will include the fuel nozzle cleaning record in the Qualification Test report for the Emergency Gas Turbine Generator (8001517-FRT).

(4) In future testing performed by ESI, in accordance with the MHI Quality Assurance Manual (UES-20080022 Rev.5), MHI will confirm by engineering review that all the maintenance requirements to be performed during testing are contained in the Factory Test Procedure. In addition MHI QA will confirm that the maintenance requirements are performed.

4. Date when full compliance will be achieved

Full completion will be achieved by September 30, 2012.

NOV-C (NRC Identification No. 05200021/2012-201-03)

1. Content of NOV

Criterion II, "Quality Assurance Program," of Appendix B to 10 CFR Part 50, states in part, that "the program shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained."

MHI QAM, UES-20080022, "Training and Indoctrination," Revision 5, dated February 14, 2012, states in part, that, "Personnel performing or managing activities affecting quality shall receive training and indoctrination to assure suitable proficiency in assigned activities. Indoctrination shall assure knowledge in the required general criteria including applicable codes, regulations, standards, and company procedures, applicable quality assurance program elements, job responsibilities, and authority."

Section 2 of ESI's QAM, "Quality System," 5th Edition Revision 0, dated July 13, 2007, states in part, "Personnel selected for performing inspection and test activities shall have the experience or training commensurate with the scope, complexity, or special nature of the activities." ESI's QAM also states, "Provisions shall be made for the indoctrination of personnel as to the technical objectives and requirements of the applicable codes and standards and the quality assurance program elements that are to be employed. The need for a formal training program shall be determined and such training activities shall be conducted as required to qualify personnel who perform inspections and tests."

ESI's Procedure, QTP-100, "Indoctrination and Training Procedure," Revision 4, dated April 24, 2006, states, in part, that, "Training in accordance with the Training Matrix shall be scheduled and completed within a two (2) week period. Records of completion shall be transmitted back to the person responsible for maintaining the Training Matrix. Training Matrix shall be updated at completion of training. This update must include date training was completed."

Contrary to the above, as of June 8, 2012, MHI, which has the overall responsibility for training activities, failed to ensure that ESI personnel performing safety-related GTG testing activities had completed required training. Specifically, ESI failed to ensure personnel performing inspection and test activities for the safety-related GTG testing had completed required training and maintain training records in accordance with ESI's procedure QTP-100.

2. Reason for the violation, or, if contested, the basis for disputing the violation or severity level

The cause was due to inadequate oversight of the training process.

3. Corrective action steps that have been taken and the result achieved, and T he corrective steps that will be taken to avoid further violations

(1) ESI issued Corrective Action number 2012-16 to document, track and address this condition.

(2) The ESI training matrix has been reviewed with all department managers and the required training for all employees has been updated.

(3) The ESI training matrix will be monitored on a weekly basis.

(4) Required reading forms for training and indoctrinations were generated for new training requirements.

(5) In future testing performed by ESI, MHI will confirm by QA oversight that all personnel have received the required training, in accordance with the MHI Quality Assurance Manual (UES-20080022 Rev.5).

4. Date when full compliance will be achieved

Full completion has already been achieved.

NOV-D (NRC Identification No. 05200021/2012-201-04)

1. Content of NOV

Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50 states, in part, that, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected."

Criterion V, "Instructions, Procedures and Drawings," states, in part, that, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

MHI QAM, UES-20080022, Revision 5, dated February 14, 2012, "Corrective Action, Preventive Action and Lessons Learned," states, in part, that, "Conditions adverse to quality shall be identified promptly and corrected as soon as practical." The QAM also states, "These measures shall be extended to the performance of subcontractor's corrective and preventive action measures."

Section 14.1 of ESI's QAM, "Corrective Action," 5th Edition, Revision 0, dated July 13, 2007, states, in part, that, "When a significant condition adverse to quality occurs, ESI take(s) actions to eliminate the cause in order to prevent reoccurrence. Corrective actions are appropriate to the effects of the nonconformities encountered. ESI has established and maintains a documented procedure that defines the requirements for reviewing and determining the cause nonconformities, evaluating the need for action to ensure that nonconformities do not reoccur, determining, and implementing action needed, records of the results of action taken and reviewing corrective action taken."

ESI's procedure QCP-301, "Control of Nonconforming Conditions and Corrective Actions and 10 CFR 21 Reportable Conditions," Revision 22, dated November 15, 2011, states, in part, that, "Engineering shall review the nonconforming condition and determine if a 10 CFR Part 21 evaluation is required. This determination shall be completed within 7 working days of the NCR initiation date. The engineer shall document this determination by entering 'yes' or 'no' beside the '10 CFR 21 is required?' box on the NCR form."

Contrary to the above, as of June 8, 2012, MHI, which has the overall responsibility for corrective action for GTG testing activities, failed to ensure that ESI followed procedures to promptly identify and correct conditions adverse to quality. Specifically, ESI engineering did not complete reviews to determine if a 10 CFR Part 21 evaluation is required for nonconformances as required by the ESI QT-100 procedure within the 7-day period.

2. Reason for the violation, or, if contested, the basis for disputing the violation or severity level

The 7 day restriction was self imposed to assure timely consideration of determination of the need to perform a 10 CFR Part 21 evaluation, it was understood that the 60 day limit would not be, and was not, exceeded.

3. Corrective action steps that have been taken and the result achieved, and The corrective steps that will be taken to avoid further violations

(1) ESI issued Corrective Action number 2012-17 to document, track and address this condition.
(2) The ESI procedure was revised to extend the NCR determination of evaluation requirement to 21 calendar days.
(3) Indoctrination for the revised procedure has been performed.
(4) Part 21 determinations for NCRs will be monitored on a weekly basis.
(5) In future testing performed by ESI, MHI will confirm by QA oversight that the non-conformance program is implemented as required by ESI procedure, in accordance with the MHI Quality Assurance Manual (UES-20080022 Rev.5).

4. Date when full compliance will be achieved

Full completion has already been achieved.