October 26, 2010

Mr. Takashi Kuribayashi, General Manager
Quality Assurance Department
Nuclear Power Operations
IHI Corporation
1 Shin-Nakahara-Cho
Isogo-Ku, Yokohama 235-8501
Japan

SUBJECT: NRC INSPECTION REPORT NO. 99901395/2010-201 AND NOTICE OF NONCONFORMANCE, IHI, Yokohama, Japan

Dear Mr. Kuribayashi:

On September 13–17, 2010, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the IHI Corporation (IHI) facility in Yokohama, Japan. The purpose of the limited scope inspection was to assess IHI's compliance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," and selected portions of Appendix B, "Quality Assurance Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." The enclosed report presents the results of this inspection. This NRC inspection report does not constitute NRC endorsement of your overall quality assurance (QA) or 10 CFR Part 21 programs.

Based on the results of this inspection, the NRC staff determined that the implementation of your QA program failed to meet certain NRC requirements imposed on you by your customers. Specifically, the NRC inspection team determined that IHI failed to provide adequate procedural guidance for the dedication of commercial grade items and that IHI failed to review conditions adverse to quality to determine the existence of trends. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter.

Please provide a written statement or explanation within 30 days from the date of this letter in accordance with the instructions specified in the enclosed Notice of Nonconformance. We will consider extending the response time if you show good cause for us to do so.

In accordance with 10 CFR 2.390, "Hearing Requests, Petitions to Intervene, Requirements for Standing, and Contentions," of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response (if applicable), should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for

your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

Sincerely,

/RA/

Richard Rasmussen, Chief
Quality and Vendor Branch 2
Division of Construction Inspection
& Operational Programs
Office of New Reactors

Docket No. 99901395

Enclosures:
1. Notice of Nonconformance
2. Inspection Report No. 99901395/2010-201 and Attachment

your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

/RA/

Richard Rasmussen, Chief
Quality and Vendor Branch 2
Division of Construction Inspection
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Docket No. 99901395
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1. Notice of Nonconformance
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NOTICE OF NONCONFORMANCE

IHI Corporation
Yokohama, Japan

Docket Number 99901395
Inspection Report Number 2010-201

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the IHI Corporation (IHI) facility in Yokohama, Japan, on September 13–17, 2010, certain activities were not conducted in accordance with NRC requirements that were contractually imposed on IHI by NRC licensees:

A. Criterion V, "Instructions, Procedures, and Drawings," 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, 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."

Part 21 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 21), "Reporting of Defects and Noncompliance," Section 21.3 of 10 CFR Part 21 (10 CFR 21.3), *"Definitions," Dedication*, states, in part, that the dedication process must be conducted in accordance with the applicable provisions of Appendix B to 10 CFR Part 50 (Appendix B), "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."

IHI Procedure IBR A13-30003, "Control Procedure for Dedication of Commercial Grade Item," Revision G, dated September 10, 2010, provides the methods for the dedication of commercial-grade items and/or services used in nuclear safety applications.

IHI Drawing No. 022K095, "Specification of Quality Program (Commercial Grade Item)," Revision 0, dated October 21, 2009, defines the quality assurance requirements for commercial-grade items for the containment vessels for Vogtle Electric Generating Plant, Units 3 and 4.

Contrary to the above, as of September 17, 2010, IHI failed to provide adequate procedural guidance in IBR A13-30003 for the dedication of commercial-grade items. Specifically:

- IHI procedures such as IBR A13-30003 and IHI Drawing no 022K095 did not provide adequate guidance for including specific provisions or methodology for identification of the critical characteristics and their verification/acceptance methods to be performed during the conduct of the IHI vendor survey specific to the item being dedicated.

- IBR A13--30003 did not include the appropriate definitions from 10 CFR 21.3, "Definitions," applicable to the dedication of commercial-grade items. The NRC inspection team noted that the procedure did not include the correct definitions for "commercial-grade item" and "basic component" and also did not include definitions for "critical characteristics," "dedication," and "dedicating entity," as defined in 10 CFR Part 21.

- IHI procedures, such as IBR A13-30003 and IHI Drawing No. 022K095, did not provide adequate guidance for the development of sampling inspection plans consistent with known industry standards. The NRC inspection team determined that IHI's sampling plan methodology was inconsistent with the guidance described in Electric Power Research Institute (EPRI) 7218, "Guideline for Sampling in the Commercial-Grade Item Acceptance Process," dated January 1999, for the use of normal, reduced, or tightened sampling plans.

This issue is identified as Nonconformance 99901395/2010-201-01.

B. Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50 states 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. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management."

IHI is committed to American Society of Mechanical Engineers NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," Nonmandatory Appendix 16A-1, which states, in part, that conditions adverse to quality should be reviewed to determine the existence of trends. The significance of identified trends should be classified to determine whether further action is necessary.

Contrary to the above, as of September 17, 2010, IHI failed to review conditions adverse to quality to determine the existence of trends. The NRC inspection team identified 5 instances involving IHI operators failing to appropriately follow procedures that led to nonconforming conditions for US and Chinese components. These 5 instances occurred over a 12 month period.

This issue is identified as Nonconformance 99901395/2010-201-02.

Please provide a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Chief, Quality and Vendor Branch 1, Division of Construction Inspection and Operational Programs, Office of New Reactors, within 30 days of the date of the letter transmitting this Notice of Nonconformance. This reply should be clearly marked as a "Reply to a Notice of Nonconformance" and should include for each noncompliance: (1) the reason for the noncompliance or, if contested, the basis for disputing the noncompliance, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid noncompliance, and (4) the date when your corrective action will be completed. Where good cause is shown, the NRC will consider extending the response time.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC'S Agencywide Documents Access and Management System (ADAMS), which is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the

public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material be withheld, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

Dated this 26th day of October 2010.

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NEW REACTORS
DIVISION OF CONSTRUCTION INSPECTION AND OPERATIONAL PROGRAMS
VENDOR INSPECTION REPORT

Docket No.:	99901395
Report No.:	99901395/2010-201
Vendor:	IHI Corporation 1 Shin-Nakahara-Cho Isogo-Ku, Yokohama 235-8501 Japan
Vendor Contact:	Mr. Takashi Kuribayashi, General Manager Quality Assurance Department, Nuclear Power + 81-45-759-2540 E-mail: takashi_kuribayashi@ihi.co.jp
Nuclear Industry Activities:	IHI Corporation is a holder of multiple N-type American Society of Mechanical Engineers (ASME) certificates under contract for the fabrication and manufacture of key advanced boiling-water reactor (ABWR) and AP1000 components for the U.S. market.
Inspection Dates:	September 13–17, 2010
Inspectors:	Richard McIntyre — NRO/DCIP/CQVB, Team Leader Samantha Crane — NRO/DCIP/CQVB Jamie Heisserer — RII/DCI/CIB3 Timothy Steingass — NRO/DE/CIB2
Approved by:	Richard Rasmussen, Chief Quality and Vendor Branch 2 Division of Construction Inspection & Operational Programs Office of New Reactors

EXECUTIVE SUMMARY

IHI Corporation
99901395/2010-201

The purpose of this inspection was to verify that IHI Corporation (IHI) implemented an adequate quality assurance (QA) program that complied with the requirements 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." The inspection also verified that IHI implemented a program under 10 CFR Part 21, "Reporting of Defects and Noncompliance," that met the regulatory requirements of the U.S. Nuclear Regulatory Commission (NRC). The inspection was conducted at the IHI facility in Yokohama, Japan, during September 13–17, 2010.

The following regulations served as the bases for the NRC inspection:

- Appendix B to 10 CFR Part 50
- 10 CFR Part 21

During the conduct of this inspection, the NRC inspection team implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," and IP 36100, "Inspection of 10 CFR Part 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance."

The NRC has not previously performed any inspections at the IHI facility in Yokohama, Japan.

The results of this inspection are summarized below.

10 CFR Part 21 Program

IHI appropriately translated the requirements of 10 CFR Part 21 into implementing procedures and, for those activities reviewed by the NRC inspection team, implemented them as required by IHI procedures. No findings of significance were identified.

Order Entry and Fabrication

The NRC inspection team concluded that the sampled requirements set forth in the customer purchase specifications were effectively translated into fabrication specifications. No findings of significance were identified.

Control of Purchased Material, Equipment, and Services

With the exception of Notice of Nonconformance (NON) 99901395/2010-201-01 for failure to provide adequate procedural guidance for the dedication of commercial-grade items (CGI), the NRC inspection team concluded that IHI is implementing a process for the control of purchased material, equipment, and services consistent with the regulatory requirements of Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50.

Control of Special Processes

The IHI program for control of special processes is consistent with the regulatory requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50. Based on the

sample of records reviewed, the NRC inspection team concluded that qualified personnel are using qualified equipment and processes to effectively implement IHI's Quality Assurance Program Description (QAPD) and the associated fabrication and special processes procedures. No findings of significance were identified.

Test Control

The IHI program for test control is consistent with the regulatory requirements of Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50. Based on the sample of test control documents reviewed and activities observed, the NRC inspection team concluded that IHI is effectively implementing its QAPD and the associated test control procedures. No findings of significance were identified.

Control of Measuring and Test Equipment

The implementation of the IHI program for control of measuring and test equipment (M&TE) is consistent with the regulatory requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50. Based on the limited sample of calibration procedures and records reviewed and on observed field activities, the NRC inspection team concluded that IHI is effectively implementing its QAPD and the associated M&TE procedures. No findings of significance were identified.

Nonconforming Materials, Parts, or Components

The implementation of the IHI program for the control of nonconforming materials, parts, or components is consistent with the regulatory requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," of Appendix B to 10 CFR Part 50. Based on the limited sample of NONs, disposition notices (DNs), vendor nonconformance notices, interviews with IHI staff, and a tour of the shop floor, the NRC inspection team concluded that IHI is effectively implementing its QAPD, ASME Quality Assurance Manual (QAM), and implementing procedures. No findings of significance were identified.

Corrective Action

With the exception of NON 99901395/2010-201-02 for failure to implement a trending program, the NRC inspection team concluded that, based on the limited sample of corrective action control sheets (CACSs) reviewed, the implementation of the IHI program for corrective actions was consistent with the regulatory requirements of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50.

REPORT DETAILS

1. 10 CFR Part 21 Program

a. Inspection Scope

The NRC inspection team reviewed IHI's policies and implementing procedures that govern its 10 CFR Part 21 program to verify compliance with the requirements of 10 CFR Part 21. In addition, the NRC inspection team observed the 10 CFR Part 21 postings and reviewed a sample of IHI's purchase orders (POs) and 10 CFR Part 21 evaluations for compliance with the requirements of 10 CFR 21.6, "Posting Requirements," 10 CFR 21.31, "Procurement Documents," and 10 CFR 21.21, "Notification of Failure to Comply or Existence of a Defect and its Evaluation," respectively. To verify an adequate link to the 10 CFR Part 21 process, the NRC inspection team also reviewed IHI's procedures that govern corrective action, the control and correction of nonconforming items, and customer complaints. Specifically, the NRC inspection team reviewed the following IHI procedures and documentation:

- IBR A13-01001, "Quality Assurance Manual for Nuclear Power Items," Revision 45, dated August 6, 2010
- IBR A13-30000, "Quality Assurance Program Description (10CFR50 Appendix B)," Revision 8, dated August 27, 2010
- IBR A13-30001, "Reporting Procedure for Defect and Noncompliance Under 10CFR21," Revision H, dated September 6, 2010
- IBR A13-17001-8, "Check Sheet for Evaluation Conference of 10CFR21," Revision 4, dated September 6, 2010
- IBR A13-17001, "Control of Nonconforming Items," Revision V, dated September 6, 2010
- CACS 10-014
- CACS 10-018
- CACS 10-007
- CACS 10-015
- CACS 10-219

b. Observations and Findings

b.1 Postings

The NRC inspection team observed that IHI had posted notices in three locations within the facility, two in the office area and one on the shop floor. Each location included a

copy of Section 206 of the Energy Reorganization Act of 1974, a current copy of 10 CFR Part 21, and a current revision of IBR A13-30001. Section 206 of the Energy Reorganization Act and 10 CFR Part 21 were posted in English, and IBR A13-30001 contained both English and Japanese procedural guidance.

b.2 10 CFR Part 21 Procedure

The nonconformance and corrective action procedure, IBR A13-17001, describes the discovery process. IBR A13017001 directs the design group to determine whether a nonconforming condition or condition adverse to quality (CAQ) is related to a basic component or a product that has already been shipped. The results of this determination are documented on Form A13-17001-8-R4, "Check Sheet for Evaluation of Conference of 10CFR21." If the nonconformance or CAQ is related to a basic component or a product that has already been shipped, the design group recommends that a 10 CFR Part 21 review board be held in accordance with Procedure IBR A13-30001.

Procedure IBR A13-30001 describes the evaluation and reporting process and accurately reflects the 10 CFR 21.21(d) timeframes for reporting identified defects or failures to comply that could create a substantial safety hazard. In addition, IBR A13-30001 accurately describes the contents of written notifications in accordance with 10 CFR 21.21(d)(4) and requirements for record retention in accordance with 10 CFR 21.51, "Maintenance and Inspection of Records."

Although IBR A13-17001 and IBR A13-30001 contain the information required by regulation, IHI decided during the course of the inspection to issue CACS 10-219 to relocate all of the necessary parts of the 10 CFR Part 21 process to IBR A13-30001 and to clarify and streamline the IHI 10 CFR Part 21 program.

b.3 10 CFR Part 21 Implementation

At the time of the inspection, IHI had not performed any 10 CFR Part 21 evaluations. The NRC inspection team reviewed a sample of four CACSs and corresponding 10 CFR Part 21 checksheets to determine if an evaluation should have been performed. For the sample reviewed, the NRC inspection team did not identify any instances in which IHI should have performed an evaluation.

b.4 Purchase Orders

The NRC inspection team reviewed a sample of IHI's POs to verify that IHI had implemented a program consistent with the requirements in 10 CFR 21.31 for specifying the applicability of 10 CFR Part 21 in its POs for basic components. The NRC inspection team verified that IHI imposed the requirements of 10 CFR Part 21 on its qualified suppliers having programs meeting the requirements of Appendix B.

c. Conclusions

The NRC inspection team concluded that IHI appropriately translated the requirements of 10 CFR Part 21 into implementing procedures and, for those activities reviewed by the team, implemented them as required by its procedures to support quality-related activities and component procurement. No findings of significance were identified.

2. Order Entry and Fabrication

a. Inspection Scope

The NRC inspection team evaluated a sample of IHI's job packages, including the design specifications for the ABWR reactor pressure vessel and the Westinghouse AP1000 containment vessel. The NRC inspection team also reviewed the IHI fabrication specifications, process checklists (PCLs), welding procedure specifications (WPS), procedure qualification records (PQRs), and certified material test reports (CMTRs) for these components.

The NRC inspection team reviewed the following procedures, documents, and records for this inspection area:

- APP-MV50-ZO-003, "Westinghouse Personnel Airlock Design Specification," Revision 1
- 5501633/016H008, South Texas Project (STP) #3 reactor pressure vessel (RPV) purchase specification
- CMTR IN-1826, dated October 23, 2009
- Specification/Drawing Nos. 224B015, and 026R116 for SPT #3 RPV shell course 2, weld joint W-1222
- Report of the absorbed moisture test for electrode covers (BL-96), issued May 1999
- Specification/Drawing Nos. associated with PCL sequence 380 for STP #3 RPV:
  - 016R025—General Weld Procedure
  - 016R062—Fitup Procedure
  - 016R111—Weld Procedure Specifications
  - 112B002—Assembly Procedure
  - 016R142—Welder Qualifications Shielded Metal Arc Weld (SMAW)
  - 016R144—Welder Qualifications GMAW
  - 016R145—Welder Qualifications Submerged Arc Welding (SAW)
  - 016R131—List of Joints and Apllicable WPS
- STP #3 RPV CMTR 5889-1, SA 533 Gr B Cl1 plate
- Performance Qualification Record TT-1802G
- Drawing No. 020K403, "Personnel Airlock Design Specification," Revision 1, dated August 3, 2009
- Drawing No. 020K401, "AP-1000 Containment Vessel Design Specification," Revision 0, dated January 28, 2009

- Weld Procedure Specification TT-1804G, Revision 0, dated July 13, 2009
- Drawing 026R016, "Weld Map and Required NDE for Upper and Lower Personnel Airlock," Revision 2, dated August 10, 2010
- Drawing 224B014, "Detailed Drawing of Upper and Lower Personnel Airlocks Outer Cylinder Assembly," Revision 1, dated July 8, 2010
- Drawing 026H601, "Purchase Specification for Plates SA-516 Gr 70," Revision 3, dated February 5, 2010
- Drawing 026H656, "Purchase Specification of Welding Material SFA-5.9 ER308L (Weld TIG 308L)," Revision 2, dated March 18, 2010
- Drawing 021K211, "Fabrication Sequence Lower and Upper Personnel Airlocks Outside Cylinder," Revision 1, dated September 2, 2010
- Drawing U3-RPV-M-SPEC-ASME-0001, "The STP 3 and 4 RPV Design Specification," Revision G
- 7A10-0301-0021, Project Requirement Document, Materials and Process Controls, revision 1, dated June 30, 2009
- 016H104, Purchase Specification Welding Material SFA5.23 F9P6-EG-G for Other Than Core Beltline Region, revision 3, dated April 13, 2009
- RS-5133580 revision 0, Vendor Generated Documents Checklist, dated July 7, 2009 (Toshiba Job number B03974, STP-3 Reactor Pressure Vessel)

b. Observations and Findings

The NRC inspection team verified that the technical specifications required by the STP Unit 3 RPV procurement specification were translated into the IHI fabrication documents. The NRC inspection team further verified that those requirements met the ASME requirements, as included in the NRC ABWR certified design, Revision 0. The NRC inspection team reviewed the ABWR procurement specification and design specification as they pertained to the STP Unit 3 RPV longitudinal weld for shell course 2. The NRC inspection team reviewed the Toshiba design specification, 7A10-0301-0021, and verified the design requirements for the weld filler metal. Specifically, the design requires that the filler metal meet ASME Boiler and Pressure Vessel Code (ASME Code) Section II, SFA 5.23. The NRC inspection team then verified that the IHI purchase specification, 016H104, contained the requirements of the design. For the specific classification of the electrode detailed in the purchase specification (EG), the NRC inspection team verified that the design organization approved the specified chemical and mechanical properties. Toshiba approved the IHI purchase specification in document RS-5133580. The NRC inspection team verified that the applicable acceptance criteria for chemical and mechanical properties required in the purchase specification and the applicable code requirements were included in

CMTR RINJQ-222-4-0, dated February 24, 2010. The NRC inspection team also verified that the variables for the weld procedure, which were defined in the purchase specification, were also included in the WPS and were consistent with the welding activities that were observed. Through this review, the NRC inspection team verified that the technical requirements of the procurement specification and the ASME Code were effectively translated into fabrication specifications.

The NRC inspection team verified that the technical specifications required by the Westinghouse containment vessel procurement specification and the referenced version of the ASME Code were translated into the IHI fabrication documents. The NRC inspection team reviewed the Westinghouse procurement specification and design specifications as they pertained to the Vogtle Unit 3 personnel airlock. The NRC inspection team reviewed the design drawings, fabrication and assembly drawings, and the PCL for weld WE 23-VE#-NIB on the outer surface of the personnel airlock. In addition, the NRC inspection team reviewed the purchase specifications for the plates and welding electrodes, the weld procedure, the weld map, the required nondestructive examination (NDE), and the fabrication sequence. By reviewing the documents listed above, the NRC inspection team concluded that IHI appropriately translated the design requirements into fabrication specifications.

c. Conclusions

The NRC inspection team concluded that the sampled requirements set forth in the customer purchase specifications were effectively translated into fabrication specifications.

3. Control and Audits of Purchased Material, Equipment, and Services

a. Inspection Scope

The NRC inspection team reviewed the implementation of IHI's process for control and audits of purchased material, equipment, and services. Specifically, the NRC inspection team reviewed the policies and procedures governing the implementation of IHI's processes to verify compliance with Criterion VII of Appendix B to 10 CFR Part 50. The NRC inspection team also reviewed the approved vendors list (AVL) and a sample of subsupplier audits and commercial surveys performed by IHI for safety-related and commercial-grade suppliers.

The NRC inspection team reviewed the following documents for this inspection area:

- IBR A13-30000, "Quality Assurance Program Description," Revision 8, dated September 13, 2010

- IBR A13-01001, "Quality Assurance Manual for Nuclear Power Items (ASME Code Section III, Division 1 and Division 2)," Revision 45, dated August 6, 2010

- IBR A13-09001, "ASME B&PV Code Section III—Purchasing Control," Revision AA, dated September 3, 2010

- IBR M13-09004, “Control of Purchased Items and Services,” Revision 0, dated June 25, 2010
- IBR A13-30003, “Control Procedure for Dedication of Commercial Grade Items,” Revision G, dated September 10, 2010
- IHI “ASME Approved Vendors List,” 4th edition, Revision 22, dated July 30, 2010
- IHI Drawing No. 022K095, “Specification of Quality Program (CGI),” Revision 0, dated October 21, 2009
- IHI Drawing No. 026H671, “Purchase Specification for EPDM Gasket for CB&I,” Revision 2, dated June 11, 2010
- JFE Steel Corporation (JFE) Document No. WKQSP-01, “Quality Systems Manual for Manufacture of Steel Plates and Forgings for ASME Section III Nuclear Power Plant Components,” Revision 50
- IHI Drawing No. 026H601, “Purchase Specification for Plates—SA-516 Grade 70,” Revision 3, dated February 5, 2010, for Vogtle Units 3 and 4
- IHI Drawing No. 026H601, “Purchase Specification for Plates—SA-516 Grade 70,” Revision 5, dated October 14, 2009, for AP1000 China Sanmen airlocks and equipment hatches
- IHI Drawing No. 021K672, “CGI Dedication Procedure for EDPM Gasket (Nichias Co.),” Revision 0, dated April 16, 2010
- IHI Drawing No. 021K672, “CGI Dedication Procedure for Bishilite No. 1,” Revision 0, dated September 7, 2010

b. Observations and Findings

IHI has two QA manuals that govern the manufacture of basic components for US nuclear applications. The first manual is an ASME QA manual that is specific to ASME code Section III items (ASME QAM). The ASME QAM incorporates the quality requirements of Subsection NCA of the ASME Code and ASME/NQA-1, as referenced in Subsection NCA. The second manual is a quality assurance program description (QAPD) applicable to all basic components manufactured under IHI’s 10 CFR 50 Appendix B QA Program. The QAPD incorporates by reference the applicable portions of the ASME QAM and specifies additional requirements and restrictions necessary to meet the 18 criteria of Appendix B to 10 CFR Part 50. For example, the ASME QAM includes guidance for procurement planning, vendor evaluation and selection, the procurement process, vendor audit performance, and audit reporting. Section 4 of the QAPD, Procurement Document Control, includes requirements related to reporting requirements of 10 CFR Part 21 and provisions to allow the performance of dedication of commercial grade items to IHI procedural requirements.

The NRC inspection team reviewed the procedures that support procurement control, including IBR A13-09001 and IBR M13-09004. IBR A13-09001 describes the approval

and maintenance of vendors who supply materials, services, components, and items to IHI. This includes approval of ASME Code Section III vendors; 10 CFR Part 50, Appendix B, safety-related vendors; and also vendors who supply CGI.

IBR M13-09004 describes the process for the certification and registration of vendors who furnish the following items and services that IHI uses for the manufacture of materials and items for nuclear facilities: materials (including welding material), appurtenances and parts for safety-related items, and safety-related services. IBR M13-09004 included the qualification basis for vendors of base materials, ASME Code Section III welding materials, and service subcontractors (i.e., calibration, machining inspection, and inspection services).

b.1 Maintenance of the Approved Vendors List

The NRC inspection team reviewed the IHI ASME AVL that is required by QAM Section 9.3 and IBR A13-09001. QAM Section 9.3 described the process for maintaining the AVL and states that the general manager of the QA department is responsible for the performance of the triennial audits and surveys and for maintaining all aspects of the vendor qualification program.

The NRC inspection team noted that, while the ASME QAM includes provisions to allow ASME N-type and quality systems certificate (QSC) certificate holders to be placed on the IHI AVL based on their holding current ASME certificates, the Appendix B QAPD states that, when procuring material and appurtenances to be used in safety-related items, IHI shall execute quality survey for qualification and approval even for the vendor who has ASME certification. This exclusion does not allow use of the ASME QAM provision for safety-related Appendix B vendors.

IBR A13-09001 provided the specific procedural requirements for development and maintenance of the IHI AVL. IBR A13-09001 provided guidance related to vendor qualification, performance of vendor audits/surveys for ASME Code Section III, NCA-3880; ASME Code Section III, NCA-4100; Appendix B to 10 CFR Part 50, and CGI.

b.2 Review of Vendor Survey and Audit Reports

The NRC inspection team chose a sample of vendors qualified by IHI for supply of safety-related and CGI. The NRC inspection team reviewed a sample of audits and surveys performed by IHI for the supply of safety-related steel plate, commercial gasket material, commercial weld rod, and commercial calibration services accredited by the Japanese accrediting body, International Accreditation Japan (IAJapan).

The review included the following audits and surveys:

- JFE for supply of safety-related ASME Code SA-516 grade 70, hot-rolled steel plate for Vogtle Unit 3

- Nichias Corporation Industrial Products Department for supply of ethylene propylene diene monomer (EPDM) rubber gaskets for AP1000 Vogtle Unit 3 and 4 equipment hatches

- Mitsubishi Materials Corporation for supply of Bishilite No. 1 welding rod for Vogtle Unit 3

- Japan Electric Meters Inspection Corporation (JEMIC) for inspection and calibration service for M&TE

The NRC inspection team reviewed the audit plan, audit report, and audit checklist for JFE. Because JFE does not hold an ASME QSC, the NRC inspection team reviewed the "JFE Quality Systems Manual for Manufacture of Steel Plates and Forgings for Nuclear Power Plant Components" (WKQSP-01) to determine the level of detail that the JFE QA program included in its scope of supply. During its vendor audit, IHI evaluated JFE's ability to meet the requirements of ASME Code, Section III, NCA-3800 and NCA-4000. The audit report checklist included the 18 QA criteria in Appendix B to 10 CFR Part 50 and identified specific questions related to ASME Code, Section III, NCA-3800, and ASME NQA-1 requirements.

The NRC inspection team reviewed the survey plans, survey reports, and CGI checklist for Nichias Corporation Industrial Products Department for the supply of commercial EPDM rubber gaskets for the AP1000 Vogtle Unit 3 and 4 equipment hatches and for Mitsubishi Materials Corporation for the supply of Bishilite No. 1 welding rod for Vogtle Unit 3. In addition, the NRC inspection team reviewed IHI Drawing No. 021K672, "CGI Dedication Procedure for EDPM Gasket (Nichias Co.)," and interviewed the individual who conducted the surveys.

Both Nichias Corporation Industrial Products Department and Mitsubishi Materials Corporation are suppliers that are implementing QA Programs under International Organization for Standardization (ISO)-9001, "Quality Management Systems—Requirements." For both of these suppliers, the IHI surveys were programmatic audits of the supplier's quality controls without specific requirements for verification or acceptance specific to the critical characteristics of the item being dedicated. In both cases, material composition or chemical composition was listed as a critical characteristic and the NRC inspection team determined that the survey did not adequately verify that the supplier was implementing an effective process for traceability control. Specifically, there was no independent evaluation of the critical characteristics to support IHI's conclusion that the testing performed was adequate to verify the critical characteristics. Finally, neither of the two IHI quality program manuals, Procedure IBR A13-09001, nor IHI Drawing No. 022K095 contained adequate guidance, specific to the item being dedicated, for identification of the critical characteristics or for verification and acceptance methods to be performed during the conduct of an IHI vendor survey. This issue has been identified as one example of Nonconformance 99901395/2010-201-01.

The NRC inspection team reviewed the JEMIC vendor audit report, RS-86-54-101, that was issued for an audit conducted at the JEMIC main office. JEMIC supplies calibration services related to electricity measurement, photometry, and thermometry. JEMIC is a standards organization that only provides measurement services. IHI reviews the report data provided by JEMIC and determines the acceptability or the need for calibration. Items requiring calibration are sent to other facilities, such as the original equipment manufacturer, and then returned to JEMIC for verification.

The audit report contained a checklist with 14 quality elements. The inspector reviewed the checklist and, with the assistance of an interpreter, interviewed the auditor. The audit checklist contained appropriate objective evidence to document the completion of the audit. The inspector considered the 14 quality elements to be appropriate for the services provided.

b.3 Review of the Process for Dedication of Commercial-Grade Items

The NRC inspection team reviewed the IHI CGI dedication process to determine if it was effective for the dedication of CGIs, included the appropriate definitions consistent with 10 CFR Part 21, and contained guidance specific to dedication activities, consistent with NRC and industry requirements. The NRC inspection team reviewed IHI Drawing No. 022K095, which contains the QA requirements for CGI used for the Vogtle Unit 3 and 4 containment vessel, Procedure IBR A13-30003, and Section C of the IHI QAPD for terms and definitions.

Procedure IBR A13-30003 specified controls for dedication of CGIs based on Electric Power Research Institute (EPRI) NP-5652, "Guideline for the Utilization of Commercial Grade Items in Nuclear Safety-Related Applications," dated June 1988. The NRC inspection team identified that IBR A13-30003 contained definitions of "critical characteristics" and "dedication" that are not consistent with 10 CFR Part 21 definitions. IBR A13-30003 also includes a statement that these two definitions are in addition to definitions given in Section C of the IHI QAPD.

The NRC inspection also team identified that Section C of the IHI QAPD contains definitions for the terms "basic components" and "commercial-grade item" that are not consistent with the definitions included in 10 CFR Part 21. In addition, this section does not include the definitions for "critical characteristics," "dedicating entity," and "dedication."

The NRC inspection team concluded that the combinations of definitions included in IBR A13-30003 and the IHI QAPD are not consistent with the definitions in 10 CFR Part 21. This issue has been identified as an example of Nonconformance 99901395/2010-201-01.

b.4 Review of CGI Dedication Activities for the Vogtle Unit 3 and 4 Containment Vessel

Because IHI was not performing CGI dedication for the STP Unit 3 and 4 contract, the NRC inspection team focused its inspection on implementation of the CGI dedication program for Vogtle Units 3 and 4. The NRC inspection team reviewed two procedures related to commercial-grade dedication for the Vogtle Unit 3 and 4 contract: IHI Drawing No. 021K672, "CGI Dedication Procedure for EDPM Gasket (Nichias Co.)," and IHI Drawing No. 021K672, "CGI Dedication Procedure for Bishilite No. 1." In addition, the NRC inspection team reviewed two CGI survey reports for the EDPM gaskets and the Bishilite weld material.

The NRC inspection team concluded that the CGI dedication procedures were not specific enough when identifying the critical characteristics and their verification methods. For example, the CGI dedication procedure for the cast hard facing weld rod identified dimensions and chemical composition for two of the four critical characteristics. However, the verification method for dimensions only included the dimensional

inspection of a sample of one rod per 5 kg lot. In addition, the chemical composition was accepted using the material test report based only on a record review without any sample testing of received items.

The NRC inspection team interviewed responsible IHI personnel and learned that, for the majority of their CGI dedication procedures, IHI used sampling for the verification of certain critical characteristics, such as material or chemical composition. The NRC inspection team reviewed the procedural guidance related to the use of sampling plans for dedicated items and noted that IBR A13-30003 did contain limited guidance for heat/lot formation and sampling plan methodology; however, the sampling criteria did not include qualitative factors to ensure adequate selection and implementation of sampling plans. The NRC inspection team determined that IHI's sampling plan methodology was inconsistent with industry guidance described in EPRI 7218, "Guideline for Sampling in the Commercial-Grade Item Acceptance Process," dated January 1999, for the use of normal, reduced, or tightened sampling plans. This issue has been identified as an example of Nonconformance 99901395/2010-201-01.

c. Conclusions

With the exception of Nonconformance 99901395/2010-201-01 for failure to provide adequate procedural guidance for the dedication of CGI, the NRC inspection team concluded that IHI is implementing a process for the control of purchased material, equipment, and services consistent with the regulatory requirements of Criterion VII of Appendix B to 10 CFR Part 50.

4. Control of Special Processes

a. Inspection Scope

The NRC inspection team reviewed IHI's implementation of its program for control of special processes, including welding, heat treatment, NDE, and bending and forming to verify compliance with Criterion IX of Appendix B to 10 CFR Part 50. For welding, the NRC inspection team reviewed WPS, PQRs, welder performance qualifications (WPQs), issue and control of weld electrodes, and observed welding activities. For heat treatment, the NRC inspection team reviewed heat treatment procedures, reviewed calibration labels and documents, observed data displays and records for heat treatment activities, and reviewed personnel qualifications. For NDE, the NRC inspection team reviewed magnetic particle (MT), liquid penetrant (PT), ultrasonic testing (UT), and radiographic testing (RT) procedures, observed the conduct of PT, and reviewed NDE examiner qualifications.

The NRC inspection team reviewed the following documents for this inspection area:

- IBR A13-30000, "Quality Assurance Program Description," Revision 8, dated September 13, 2010
- IBR A13-01001, "Quality Assurance Manual for Nuclear Power Items (ASME Code Section III Division 1 and Division 2)," Revision 45, dated August 6, 2010
- 026R202, "Radiographic Examination Procedure," Revision 3, dated July 20, 2010, Southern Company Vogtle Units 3 and 4 (Job No. 5901003)

- 026R201, “General Inspection Procedure,” Revision 1, dated September 24, 2009, Southern Company Vogtle Units 3 and 4 (Job No. 5901003)

- 026R203, “Ultrasonic Examination Procedure,” Revision 2, dated December 14, 2009, Southern Company Vogtle Units 3 and 4 (Job No. 5901003)

- 026R204, “Liquid Penetrant Examination Procedure,” Revision 4, dated August 25, 2010, Southern Company Vogtle Units 3 and 4 (Job No. 5901003)

- 026R206, “Visual Examination Procedure,” Revision 1, dated October 1, 2009, Southern Company Vogtle Units 3 and 4 (Job No. 5901003)

- 026R205, “Magnetic Particle Examination Procedure,” Revision 3, dated December 14, 2009, Southern Company Vogtle Units 3 and 4 (Job No. 5901003)

- 026R208, “NDE Personnel Qualification,” Revision 1, dated September 24, 2009, Southern Company Vogtle Units 3 and 4 (Job No. 5901003)

- 016R003, “Inspection Procedure,” Revision 3, dated May 26, 2010, STP Nuclear Operating Company (Job No. 5501633)

- 016R004, “Liquid Penetrant Examination Procedure,” Revision 4, dated August 3, 2010, STP Nuclear Operating Company (Job No. 5501633)

- 016R005, “Magnetic Particle Examination Procedure,” Revision 5, dated August 24, 2010, STP Nuclear Operating Company (Job No. 5501633)

- 016R018, “Radiographic Examination Procedure,” Revision 1, dated July 1, 2010, STP Nuclear Operating Company (Job No. 5501633)

- A13-10001, “Control Procedure for Subsidiary Materials, NDE Materials and Consumables,” Revision 2, dated August 24, 2010

- 016R019, “Ultrasonic Examination Procedure for Plate and Under Attachments,” Revision 1, dated January 6, 2010, STP Nuclear Operating Company (Job No. 5501633)

- Qualification records for four NDE examiners (I-1009, I-1020, N-008, and N-009)
- M13-11006, “Qualification Procedure of Heat Treatment Operator,” Revision I, dated July 15, 2010

- Qualification records for six heat treatment operators (HTW-H20-02, HTW-H20-03, HTW-H20-04, HTW-H20-05, HTW-H21-01, HTW-H22-01, and HTW-H22-02)

- 016R009, “Heat Treatment Procedure,” Revision 1, dated November 30, 2009, STP Nuclear Operating Company (Job No. 5501633)

- 112R003, “Post Weld Heat Treatment Procedure Sub #112,” Revision 0, dated November 20, 2009
- 113R003, “Post Weld Heat Treatment Procedure Sub #113,” Revision 2, dated August 2, 2010
- 016R001, “Procedure for Forming and Bending,” Revision 2, dated August 23, 2010, STP Nuclear Operating Company (Job No. 5501633)
- 026R003, “Forming and Bending Procedure,” Revision 1, dated August 26, 2009
- Test record: MT-633-512-2, dated June 29, 2010, for part 112-A01-013
- Test record: UT-633-512-2, dated June 29, 2010, for part 112-A01-013
- Test record: MT-633-512-1, dated June 29, 2010, for part 112-A01-012
- Test record: UT-633-512-1, dated June 28, 2010, for part 112-A01-012
- Test record: PT-633-507C-2, dated April 5, 2010, for part 112-A01-013
- Test record: PT-633-507C-1, dated March 19, 2010, for part 112-A01-012
- Test record: UT-633-372-2, dated May 24, 2010, for part 112-A01-015
- Test record: UT-633-372-1, dated May 21, 2010, for part 112-A01-014
- Test record: MT-633-360E-2, dated February 13, 2010, for part 112-A01-015
- Test record: MT-633-360E-1, dated February 14, 2010, for part 112-A01-014
- Test record: PT-633-367C-2, dated February 23, 2010, for part 112-A01-015
- Test record: PT-633-367C-1, dated February 22, 2010, for part 112-A01-014
- CMTR IN-1826, dated October 23, 2009, for BL-96 designated SMAW electrodes
- Specification/Drawing Nos.: 224B015, and 026R116 for SPT #3 RPV shell course 2, weld joint W-1222
- “Report of the Absorbed Moisture Test for Electrode Covers (BL-96),” issued May 1999
- Westinghouse design specification, APP-MV50-ZO-003, “Personnel Airlock Design Specification,” Revision 1
- Specification/Drawing Nos. associated with PCL sequence 380 for STP # RPV:
  - 016R025—General Weld Procedure

- 016R062—Fitup Procedure
- 016R111—Weld Procedure Specifications
- 112B002—Assembly Procedure
- 016R142—Welder Qualifications SMAW
- 016R144—Welder Qualifications GMAW
- 016R145—Welder Qualifications SAW
- 016R131—List of Joints and Applicable WPS

- STP #3 RPV purchase specification 5501633/016H008
- STP #3 RPV CMTR 5889-1, SA 533 Gr B Cl1 plate
- Weld Procedure Specification TT-1804G for ER308L finish pass
- Performance Qualification Record TT-1802G
- Drawing No. 020K403, "Personnel Airlock Design Specification," Revision 1, dated August 3, 2009
- Drawing No. 020K401, "AP-1000 Containment Vessel Design Specification," Revision 0, dated January 28, 2009
- Weld Procedure Specification TT-1804G, Revision 0, dated July 13, 2009
- Drawing No. 026R016, "Weld Map & Required NDE for Upper and Lower Personnel Airlock," Revision 2, dated August 10, 2010
- Drawing No. 224B014, "Detailed Drawing of Upper and Lower Personnel Airlocks Outer Cylinder Assembly," Revision 1, dated July 8, 2010

b. Observations and Findings

The NRC inspection team reviewed Section 9 of the IHI QAPD. The QAPD references Section 11 of the ASME QAM for a description of how IHI controls special processes. The NRC inspection team verified that Section 11 of the QAM was consistent with the requirements of Criterion IX of Appendix B to 10 CFR Part 50.

b.1 Process Control Documents

The NRC inspection team confirmed that the IHI manufacturing process used process control checklists (PCLs) to control shop production activities. The PCLs incorporated witness and hold points for the customer, authorized nuclear inspector, and IHI quality control inspectors and identified the applicable drawings, material specifications, work instructions, and procedures applicable to the manufacturing process being performed.

The NRC inspection team found that the PCLs assured that the fabrication activities were accomplished in accordance with specified requirements and conducted in the correct sequence.

b.2 Heat Treatment

The NRC inspection team reviewed the heat treatment procedures for fabrication of the STP RPV, which included provisions for preheat, interpass temperature, and postweld heat treatment (PWHT). The NRC inspection team verified that the procedures were consistent with the requirements of ASME Code, Section III, NB-4600, 1989. The PWHT procedures reviewed covered the following components of the STP RPV: shell courses 1–4, the bottom head ring, and the bottom head dome. The procedures included requirements for PWHT after the completion of various fabrication stages including, but not limited to, longitudinal welds, attachment of nozzles, cladding, and the joint between the bottom head ring and the dome. The NRC inspection team verified that the parameters specified were consistent with the ABWR design certification document.

The NRC inspection team reviewed heat treating records for one of the plates for shell course 2 (plate number DH110A, heat number 2-2607) and verified that the heat treatment was conducted in accordance with Procedure 016R009. The NRC inspection team also reviewed Furnace Chart SRB-003 and verified that the thermal record was consistent with the procedure.

The NRC inspection team reviewed the procedure for qualification of heat treatment personnel and verified that the qualification records for a sample of six heat treatment operators were consistent with the procedure.

b.3 Nondestructive Examination

The NRC inspection team reviewed various NDE procedures, including UT, PT, MT, and RT, for IHI's U.S. projects, including the ABWR RPV for STP Units 3 and 4, and the AP1000 containments for Vogtle Units 3 and 4 and VC Summer Unit 2. In this review, the NRC inspection team verified that the procedures referenced the appropriate codes and standards, including the appropriate ASME Code Section III and Section V code years for the ABWR (1989) and the AP1000 (2001, with the 2002 addenda). For each of the procedures, the NRC inspection team verified that IHI established the appropriate acceptance criteria and essential variables from ASME Code Section V. The NRC inspection team reviewed a sample of 12 test records of MT, UT, and PT conducted on the plates for shell courses 1 and 2 of the STP RPV and verified conformance with the procedures and the applicable code requirements.

The NRC inspection team reviewed the IHI written practice in Procedure 026R208 for qualification of NDE personnel. The NRC inspection team verified that the requirements of certifying Level II and Level III NDE examiners were consistent with the requirements of American Society for Nondestructive Testing SNT-TC-1A, "Non-Destructive Testing." The NRC inspection team verified that the training, experience, and qualification of four NDE personnel with certifications as MT Level II, PT Level II, MT Level III, UT Level III, PT Level III, and VT Level III were consistent with the requirements of the written practice.

The NRC inspection team observed an IHI NDE examiner perform a PT on portions of the personnel airlock bulkhead for the Vogtle Unit 3 AP1000 containment. The NRC inspection team noted that the revision of the procedure in the field was the latest

approved version and verified that the test was performed in accordance with the procedure within the appropriate time parameters. Additionally, the NRC inspection team verified that the penetrant, developer, and remover types used in the exam were among those allowed by the procedure. The NRC inspection team confirmed that the NDE examiner was qualified in accordance with the IHI written practice, and that his certification was current.

b.4 Welding

The NRC inspection team reviewed the IHI QAPD and ASME QAM, WPS, PQRs, welder qualification test records, the maintenance of welder qualifications, and the handling and storage of welding electrodes for IHI activities related to the ABWR RPV for STP Units 3 and 4 and the AP1000 containment vessels for Vogtle Units 3 and 4 and VC Summer Unit 2. In addition, the NRC inspection team observed SAW on the STP Unit 3 RPV longitudinal weld for shell course 2, and tungsten inert gas (TIG) welding on the Vogtle equipment hatch bulkhead. Lastly, the NRC inspection team reviewed PCLs and WPS to verify that they incorporated the appropriate technical requirements specified in the procurement documents and that they met the requirements of the ASME Code.

The staff witnessed SAW on the STP #3 RPV longitudinal weld for shell course 2, weld joint W-1222. The NRC inspection team noted that the weld parameters, voltage, travel speed, and amperage were within the parameters of the specified weld procedure. The staff also reviewed the PCL for the associated weld, including fabrication assembly drawings, design drawings, CMTR for weld rod and flux, procurement documents for the plate, and the ABWR design specification. The staff observed that the selection and welding of the plate for the RPV #3 longitudinal weld W-1222 was in accordance with the ABWR design specification.

The NRC inspection team witnessed TIG welding for weld WE-23-VB2-N1B, which is a weld on the outer surface of the personnel airlock. The weld was intended as a stainless steel buildup on the outer surface of the structural plate material to facilitate future welding of a stainless steel pressure sensing line. The NRC inspection team noted that the weld parameters, voltage, and amperage were within the parameters of the specified weld procedure. The NRC inspection team reviewed the design specification, PCL for the associated weld, the associated drawings and specifications, and ASME Code Section III requirements and verified that the appropriate technical requirements were effectively implemented. In addition, the NRC inspection team verified that the welder was qualified to perform the welding activity.

The staff reviewed the qualification records of two welders who performed SAW on the STP #3 RPV longitudinal weld for shell course 2 to determine if they were currently qualified to weld using a semiautomated SAW process. In addition, the staff reviewed the WPQs for the subject welders and found that the welders successfully completed the weld qualification with acceptable side bends. The staff observed that the welder proficiency meets the requirements of ASME Code Section IX and the IHI implementing procedures.

The STP Unit 3 and 4 RPV design specification states that electrodes and fluxes for welding of low-alloy steel shall be processed and controlled so that the moisture content at the time of use does not exceed 0.4 percent as specified under paragraph 3.10 of SFA-5.5 of ASME Code Section II, Part C. The NRC inspection team observed that

SMAW electrodes and the SAW flux for the STP Unit 3 and 4 project were stored in ovens to prevent moisture pickup and that portable ovens (hotboxes) were used to prevent moisture pickup after issuance of the weld rod from the ovens until the time that the weld rod was consumed in a weld joint. IHI indicated that the weld rods were returned to the ovens after 4 hours in the field if they were not consumed. Based on IHI testing that was documented in "Report of the Absorbed Moisture Test for Electrode Covers (BL-96)" at 125 degrees Celsius (C) and with the cover of the hotbox closed, weld rods maintained a moisture level of 0.1 percent after 24 hours. The NRC inspection team verified that IHI maintains the internal temperature of the hotbox at approximately 150 degrees C. Based on the NRC inspection team's observations and data supplied by IHI, the staff determined that the IHI controls to minimize moisture pickup meet the STP Unit 3 and 4 RPV design specification.

The NRC inspection team observed marking activities on the STP RPV bottom head dome for weld buildup around the control rod drive and in-core monitoring stub tubes. For the marking pen used (lot 8K390), the NRC inspection team verified that IHI analyzed its chemistry before using it on the RPV. The NRC inspection team reviewed CMTR 5501633-016H135 for the bottom head dome of the STP RPV and verified that it met the required minimum delta ferrite concentration and chemical constituents required by code.

The NRC inspection team reviewed CMTR 5981-4 for the plate material used for the personnel airlock bulkhead for the Vogtle AP1000 containment (heat number 5-2269), which included tensile and Charpy impact test results and material chemistry. The NRC inspection team verified that the results met the requirements of SA 526 Grade 70 material.

b.5 Bending and Forming

The NRC inspection team reviewed documentation for heating before rolling for plate numbers GR016A (heat number 1-2521) and DH110A (heat number 2-2607) for shell course 2 of the STP RPV and verified that the records for heating rate, hold temperature, and hold time were in accordance with Procedure 016R001. The NRC inspection team also reviewed Furnace Charts SRB-001 and SRB-002 to verify that they were consistent with the procedure and other records.

The NRC inspection team observed bending and forming activities for the Vogtle Unit 3 containment equipment hatch (part number F23-AA-2A, heat number 5-0533) and reviewed Procedure 026R003, which detailed the required parameters for the fabrication activity. The NRC inspection team verified that the work was performed in accordance with the procedure and that the procedure was consistent with the requirements of Section NE-4200 of ASME Code Section III. The NRC inspection team also reviewed CMTR 5973-2 (heat number 5-0533) and verified that the chemical and mechanical testing results met the requirements of SA-738 Grade B material, as required by the design.

b.6 Inspection Activities Related to Inspections, Tests, Analyses, and Acceptance Criteria

Section 2.1.1 of the ABWR certified design contains the principal design bases and principal design characteristics that are referenced in the design certification rule for the

RPV system and internals. Table 2.1.1.d, "Reactor Pressure Vessel System," contains fabrication and examination requirements for the RPV and internals. The NRC inspection team verified, by visual observations and review of records, that special processes and testing activities being performed at IHI are consistent with design description commitments contained in the ABWR certified design. The welding, NDE, materials verification, heat treatment, and bending and forming activities described in this section are associated with inspections, tests, analyses, and acceptance criteria (ITAAC) 2.01.01.01-2, 2.01.01.04, and 2.01.01.05 from Revision 0 of the certified ABWR design.

Section 2.2.1 of the AP1000 certified design contains the principal design bases and principal design characteristics that are referenced in the design certification rule for the containment system. Table 2.2.1-3, "Inspections, Tests, Analyses and Acceptance Criteria," contains fabrication and examination requirements for the containment system. The NRC inspection team verified, by visual observations and review of records, that special processes and testing activities are consistent with design description commitments contained in the AP1000 certified design. The welding, NDE, materials verification, impact testing, heat treatment, and bending and forming activities described in this section are associated with ITAAC 2.2.1.2a, 2.2.1.4a.ii, and 2.2.1.3a from Revision 15 of the AP1000 certified design.

c. Conclusions

Based on the sample of procedures reviewed and work observed, the NRC inspection team concluded that the implementation of the IHI program for control of special processes is consistent with the regulatory requirements of Criterion IX of Appendix B to 10 CFR Part 50. Based on the sample of records reviewed, the NRC inspection team concluded that qualified personnel are using qualified equipment and processes to effectively implement IHI's QAPD and the associated fabrication and special processes procedures. No findings of significance were identified.

5. Test Control

a. Inspection Scope

The NRC inspection team reviewed the implementation of the IHI program for test control. Specifically, the NRC inspection team reviewed the policies and procedures governing the implementation of IHI processes to verify compliance with Criterion XI of Appendix B to 10 CFR Part 50. The NRC inspection team also reviewed a sample of completed test records associated with safety-related component fabrication.

The NRC inspection team reviewed the following documents for this inspection area:

- IBR A13-30000, "Quality Assurance Program Description," Revision 8, dated September 13, 2010

- IBR A13-01001, "Quality Assurance Manual for Nuclear Power Items (ASME Code Section III Division 1 and Division 2)," Revision 45, dated August 6, 2010

- 016R008, “Procedure for As Fabricated Test of Plates,” Revision 2, dated February 17, 2010

- 016R012, “Procedure for Chemical Analysis,” Revision 1, dated January 6, 2010, STP Nuclear Operating Company (Job No. 5501633)

- 016R016, “Cladding Measurement Procedure,” Revision 2, dated August 3, 2010, STP Nuclear Operating Company (Job No. 5501633)

- 016R017, “Dimensional Measurement Procedure,” Revision 1, dated December 11, 2009, STP Nuclear Operating Company (Job No. 5501633)

- MR10-40, July 8, 2010, for part number 112-A01-012 (heat 2-4029, plate JH048A), STP RPV plate for shell course 1

- MR10-41, July 8, 2010, for part number 112-A01-013 (heat 2-5039, plate MF064A), STP RPV plate for shell course 1

- MR10-032, June 21, 2010, for part number 112-A01-014 (heat 2-2607, plate DH110A), STP RPV plate for shell course 2

- MR10-033, June 21, 2010, for part number 112-A01-015 (heat 1-2521, plate GR016A), STP RPV plate for shell course 2

- Dimensional test records DT-633-379-1 and DT-633-379-2

b. Observations and Findings

The NRC inspection team reviewed Section 11 of the QAPD for test control. The QAPD references Section 13 of the ASME QAM for a description of how IHI implements test control. The NRC inspection team verified that Section 13 of the QAM was consistent with the requirements of Criterion XI of Appendix B to 10 CFR Part 50.

For Charpy impact, tensile, and drop weight testing, the NRC inspection team reviewed test procedures and records and verified that they referenced the appropriate standards, including SA-370 and ASTM E208 as applicable. For the test records for each plate of shell courses 1 and 2, the NRC inspection team verified that the acceptance criteria met the requirements for SA-533 Type B, Class 1 material, as specified by the design. In addition, the NRC inspection team verified that the records included the information required by the procedure. For drop weight testing, the NRC inspection team verified that, for the type of specimen used, the appropriate drop weight energy was applied for the associated tensile strength of the material, in accordance with ASTM E208.

The NRC inspection team reviewed the procedures for chemical analysis, cladding measurement, and dimensional measurement and verified that the appropriate codes were referenced. The NRC inspection team also reviewed a sample of dimensional test reports and verified that they were in conformance with the procedure. The NRC inspection team verified that the quality control inspector who performed the dimensional verification was qualified in accordance with IHI procedures. Although final, as-built

dimensional verification for various components for the ABWR RPV and AP1000 containment structures were not complete at the time of the inspection, the NRC inspection team verified that in-process dimensional verifications were conducted by qualified personnel in accordance with approved procedures.

Section 2.1.1 of the ABWR certified design contains the principal design bases and principal design characteristics that are referenced in the design certification rule for the RPV system and internals. Table 2.1.1.d, "Reactor Pressure Vessel System," contains fabrication and examination requirements for the RPV and internals. The NRC inspection team verified, by visual observation and review of records, that dimensional verification, examination, and testing activities are consistent with design description commitments contained in the ABWR certified design. The activities described in this section are associated with ITAAC 2.01.01.05 and 2.01.01.01-1 from Revision 0 of the certified ABWR design.

Section 2.2.1 of the AP1000 certified design contains the principal design bases and principal design characteristics that are referenced in the design certification rule for the containment system. Table 2.2.1-3, "Inspections, Tests, Analyses and Acceptance Criteria," contains fabrication and examination requirements for the containment system. The NRC inspection team verified, by visual observation and review of records, that dimensional verification activities are consistent with design description commitments contained in the AP1000 certified design. This activity is associated with ITAAC 2.2.1.1 from Revision 15 of the AP1000 certified design.

c. Conclusions

The NRC inspection team concluded that the implementation of the IHI program for test control is consistent with the regulatory requirements of Criterion XI of Appendix B to 10 CFR Part 50. Based on the sample of test control documents reviewed and activities observed, the NRC inspection team concluded that IHI is effectively implementing its QAPD and the associated test control procedures. No findings of significance were identified.

6. Control of Measuring and Test Equipment

a. Inspection Scope

The NRC inspection team reviewed the implementation of the IHI process for control of M&TE. Specifically, the NRC inspection team reviewed the policies and procedures governing the implementation of IHI's processes to verify compliance with Criterion XII of Appendix B to 10 CFR Part 50. The NRC inspection team walked down the shop floor to verify that M&TE included stickers that identified the M&TE number and the calibration period. The NRC inspection team interviewed personnel responsible for the control and calibration of M&TE and reviewed the calibration history for a sample of M&TE.

The NRC inspection team reviewed the following documents for this inspection area:

- IBR A13-30000, "Quality Assurance Program Description," Revision 8, dated September 13, 2010

- IBR A13-01001, “Quality Assurance Manual for Nuclear Power Items (ASME Code Section III Division 1 and Division 2),” Revision 45, dated August 6, 2010

- IBR M13-15001, “Control Procedure for Measuring and Test Equipment,” Revision V, dated August 10, 2010

- IBR M13-15060, “Control Procedure of Examination and Testing Equipment,” Revision C, dated June 24, 2009

- IBR M13-15064, “Calibration and Maintenance Procedure for NDE Equipment,” Revision D, dated June 24, 2009

- Calibration records for various M&TE

b. Observations and Findings

The NRC inspection team reviewed Section 12 of the QAPD for control of M&TE. The QAPD references Section 15 of the ASME QAM for a description of how IHI implements control of M&TE. The NRC inspection team verified that Section 15 of the QAM was consistent with the requirements of Criterion XII of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed the procedures that IHI established for control, calibration, and maintenance of M&TE, including NDE equipment, and verified that provisions for out-of-calibration M&TE were discussed. The NRC inspection team observed the M&TE storage and issue room and noted a segregation area for out-of-calibration M&TE. The team reviewed reports for nonconforming M&TE and verified that the out-of-calibration M&TE did not impact ASME Code work at IHI. However, provisions existed in the procedures to require additional evaluation in the event that out-of-calibration M&TE affected inspection or test results.

For the M&TE observed, the NRC inspection team verified that the equipment was labeled in a manner to ensure traceability to the calibration records. For the following sample of M&TE, the inspection team reviewed calibration records and verified that the dates calibrated, the due dates, the calibration frequency, and the nationally recognized standards for calibration were consistent with procedural requirements:

- P00238—thermocouple used for longitudinal welding of shell course 2
- 0537162—amperage meter used for longitudinal welding of shell course 2
- Handy Magna A-2 No. 03066—yoke used on MT of shell course 2 welds
- Handy Magna A-2 No. 09025—yoke used on MT of shell course 2 welds
- J00925—thermocouple used for PT exam of airlock bulkhead
- 3284A-000021—light meter used for PT exam
- 6539042—pressure gauge in M&TE storage room
- 60331174—caliper in M&TE storage room
- 71346—micrometer in M&TE storage room
- 991008 and 5109B—thermocouples used for heat treating of components
- Y1-NO-24 and Y1-NO-41—data recorders used for documenting heat treatment
- 777702—Charpy test machine
- 68236TK—tensile test machine
- I-88TK69—drop-weight test machine

c. Conclusions

The NRC inspection team concluded that the implementation of the IHI program for control of M&TE is consistent with the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Based on the limited sample of calibration procedures and records reviewed and on observed field activities, the NRC inspection team concluded that IHI is effectively implementing its QAPD and the associated M&TE procedures. No findings of significance were identified.

7. Nonconforming Materials, Parts, or Components

a. Inspection Scope

The NRC inspection team reviewed the IHI policies and procedures for control of nonconforming materials, parts, or components to verify compliance with Criterion XV of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of NONs and DNs, interviewed IHI personnel, walked the shop floor, and viewed two reject items, two hold items, and the receipt inspection area.

The NRC inspection team reviewed the following documents in this inspection area:

- IBR A13-01001, "Quality Assurance Manual for Nuclear Power Items," Revision 45, dated August 6, 2010
- IBR A13-30000, "Quality Assurance Program Description (10CFR50 Appendix B)," Revision 8, dated August 27, 2010
- IBR A13-17001, "Control of Nonconforming Items," Revision V, dated September 6, 2010
- DN 003-008
- DN 003-012
- DN 003-015
- DN 622-049
- DN 633-038
- DN 633-050
- NON 003-012
- NON 003-015
- NON 004-005
- NON 03-008

- NON 633-060
- NON-001-V011
- NON-633-050

b. Observations and Findings

IHI's ASME QAM, QAPD, and Procedure IBR A13-17001 describe the identification, documentation, segregation, evaluation, and disposition requirements for nonconforming items or activities in order to prevent their inadvertent use. The procedures identify the responsibility and authority for review and disposition of nonconforming items and control further processing, delivery, and installation of nonconforming items until the disposition is completed. In addition, the procedures provided for reinspection of repaired and reworked items and for notification to affected organizations of nonconforming conditions. All nonconformities in ASME Code items are dispositioned as "use as is," "repair," or "reject." For safety-related non-ASME Code items, IHI makes a distinction between "repair" and "rework." Procedure IBR A13-17001 provides a link to the 10 CFR Part 21 procedure, IBR A13-30001. In addition, depending on the severity of the nonconformity, IHI may issue a CACS.

The NRC inspection team toured the shop floor and verified that nonconforming materials, parts, and components were appropriately identified and tagged. The NRC inspection team reviewed a sample of NONs and DNs. The NRC inspection team found that nonconforming items were reviewed and dispositioned in accordance with documented procedures as reject, repair/rework, or use-as-is. The dispositions contained technical justifications documenting the nonconforming items as repair or use-as-is. In addition, the NRC inspection team found that nonconformances to design requirements dispositioned as repair or use-as-is were subject to design control measures commensurate with those applied to the original design.

c. Conclusions

The implementation of the IHI program for the control of nonconforming materials, parts, or components is consistent with the regulatory requirements of Criterion XV of Appendix B to 10 CFR Part 50. Based on the limited sample of NONs, DNs, interviews with IHI staff, and a tour of the shop floor, the NRC inspection team concluded that IHI is effectively implementing its QAPD, ASME QAM, and implementing procedures. No findings of significance were identified.

8. Corrective Action

a. Inspection Scope

The NRC inspection team reviewed IHI's implementation of its process for corrective actions. Specifically, the NRC inspection team reviewed the policies and procedures governing IHI's implementation of its process to verify compliance with Criterion XVI of Appendix B to 10 CFR Part 50. In addition, the NRC inspection team reviewed a sample of CACSs associated with NONs, DNs, vendor nonconformances, and internal and

external audit findings and discussed the program with IHI personnel responsible for the implementation of the corrective action program.

The NRC inspection team reviewed the following documents for this inspection area:

- IBR A13-01001, “Quality Assurance Manual for Nuclear Power Items,” Revision 45, dated August 6, 2010
- IBR A13-30000, “Quality Assurance Program Description (10CFR50 Appendix B),” Revision 8, dated August 27, 2010
- IBR A13-17001, “Control of Nonconforming Items,” Revision V, dated September 6, 2010
- CACS 10-003
- CACS 10-014
- CACS 10-017
- CACS 10-018
- CACS 10-055
- CACS 10-129
- CACS 10-176
- CACS 10-219
- CACS 10-222
- CACS 10-223
- CACS-10-007
- CACS-10-015
- CACS-10-053
- CACS-10-199

b. Observations and Findings

The NRC inspection team reviewed the IHI QAPD, QAM, implementing procedures, and a sample of CACSs to verify conformance with Criterion XVI of Appendix B to 10 CFR Part 50. QAPD Section 16 describes the control of corrective action to be implemented in order to determine the cause of the condition and to prevent recurrence when a CAQ is identified in safety-related items and services. ASME QAM Section 18 describes the responsibilities and controls used to assure that CAQs are promptly

identified and corrected. In the case of significant conditions adverse to quality (SCAQs), the ASME QAM states that the cause of the condition shall be determined and corrective action taken to preclude recurrence. The identification, cause, and corrective actions for SCAQs shall be documented and reported to the general manager for QA. In addition, ASME QAM Section 18 states that followup action shall be taken to verify implementation of this corrective action.

Procedure IBR A13-17001 contains the procedure for corrective actions and describes the identification and evaluation of CAQS and the documentation, performance, and closeout of corrective actions. CAQs and SCAQs identified through nonconformance reports, vendor deficiency reports, customer comments, and audits are entered in the corrective action program. The procedure requires IHI subsuppliers to submit nonconforming reports and the proposed corrective actions for approval before implementing the corrective actions, and it describes the IHI process for review and approval of corrective actions related to vendor nonconformances. In addition, Procedure IBR A13-17001 provides a link to the 10 CFR Part 21 program. Procedure IBR A13-30008 describes the method of root cause analysis.

The NRC inspection team reviewed a sample of corrective actions associated with NONs, DNs, vendor nonconformances, and internal and external audit findings to verify that the corrective action reports provide for documentation and description of the CAQ, the cause and corrective actions taken to prevent recurrence, review and approval by the responsible authority, status of corrective actions reviewed, and followup action taken to verify timely and effective implementation of corrective actions.

IHI is committed to ASME NQA-1-1994, Nonmandatory Appendix 16A-1, which states, in part, that CAQs should be reviewed to determine the existence of trends. The significance of identified trends should be classified to determine whether further action is necessary. Procedure IBR A13-17001 states that trend analysis shall be implemented for CAQs, when necessary, in accordance with procedure IBR A13-30007, “Guideline for Trend Analysis.” At the time of this inspection, IBR A13-30007 had not been issued and no management system was established for overview of trends for CAQs. IHI failed to review CAQs to determine the existence of trends to identify repetitive conditions and SCAQs.

In addition, Toshiba issued IHI a stop work order for a repetitive failure to follow procedural guidance as it pertains to the Japanese nuclear projects. In response, IHI issued CACS 10-055 to address the issue. This CACS is still open. IHI is in the process of performing a root cause analysis and has identified interim corrective actions. However, the NRC inspection team identified five additional related instances over the past 12 months involving IHI operators failing to appropriately follow procedures that led to nonconforming conditions for U.S. and Chinese components. The failure to effectively trend CAQs is identified as Nonconformance 99901395/2010-201-02.

c. Conclusions

With the exception of NON 99901395/2010-201-02 for failure to implement a trending program, the NRC inspection team concluded that, based on the limited sample of CACS reviewed, the implementation of the IHI program for corrective actions was consistent with the regulatory requirements of Criterion XVI of Appendix B to 10 CFR Part 50.

9. Translation of Documents

The NRC's contract translators reviewed Sections 3, 7, 9, and 12 of IHI's QAPD for the purpose of validating the translation from English to Japanese. The ASME QAM states that in the event of a conflict regarding differences in interpretation between the English version and Japanese version of the QA Manual, the English version shall take precedence; however, through interviews with the responsible IHI personnel, the NRC inspection team learned that IHI primarily uses the Japanese version and the English version is mainly for use during audits by external parties. Through the course of the review, the NRC contract translators identified only minor differences that did not impact the application of the requirements.

10. Entrance and Exit Meetings

On September 13, 2010, the NRC inspection team discussed the scope of the inspection with Mr. Kuribayashi, and with the IHI management, and staff. On September 17, 2010, the NRC inspection team presented the inspection results and observations during an exit meeting with Mr. Kuribayashi and other IHI management and staff. The attachment to this report lists the entrance and exit meeting attendees, as well as those interviewed by the NRC inspection team.

ATTACHMENT

1. ENTRANCE AND EXIT MEETING ATTENDEES

Name	Title	Affiliation	Entrance	Exit	Interviewed
Richard Rasmussen	Supervisor, QA/Vendor Inspection	NRC	X	X	
Richard McIntyre	Team Lead	NRC	X	X	
Samantha Crane	Rx Operations Eng	NRC	X	X	
Jamie Heisserer	Construction Inspector	NRC	X	X	
Tim Steingass	Materials Engineer	NRC	X	X	
Kenichi Watanabe	Assistant Director of International Programs	JNES	X		
Shunichiro Yamamoto	Senior Inspector, International Affairs Division	JNES	X		
Yamanaka Takeshi	Senior Officer, Technical Planning and Coordination Group	JNES	X	X	
Yoshimura Naoki	Senior Inspector, Inspection Affairs Division	JNES	X	X	
Otsuka Takehiro	Senior Staff, Office of International Programs	JNES		X	
Takashi Kuribayshi	General Manager, Quality Assurance Department	IHI	X	X	X
Ryota Okubo	General Manager, Production Engineering Group	IHI	X	X	X
Takayuki Yagi	NDE Level III and Manager, Quality Control Group	IHI	X	X	X
Hiroshi Takeda	Manager, Manufacturing Group	IHI	X	X	X
Toru Yoshida	Heat Treating Foreman	IHI			X
Junya Nishihata	NDE Level II	IHI			X
Nobuyuki Neda	Project Manager	IHI	X		
Hiroaki Hatakenaka	Project Manager (STP3 RPV)	IHI	X	X	
Kenji Hirano	General Manager of Engineering Group	IHI	X	X	
Masaki Sakai	General Manager of NPE Department	IHI	X	X	

Ichiro Watabe	General Manager of QC Group	IHI	X	X	
Kenichi Sakuma	General Manager of Production Control Group	IHI	X	X	
Akira Omori	General Manager of Procurement Department	IHI	X	X	
Yokihiro Iwasaki	Manager of NPE Department	IHI	X	X	
Takashi Hokari	Manager of QA Department	IHI	X	X	X
Kazuyuki Tomoda	QA Engineer	IHI	X	X	X
Haruhiko Terasaki	QA Engineer	IHI	X	X	
Haruri Miyaguchi	Assitant to President	IHI	X		
Hiroshi Takeda	Manager of Manufacturing Group	IHI	X	X	X
Yuji Nagasawa	Manager of NPE Department	IHI	X	X	
Itaru Sazuki	Manager of NPE Department	IHI	X	X	X
Hiroyaki Sugino	Manager of NPE Department	IHI	X	X	
Kazuhiro Mori	Manager of Operation Control	IHI	X		
Nobuyuki Ueda	Manager, Project Group	IHI	X	X	
Tokao Takahashi	Welding Consultant, Engineering Group	IHI		X	X
Shinya Masuda	Welding Engineer, Engineering Group	IHI		X	X
Tomoyuki In	Assistant Manager, Materials Group	IHI	X		
Satoshi Kobayashi	Procurement	IHI		X	
Yuto Nishaoka	QC Engineer	IHI		X	
Ikuo Uchida	Manager, QA Department	IHI		X	
Shigeru Miyamoto	QC Department	IHI		X	
Shuji Nakajima	QA Engineer	IHI		X	
Shunji Kobayashi	Manager, NPE Department	IHI		X	
Yutaka Kodama	QA Engineer	IHI		X	
Terry Casteel	Manager, Quality Assurance	TANE		X	
Hisao Ikeuchi	Conference Interpreter	Simul International, Inc.	X	X	
Masako Takano	Conference Interpreter	Simul International,	X	X	

		Inc.			
Mark McBurnett	Vice President, Oversight & Regulatory Affairs	STPNOC		X	
Tim Walker	Manager, Quality	STPNOC	X	X	
Scott Cameron	Supervisor, Vendor Oversight	STPNOC	X	X	
Keiji Matsunaga	Senior Specialist, Vessel and Component Design Croup	Toshiba	X	X	
Kiyoshi Iwasawa	Chief Specialist, QA Department	Toshiba	X		
Massaharu Tabiraki	Technical Translator		X	X	

2. INSPECTION PROCEDURES USED

IP 43002, "Routine Inspections of Nuclear Vendors"

IP 36100, "Inspection of 10 CFR Parts 21 and 50.55(e) Programs for Reporting Defects and Noncompliance"

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

The following items were found during this inspection:

Item Number	Status	Type	Description
99901395/2010-201-01	Open	NON	Criterion V and 10 CFR 21.3
99901395/2010-201-02	Open	NON	Criterion XVI