

August 24, 2009

Mr. Masanobu Maruoka, Deputy Manager  
Quality Assurance Group  
JSW, LTD.  
4, Chatsumachi, Muroran  
Hokkaido, Japan 051-08505

SUBJECT: NRC INSPECTION REPORT 99901364/2009-201 AND NOTICE OF VIOLATION  
TO JAPAN STEEL WORKS

Dear Mr. Maruoka:

On July 8–10, 2009, U.S. Nuclear Regulatory Commission (NRC) inspectors conducted an inspection at the Japan Steel Works (JSW) facility in Muroran, Japan. The enclosed report presents the details of that inspection.

This was a limited scope inspection that focused on assessing your compliance with the provisions of Title 10, Part 21 of the *Code of Federal Regulations* (10 CFR Part 21), “Reporting of Defects and Noncompliance,” and selected portions of Appendix B to 10 CFR Part 50 (Appendix B), “Quality Assurance Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants.” Specifically, the inspection team reviewed certain portions of your quality assurance (QA) program implementation including special processes such as non-destructive examination (NDE) activities and mechanical testing that were conducted during the time of the inspection for the fabrication of the reactor pressure vessel (RPV) bottom head dome and bottom head ring for South Texas Project (STP) Unit 3. While the NRC did review the implementation of portions of your QA and Part 21 programs, this NRC inspection report does not constitute NRC endorsement of these programs.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. Specifically, your 10 CFR Part 21 procedure failed to provide sufficient guidance to meet the requirements to ensure that deviations and failures to comply would be evaluated to determine whether they were associated with substantial safety hazards. This violation is cited in the enclosed Notice of Violation (NOV) and the circumstances surrounding it is described in detail in the enclosed inspection report.

You are required to provide a written explanation within 30 days of this letter in accordance with the instructions specified in the enclosed NOV. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

The NRC inspectors also concluded that QA program requirements were found to be effectively implemented and in compliance with the requirements of Appendix B.

In accordance with 10 CFR 2.390, "Public Exemptions, Requests for Withholding," the agency will make a copy of this letter, its enclosures, and your response 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 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 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, "Requirements for the Protection of Safeguards Information."

Sincerely,

*/RA/*

John A. Nakoski, Chief  
Quality and Vendor Branch 2  
Division of Construction Inspection  
& Operational Programs  
Office of New Reactors

Docket No. 999-01364

Enclosure:    1. Notice of Violation  
                  2. Inspection Report 99901364/2009-201

In accordance with 10 CFR 2.390, "Public Exemptions, Requests for Withholding," the agency will make a copy of this letter, its enclosures, and your response 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 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 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, "Requirements for the Protection of Safeguards Information."

Sincerely,

/RA/

John A. Nakoski, Chief  
Quality and Vendor Branch 2  
Division of Construction Inspection  
& Operational Programs  
Office of New Reactors

Docket No. 999-01364

Enclosure: 1. Notice of Violation  
2. Inspection Report 99901364/2009-201

DISTRIBUTION:

RidsNroDcipCqvb/Cqvb

GTracy

JTappert

masanobu\_maruoka@jsw.co.jp

ADAMS Accession No.: **ML092290864**

|               |                      |                     |                   |
|---------------|----------------------|---------------------|-------------------|
| <b>OFFICE</b> | NRO/DCIP/CQVB        | NRO/DCIP/CQVB       | NRO/DCIP/CQVB     |
| <b>NAME</b>   | ASakadales           | ARiveraVarona       | YDiazCastillo     |
| <b>DATE</b>   | 8/19/09              | 8/24/09             | 8/18/09           |
| <b>OFFICE</b> | RII/ DCI/CIB3        | NRO/DCIP/CQVB       | NRO/DCIP/CQVB: BC |
| <b>NAME</b>   | JHeisserer (JAN for) | RMclntyre (JAN for) | JANakoski         |
| <b>DATE</b>   | 8/19/09              | 8/24/09             | 8/24/09           |

**OFFICIAL RECORD COPY**

## NOTICE OF VIOLATION

Japan Steel Works, LTD  
Muroran Plant  
4, Chatsumachi, Muroran  
Hokkaido, Japan 051-08505

Docket Number 99901364  
Inspection Report Number 2009-201

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted July 8-10, 2009, of activities performed at the Japan Steel Works (JSW) LTD facility at Muroran, Japan, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

- A. Title 10, Section 21.21, "Notification of Failure to Comply or Existence of a Defect and Its Evaluation," of the *Code of Federal Regulations* (10 CFR 21.21), paragraph 21.21(a), requires, in part, that each individual, corporation, partnership, or other entity subject to 10 CFR Part 21, "Reporting of Defects and Noncompliance," shall adopt appropriate procedures to evaluate deviations and failures to comply associated with substantial safety hazards as soon as practicable.

In part, 10 CFR 21.21(d)(3)(i), requires that the responsible officer provide initial notification by facsimile to the NRC Operations Center at 301-492-8187 or by telephone at 301-951-0550, and that verification be made that the facsimile has been received by calling the NRC Operations Center.

10 CFR 21.21(d)(4), identifies specific information that shall be included in written notifications made to the NRC.

10 CFR 21.51 sets forth requirements for the maintenance of records related to 10 CFR Part 21 evaluations and notifications.

Contrary to the above, as of July 10, 2009, In-Company Standard Procedure (CSP) QA-15051, "Control Procedure of Reporting of Defects, Noncompliance, and Failures to Comply Pursuant to 10 CFR21," Revision 5, dated January 19, 2009, did not provide adequate procedural guidance to meet the requirements of 10 CFR Part 21. For example:

1. CSP-QA-15051 did not provide guidance for the evaluation of deviations to identify defects that could cause a substantial safety hazard that could be reportable to the NRC, as required by 10 CFR 21.21(a).
2. CSP-QA-15051 did not provide guidance on how to make the initial notification to the NRC if a defect is identified, nor did it provide guidance for verifying that the initial notification has been received by calling back the NRC Operations Center, as required by 10 CFR 21.21(d)(3)(i).
3. CSP-QA-15051 did not provide guidance for the information that shall be included in the written notification, as required by 10 CFR 21.21(d)(4).
4. CSP-QA-15051 did not reflect the time frames of 10 CFR 21.51 for maintenance of records.

These issues have been identified as Violation 99901364/2009-201-01.

This is a Severity Level IV violation (Supplement VII of the Enforcement Manual).

Pursuant to the provisions of 10 CFR 2.201, JSW is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to John A. Nakoski, Chief, Quality and Vendor Branch 2, Division of Construction Inspection and Operational Programs, Office of New Reactors, within 30 days of the date of the letter transmitting this Notice of Violation (NOV). This reply should be clearly marked as a "Reply to a Notice of Violation 99901364/2009-201-01" and should include: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), 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 withholding of such material, 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.

Dated this 24<sup>th</sup> day of August 2009.



## **EXECUTIVE SUMMARY**

Japan Steel Works  
99901364/2009-201

The purpose of this U.S. Nuclear Regulatory Commission (NRC) inspection was to verify that Japan Steel Works (JSW) implemented an adequate quality assurance (QA) program that complies with the requirements of Appendix B to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 (Appendix B), "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants." The inspection was also to verify that JSW implemented a program for reporting defects and nonconformances consistent with the requirements of 10 CFR Part 21, "Reporting of Defects and Noncompliance." This was a limited scope inspection during which the NRC inspectors specifically reviewed selected portions of JSW's QA program implementation, including special processes activities such as non-destructive examination (NDE), and mechanical testing conducted for the fabrication of the reactor pressure vessel (RPV) bottom head dome, and bottom head ring for South Texas Project (STP) Unit 3. The inspection was conducted at JSW's facility in Muroran, Japan.

The vendor inspection at JSW included observation by the Japanese Nuclear Regulatory Authorities (JNES) and Nuclear and Industrial Safety Agency (NISA) as part of international cooperative activities conducted under Multinational Design Evaluation Program (MDEP) initiatives to share experiences on the construction of new reactors, oversight of vendors, and modular construction techniques.

The NRC inspection bases were the following:

- 10 CFR Part 21
- Appendix B

The NRC inspectors implemented Inspection Procedure 43002, "Routine Inspections of Nuclear Vendors" and Inspection Procedure 36100, "Inspection of 10 CFR Part 21 and 50.55(e) Programs for Reporting Defects and Nonconformance," while conducting this inspection.

During the NRC inspection at JSW, daily meetings were conducted between the NRC inspectors and JSW staff to discuss observations and/or findings. The NRC inspectors also discussed ongoing inspection activities daily during the inspection to share issues with the JSW staff.

On April 2007, the NRC performed a pilot audit of the implementation of JSW's quality assurance program at JSW's facility in Muroran, Japan. The purpose of this audit was to conduct a pilot of the new vendor inspection program manual chapter and inspection procedure 43002, "Routine Inspections of Nuclear Vendors." The NRC did not identify any findings during this pilot audit.

The NRC inspection team reviewed and evaluated JSW's implementation of its 10 CFR Part 21 program for evaluating deviations and reporting of defects that could cause a substantial safety hazard. The NRC inspectors identified Violation 999-01364/2009-201-01 for JSW's failure to provide sufficient guidance to meet the 10 CFR Part 21 requirements to ensure that deviations and failures to comply are evaluated to determine whether they are associated with substantial safety hazards.

The NRC inspectors also reviewed JSW's QA program and implementation activities for the control of purchased material, equipment, and services; inspections; special processes such as NDE; procurement document control; and corrective action and nonconformance activities. The NRC inspectors concluded that these portions of JSW's QA program regarding its safety-related activities were appropriately controlled and implemented.

## REPORT DETAILS

### 1. 10 CFR Part 21 Program

#### a. Inspection Scope

The NRC inspectors reviewed JSW's policies and implementing procedures that govern the 10 CFR Part 21 program to verify compliance with the requirements of 10 CFR Part 21, "Reporting of Defects and Noncompliances." Specifically, the NRC inspectors reviewed the following procedure established by JSW:

- JSW Company Standard Procedure (CSP)-QA-15051, "Control Procedure of Reporting of Defects, Noncompliance and Failures to Comply Pursuant to 10CFR21," Revision 5, dated January 19, 2009.

Additionally, the NRC inspectors evaluated JSW's 10 CFR Part 21 postings for compliance with the requirements of 10 CFR 21.6, "Posting Requirements," and reviewed a sample of JSW's purchase orders (POs) to verify compliance with 10 CFR 21.31, "Procurement Documents."

#### b. Observations and Findings

##### b.1 Postings

The NRC inspectors verified that JSW had posted notices that included, (1) a copy of Section 206 of the Energy Reorganization Act of 1974; (2) a description of 10 CFR Part 21 and the JSW procedure that implements the regulation; (3) the location where the 10 CFR Part 21 regulation and implementing procedures may be examined; and (4) a notice which included the telephone number of JSW's 10 CFR Part 21 contacts (i.e., the Manager and the Deputy Manager of the Quality Assurance Group (QAG)). The NRC inspectors concluded that JSW's 10 CFR 21 postings were in compliance with the requirements of 10 CFR 21.6.

##### b.2 10 CFR Part 21 Procedure and Implementation

CSP-QA-15051 identified JSW personnel responsibilities for the identification, control, documentation, and resolution of conditions adverse to quality and outlines the process used for the reporting of defects and noncompliance discovered by JSW or reported to JSW by its suppliers or customers. During the review of the procedure, the NRC inspectors found that the procedure did not contain adequate guidance for meeting certain requirements of 10 CFR Part 21. Specifically, although Step 6.2 of CSP-QA-15051 states that the QAG Manager shall be responsible for evaluating nonconformities and associated notifications, the procedure did not contain guidance for evaluating deviations for identifying defects that could cause a substantial safety hazard that could be reportable to the NRC. Further, JSW's QAG Manager informed the NRC inspectors that JSW had not performed any 10 CFR Part 21 evaluations.

CSP-QA-15051 also failed to address all the requirements of 10 CFR Part 21.21 because, although the procedure included the timeliness requirements for submitting the initial and written notifications, it did not include guidance on how the initial notification should be made, or for verifying that the initial notification had been received by calling the NRC Operations Center in accordance with 10 CFR Part 21.21(a)(3)(d)(i). Furthermore, the procedure did not specify the

information that shall be included in the written notification as required by 10 CFR Part 21.21(d)(4).

The NRC inspectors also found that CSP-QA-15051 did not reflect the time frames of 10 CFR Part 21.51 for maintenance of records. Specifically, the procedure did not include the requirement that (1) suppliers of basic components retain any notifications sent to purchasers and affected licensees for a minimum of five years after the date of notification and; (2) that suppliers of basic components retain a record of the purchasers of basic components for ten years after delivery of the basic component or service associated with a basic component.

JSW's failure to translate the requirements of 10 CFR Part 21 into CSP-QA-15051 has been identified as Violation 99901364/2009-201-01.

### b.3 Purchase Orders (POs)

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

### c. Conclusions

The inspectors identified one violation of 10 CFR Part 21. Violation 99901364/2009-201-01 was cited because CSP-QA-15051 failed to adequately provide guidance to ensure that deviations and failures to comply are evaluated to determine whether they are associated with substantial safety hazards, in accordance with 10 CFR Part 21. With the exception of the violation noted above, the inspectors concluded that JSW's 10 CFR Part 21 program is consistent with regulatory requirements and effectively implemented.

## 2. Order Entry and Fabrication

### a. Inspection Scope

The NRC inspectors evaluated a sample of JSW's job packages, including the purchase order specifications for the bottom head ring and bottom head dome of the proposed Advanced Boiling Water Reactor (ABWR) for STP Unit 3. The inspectors also reviewed the JSW fabrication specifications and Certified Material Test Reports (CMTRs) for these components. The procedures, documents, and records reviewed within the scope of the inspection in this area included:

- Manufacturing Specification for Bottom Head Dome, N-7907-10, Revision 2, dated September 30, 2008. (JSW Job No. FN7-3024).
- Manufacturing Specification for Bottom Head Ring, N-7908-10, Revision 3, dated September 30, 2008. (JSW Job No. FN7-3025).
- IHI Procurement Specification for Bottom Head Forgings for STP-3 Reactor Pressure Vessel, 5501633-016H001, Revision 7. (JSW Job Nos. FN7-3024 and FN7-3025).

- Heat Analysis Report IR Number 7025-1-1-2A, dated May 12, 2008 for IHI Part # 113-A01-020 (JSW Job No. FN7-3025).
- Heat Analysis Report IR Number 7024-1-1-2A, dated October 3, 2008 for IHI Part # 113-A01-021 (JSW Job No. FN7-3024).
- Certified Material Test Report, Nikko Inspection Service Co. LTD, Document No. MET-09-098, dated July 9, 2009 (JSW Job No. FN7-3025).

b. Observations and Findings

During their review, the NRC inspectors verified that the material specifications required by the IHI procurement specification for the STP Unit 3 bottom head ring and bottom head dome were translated into the JSW fabrication specifications. The inspectors further verified that those requirements met the American Society of Mechanical Engineers (ASME) code material specifications, as included in the NRC ABWR certified design, Revision 0. Furthermore, the inspectors verified that the chemical analysis included in CMTR MET-09-098 was within the range specified in ASME standard material specification (SA-508) and the additional restrictions included in IHI Procurement Specification 5501633-016H001.

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 reactor pressure vessel (RPV) system and internals. Table 2.1.1.d, "Reactor Pressure Vessel System," contains fabrication and examination requirements for the RPV and internals. The inspectors verified, by visual observations, physical examinations, and review of records that special processes and testing activities are consistent with design description commitments contained in the ABWR certified design. This activity is associated with the Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) 2.01.01.04 from Revision 0 of the certified ABWR design.

c. Conclusions

The NRC inspectors concluded that the requirements set forth in the customer purchase specifications were effectively translated into fabrication specifications and that JSW verified those requirements through the results of the CMTR.

3. Control of Special Processes

a. Inspection Scope

The NRC inspectors evaluated ongoing activities such as NDE, mechanical testing, and sampled the fabrication of long-lead items for United States new reactor components. These included: the bottom head ring, bottom head dome, shell course 3, and shell flange of the ABWR RPV for STP Unit 3; the bottom head ring and bottom head dome of the ABWR RPV for STP Unit 4; the steam generator channel heads 1 and 2 and steam generator tube sheet of the AP1000 for Vogtle Unit 3; and the steam generator tube sheet 3 for the Evolutionary Power Reactor (EPR) at Calvert Cliffs. See Attachment 2 for a listing of component numbers and heat numbers for each component observed by the NRC inspectors.

The NRC inspectors reviewed test documentation for NDE activities including a liquid penetrant (PT) examination for the STP Unit 3 bottom head dome, ultrasonic testing (UT) for the STP Unit 3 bottom head ring and the reactor vessel transition ring for the AP1000. The inspectors also

reviewed test documentation for magnetic particle (MT) examinations for the STP Unit 3 bottom head dome and the transition ring for the AP1000 at two different fabrication stages; for the base material after quenching and tempering, and for the configuration at delivery.

After reviewing the applicable NDE procedures and process control check lists (PCCLs), the NRC inspectors observed JSW inspectors conducting MT on the STP Unit 3 bottom head dome and UT on the STP Unit 3 bottom head ring. The NRC inspectors reviewed the qualifications records for the NDE examiners, calibration records for the NDE equipment used, and the final examination records.

The NRC inspectors also witnessed mechanical testing of materials for the STP Unit 3 bottom head ring, including tensile testing, drop-weight testing, and Charpy V-notch testing and reviewed records associated with those activities. These records included the applicable procedures for each test method and calibration records for all equipment used.

The procedures, documents, and records reviewed within the scope of the inspection in this area included:

- Process Control Check List for Bottom Head Ring, dated April 23, 2008. (JSW Job No. FN7-3025.)
- Process Control Check List for Bottom Head Dome, dated September 5, 2008. (JSW Job No. FN7-3024).
- N-7908-30, "Ultrasonic Examination Procedure for Bottom Head Ring," Revision 3, dated April 16, 2009. (JSW Job No. FN7-3025).
- N-7907-40, "Magnetic Particle and Liquid Penetrant Examination Procedure for Bottom Head Dome," Revision 2, dated May 19, 2009. (JSW Job No. FN7-3024).
- N-7920-40, "Magnetic Particle Examination Procedure for Transition Ring," Revision 2, dated March 3, 2009. (JSW Job No. FN7-3043).
- Drawing N149513-1, STP-3 Shell Course 3 – overview. (JSW Job No. FN7-3026).
- Drawing N149513-M1, STP-3 Shell Course 3 - including sampling locations. (JSW Job No. FN7-3026).
- CSP-MS-61181, "Calibration Procedure in Accordance with ASME Code of Ultrasonic Examination Instrument," Revision 20, dated July 1, 2009.
- CSP-MS-61086, "Maintenance Procedure of Magnetic Particle Examination Equipment," Revision 23, dated October 17, 2007.
- UT Report 7025-1-25-1, dated June 26, 2009, Configuration at Delivery. (JSW Job No. FN7-3025) NOTE: This is an exam conducted prior to the customer witness exam. JSW's practice is to conduct full NDE prior to the customer witness points.
- UT Report 7025-1-25-1, dated July 9, 2009, Configuration at Delivery. (JSW Job No. FN7-3025) (JSW Spec. No N-7908-30; Customer Spec No. 016H001). NOTE: This is

the exam that was witnessed by the customers (Toshiba, IHI and STP) and NRC inspectors.

- UT Report 7043-1-16A, dated May 7, 2009, After Final Machining for Bottom End Portion and Outer Surface After QT. NOTE: This was a re-issued report from the original testing of February 27, 2009 to verify that a change from JSW Spec Revision 2 to Revision 3 did not impact the results of the UT exam. (JSW Job No. FN7-3043).
- MT Report 7024-1-27-2 (FN7-3024), dated June 30, 2009, Configuration at Delivery. (JSW Job No. FN7-3024) NOTE: This is an exam conducted prior to the customer witness exam.
- MT Report 7043-1-14, dated February 16, 2009, After Final Machining for Top End Portion and Inner Surface after QT. (JSW Job No. FN7-3043).
- MT Report 7043-1-18-1, dated March 18, 2009, Configuration at Delivery (JSW Job No. FN7-3043).
- PT Report 7024-1-27-3, dated July 1, 2009, Configuration at Delivery. (JSW Job No. FN7-3024) NOTE: This is an exam conducted prior to the customer witness exam.
- PT Report 7024-1-27-3, dated July 8, 2009, Configuration at Delivery. (JSW Job No. FN7-3024) NOTE: This is the exam that was witnessed by the customers (Toshiba, IHI and STP).
- Calibration records for dimensional measuring equipment, such as micrometers, calipers, etc.: H578, N235, R-5, L-1, S-1 used to verify sample dimensions for tensile, Charpy V-notch and drop-weight test samples from the STP Unit 3 RPV bottom head ring (JSW Job No. FN7-3025).
- CSP-IS-90001, "Training, Qualification and Certification of Nondestructive Examination Personnel," Revision 38, dated December 28, 2008.

b. Observations and Findings

b1. Nondestructive Examination

The NRC inspectors reviewed MT, PT and UT procedures and the associated examination records to verify that, for the items reviewed, the essential requirements of ASME Section V, "Nondestructive Examination" for procedures and test records were met. The NRC inspectors witnessed the MT examination on the STP-3 bottom head dome and the UT examination on the STP-3 bottom head ring and observed that the examinations were conducted in accordance with approved procedures by personnel qualified in accordance with CSP-IS-90001.

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 reactor pressure vessel (RPV) system and internals. Table 2.1.1.d, "Reactor Pressure Vessel System," contains fabrication and examination requirements for the RPV and internals. The inspectors verified, by visual observations, physical examinations, and review of records that special processes and testing activities are consistent with design description commitments contained in the ABWR

certified design. This activity is associated with the ITAAC 2.01.01.05 from Revision 0 of the certified ABWR design.

b2. Mechanical Testing

The NRC inspectors reviewed the procedures for tensile testing, Charpy V-notch testing and drop-weight testing and verified that the tests witnessed were conducted in accordance with the approved procedures. The NRC inspectors also verified that the tests witnessed were conducted in accordance with the applicable codes and standards. The NRC inspectors also witnessed mechanical tests, to verify that the dimensions of the samples met the requirements of ASME SA-370, "Test Methods and Definitions for Mechanical Testing of Steel Products," (identical with ASTM A 370) for the Charpy V-notch and tensile testing, and ASTM E-208, "Standard Test Method for Conducting Drop-Weight Test to Determine Nil-Ductility Transition Temperature of Ferritic Steels," for the drop-weight test, and that the sample markings were consistent with the sample locations indicated on the fabrication drawings. The inspectors also reviewed drawings N149513-1 and N149513-M1 for STP-3 shell course 3, the core beltline region, and verified that the test sampling plan was in accordance with code and design requirements for the materials surveillance program.

The inspectors also reviewed calibration records of the measuring and test equipment (M&TE) associated with the witnessed mechanical testing to verify that the equipment was calibrated, adjusted and maintained at the appropriate intervals as prescribed by procedures and code requirements.

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 reactor pressure vessel (RPV) system and internals. Table 2.1.1.d, "Reactor Pressure Vessel System," contains fabrication and examination requirements for the RPV and internals. The inspectors verified, by visual observations, physical examinations, and review of records that special processes and testing activities are consistent with design description commitments contained in the ABWR certified design. These activities were associated with ITAACs 2.01.01.05 and 2.01.01.06 from Revision 0 of the certified ABWR design.

c. Conclusions

The NRC inspectors concluded that JSW has established appropriate and effective means to control fabrication activities and special processes such as NDE and mechanical testing for supply of reactor pressure vessel components.

Based on a limited review of JSW procedures and test documentation, direct observations of NDE activities, and interviews with JSW personnel, the NRC inspectors determined that the JSW fabrication and special process procedures were effectively implemented by qualified personnel, using qualified equipment and processes.

4. Control of Purchased Material, Equipment, and Services

a. Inspection Scope

The NRC inspectors reviewed JSW's QA program and related implementing procedures that govern the control of purchased material, equipment, and services. The NRC inspectors also reviewed the qualified vendor list (QVL) and a sample of sub-supplier audits performed by JSW

for safety related suppliers to determine compliance with Appendix B, Criterion VI, "Control of Purchased Material, Equipment, and Services."

- JSW QAM Section 4, "Procurement Document Control," Issue No. 3, Rev. No. 1, April 12, 2007.
- JSW QAM Section 7, "Control of Purchased Materials and Services," Issue No. 3, Rev. No. 1, April 12, 2007.
- CSP-PR-15006, "Qualification of Vendors," Revision 24, dated February 18, 2008.
- CSP-PR-15008, "Survey and Audit of Vendors," Revision, 22, dated September 19, 2007.
- NQ-11108, "Qualified Vendor List for Fabrication of Items and Manufacturing of Materials," Revision 96, dated June 10, 2009.

b. Observations and Findings

The inspectors reviewed the JSW QAM sections relative to the support of control of suppliers and supplier qualification. QAM Section 4, "Procurement Document Control," described the processes for vendor qualification, performing vendor audits, processing procurement documents, and for issuing purchase orders to vendors for purchase of materials.

Section 7, "Control of Purchased Materials and Services," of the QAM described the process for conducting source verification activities at vendor facilities that do not hold appropriate QSC and have not had their performance evaluated, but, have been qualified by JSW. As an additional quality check from approved suppliers of this material, JSW performs source verification for the supply of welding material prior to delivery. This additional requirement is documented as a note on NQ-11108, list of qualified vendors. The remainder of this procedure was related to activities such as receipt inspection, final acceptance of materials or services, storage and release of materials including separate specifics for welding materials.

The inspectors also reviewed the procedures that support procurement control including CSP-PR-15006. This procedure described the process for the qualification of vendors who furnish materials, parts or services which are used by JSW for the manufacture of materials and items for nuclear facilities. It included the qualification basis, for vendors of: raw materials; code materials; subcontracted services inspection services; and calibration services and also describes the acceptance/qualification requirements.

CSP-PR-15006 also referenced CSP-PR-15008 that described the survey and audit process used by JSW for qualification of vendors who furnish semi-finished or finished material items or services which are required to meet ASME Section III Code requirements. This CSP required that (1) audits be performed by qualified lead auditors; (2) follow the annual audit schedule; (3) prepare a "Nuclear audit plan," (4) utilize the "Survey/Audit checklist for Subcontractor or Inspection Service" to document the audit review; and (5) document the audit results in the "Report of Quality Assurance system Survey/ Audit."

b1. Maintenance of the Qualified Vendor List

The inspectors reviewed standard specification NQ-11108, according to CSP-PR-15006, to identify a sample of vendors for review of their procurement and audit documentation. This QVL included two vendors that supply nuclear materials, Nippon welding Rod Co, Ltd and Kobe Steel welding Co. Both provided various welding products such as bare stainless steel welding electrodes, covered electrodes, weld rods, strip electrodes and welding flux. The QVL also included: three vendors of services such as welders or weld operators, NDE inspectors, dimensional inspection, mechanical testing and chemical analysis; four vendors who provide machining services; and six vendors who provide calibration services. The JSW QVL was current for audit performance dates identified on the vendors list.

b2. Review of Vendor Survey and Audit Reports

The inspectors reviewed a sample of audits performed by JSW for the supply weld material and a sample of providers of commercial calibration services. The NRC staff reviewed the audit plan and checklist for the welding material supplier and the JSW audit report of the welding supplier dated December 14, 2006. Based on the review of these audits no issued were identified related to vendor audits and surveys.

c. Conclusions

The NRC inspectors determined through a review of selected POs, JSW's QVL and external vendor audits to sub-suppliers, that JSW is implementing a process for the control of purchased material, equipment and services consistent with the regulatory requirements of Criterion VII of Appendix B. The NRC inspectors concluded that policies and procedures governing the control, issuance and revision of safety significant POs and JSW's effectiveness in implementing these requirements satisfied the applicable requirements of Appendix B.

4. Test Control

a. Inspection Scope

The NRC inspectors reviewed JSW's QAM and applicable implementing policies and procedures for the control of test programs that are performed to demonstrate that the applicable item will perform satisfactorily in service to assess compliance with the requirements of Criterion XI, "Test Control," of Appendix B; and to Basic Requirement 11, "Test Control," of ASME NQA-1-1994. The NRC inspectors observed the conduct of the tensile testing, drop weight testing, and Charpy V-notch testing of the STP Unit 3 RPV bottom head ring. Additionally, the NRC inspectors reviewed a sample of procedures used to conduct the tensile and drop weight testing. The NRC inspectors compared this limited sample of completed test records to the requirements of the applicable Code, the purchase orders and material specifications.

The procedures, documents, and records reviewed within the scope of the inspection in this area included:

- JSW QAM Section 11, "Test Control," Issue No. 3, Revision 1, dated April 12, 2007.
- Shop Standard Procedure (SSP) SSP-IS-61304 used for setup and conducting tensile testing properties of materials, Revision 13, dated September 1, 2008.

- SSP-IS-61309, used for setup and conducting the drop weight testing properties of materials, Revision 13, dated July 3, 2009.

b. Observations and Findings

The inspectors observed the performance of the tensile testing, drop weight testing, and Charpy V-notch testing performed on the STP Unit 3 RPV bottom head ring on July 9, 2009. The inspector discussed JSW shop standard procedures SSP-IS-61304 and SSP-IS-61309 with JSW engineering staff following observation of the testing to confirm that the tests observed were conducted consistent with the JSW shop standard procedures. While the shop standard procedures were written in Japanese, there were sufficient pictures and diagrams to determine that the explanations provided for the steps required to be performed were accurate and consistent with the observed activities performed by the JSW test technicians. Additionally, the inspectors verified that the testing was conducted consistently with the requirements of ASME SA-370, "Test Methods and Definitions for Mechanical Testing of Steel Products," (identical with ASTM A 370) for the Charpy V-notch and tensile testing, and ASTM E-208, "Standard Test Method for Conducting Drop-Weight Test to Determine Nil-Ductility Transition Temperature of Ferritic Steels," for the drop-weight test. The inspectors verified that the test data was properly recorded in the test records as the measurements were taken. Required prerequisites were satisfied before testing was conducted. The inspectors noted that the instrumentation used was appropriate for the measurements being taken and were properly calibrated. The inspectors also verified that the test technicians were appropriately trained and qualified to conduct the testing.

Based on the tests observed and procedures reviewed, no issues were identified related to test control.

c. Conclusions

Based on the activities inspected as described above, the inspectors concluded that JSW's QAM and implementing procedures satisfied the test control requirements of Criterion XI of Appendix B.

5. Control of Measuring and Test Equipment

a. Inspection Scope

The NRC inspectors reviewed JSW's QAM and applicable implementing policies and procedures for the control of measuring and test equipment used during testing and inspections to assess compliance with the requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B; and to Basic Requirement 12, "Control of Measuring and Test Equipment," of ASME NQA-1-1994. The NRC inspectors reviewed a sample of completed measuring and test equipment (M&TE) calibration records used during testing of the material for the STP Unit 3 RPV bottom head ring. Further, the inspectors observed the use of the measuring and test equipment during the conduct of the tensile testing, drop testing, and Charpy V-notch testing used to determine the physical properties of the STP Unit 3 RPV bottom head ring.

The procedures, documents, and records reviewed within the scope of the inspection in this area included:

- JSW QAM, Section 12, "Control of Measuring and Test Equipment," Issue No. 3, Revision 1, dated April 12, 2007.
- CSP-MS-15010, "Calibration Intervals for Measuring Test Equipment," Revision 20, dated February 18, 2008.
- CSP-MS-22200, "Acceptance and Periodic Calibration of Temperature Measurement Equipment," Revision 35, dated February 28, 2008.
- Calibration records for temperature recorder E0002 and thermocouples EN83, EN84, EN147, and EN103 used in the heat treatment shop while heat treating STP Unit 3 RPV shell flange (JSW job number FN8-3028).
- Calibration records for radiant temperature measuring equipment, TR-630, used in the forging shop for measuring the temperature during heat treatment of the STP Unit 3 RPV bottom head dome (JSW job number FN8-2043).
- Calibration records for Tensile testing machine Serial Number I21054500181 and the attached X-Y recorder used for testing the material specimens from the STP Unit 3 RPV bottom head ring (JSW Job No. FN7-3025).
- Calibration records for the Drop Test machine (No. H15-1726) and temperature measurement equipment (Temperature Recorder L-2, thermocouples L2-1, L2-2, L2-3, and L2-4) used for testing the material specimens from the STP Unit 3 RPV bottom head ring (JSW Job No. FN7-3025).
- Calibration records for the Charpy V-Notch test machine and temperature measurement equipment (Temperature Recorder L-1, thermocouples L1-1) used for testing the material specimens from the STP Unit 3 RPV bottom head ring (JSW Job No. FN7-3025).

b. Observations and Findings

While conducting the tensile, drop weight, and Charpy V-notch testing of the material specimens for the STP Unit 3 bottom head ring, the inspectors observed the proper use of M&TE by JSW test technicians. The inspectors also verified that the M&TE was properly identified with appropriate calibration status and that the range was appropriate for the parameter being measured. Use of the M&TE was controlled consistently with the requirements of Section 12 of the JSW QAM. Calibration due dates as recorded on the stickers attached to the M&TE were verified to be consistent with the requirements of CSP-MS-15010 and CSP-MS-22200.

Review of Section 12 of the JSW QAM and JSW standard procedures CSP-MS-15010 and CSP-MS-22200 determined that the procedures were consistent with the requirements of Criterion XII of Appendix B.

c. Conclusions

Based on the activities observed, and procedures and records reviewed, the inspectors concluded that JSW's control of M&TE met the requirements of Criterion XII of Appendix B.

Further, the inspectors concluded that JSW was effectively implementing the requirements for the use and calibration of M&TE.

6. Nonconforming Materials, Parts, or Components and Corrective Actions

a. Inspection Scope

The NRC inspectors reviewed JSW's QA policies and implementing procedures that govern the control of nonconformances to verify compliance with the requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," of Appendix B. Specifically, the NRC inspectors reviewed JSW QAM, Section 15, "Nonconforming Items/Materials," Revision 3 and Nonconformity Notices (NNs) and Nonconformity Reports (NCRs) initiated during 2008 and 2009.

b. Observations and Findings

Section 15.0 of JSW's QAM defined the measures for the disposition and control of nonconformities during fabrication, manufacturing and associated activities. JSW's nonconformance program was a system that provides measures for the disposition and control of nonconformities to prevent the inadvertent use of nonconforming items or material. JSW's Quality Assurance Group (QAG) Manager had the responsibility and authority for the disposition of nonconformities and the approval of NCRs in response to identified nonconformities from a variety of sources such as (1) JSW shop personnel; (2) NDE, inspection and testing personnel; (3) nonconformities discovered during monitoring, audit and calibration activities; and (4) nonconformities discovered by others, including customers or the authorized nuclear inspector (ANI). Section 15 of the QAM also included provisions for the reporting of defects and possible and subsequent initiation of a 10 CFR Part 21 evaluation in accordance with CSP-QA-1501, as appropriate.

The NRC inspectors noted that in the ten NCRs reviewed: (1) the identified nonconformances were dispositioned in accordance with JSW's QAM; (2) an appropriate technical justification was presented for each disposition; (3) adequate action was taken by JSW in regard to the nonconforming material/item; and (4) the appropriate review and disposition by JSW personnel was included.

c. Conclusions

The NRC inspectors concluded that JSW's program requirements for the control of nonconformances were consistent with the regulatory requirements of Criterion XV of Appendix B. Based on the limited sampled of NCRs reviewed, the NRC inspectors determined that the JSW's QAM was being effectively implemented.

7. Corrective Actions

a. Inspection Scope

The NRC inspectors reviewed JSW's QA policies that govern the control of corrective actions to verify compliance with the requirements of Criterion XVI, "Corrective Action," of Appendix B. Specifically, the NRC inspectors reviewed JSW QAM, Section 16, "Corrective Action," Revision 3, and all three corrective actions (CARs) initiated in 2008 and 2009. These CARs were primarily the result of deficiencies identified by JSW's customers and audit findings.

b. Observations and Findings

Section 16.0 of JSW's QAM defined the measures to generate, track, and close CARs. JSW's corrective action program (CAP) is a closed-loop system that starts with the identification and documentation of a problem and continues through verification of the actions taken to eliminate the identified root cause. JSW's QA Department was responsible for issuing CARs in response to an identified problem from a variety of sources such as product inspection, an internal or external quality system audit, a customer audit, customer product surveillance, or customer returned product. All JSW employees were responsible for identifying real or potential problems and bringing them to the attention of JSW's QA Department.

The NRC inspectors reviewed all three of the CARs that had been generated by JSW during 2008 and 2009. The NRC inspectors noted that all these CARs were primarily the result of deficiencies identified by JSW's customers and audit findings and had been completed by their assigned completion dates.

c. Conclusions

The NRC inspectors concluded that JSW's program requirements for corrective actions were consistent with the regulatory requirements of Criterion XVI of Appendix B. Based on the limited sample of CARs reviewed, the NRC inspectors determined that the JSW QAM was being effectively implemented. The NRC inspectors did not identify any issues in this area.

8. Document Control

a. Inspection Scope

The NRC inspectors reviewed JSW's QA policies and implementing procedures that govern the document control process to verify compliance with the requirements of Criterion VI, "Document Control," of Appendix B. Specifically, the NRC inspectors reviewed the following policies and procedures established by JSW:

- JSW QAM, Section 6, "Document Distribution Control," Issue 3, Revision 3, dated December 17, 2008.
- CSP-SC-15026, "Document Control Procedure for In-Company and Shop Standards," Revision 18, dated February 18, 2008.
- CSP-DC-15027, "Control Procedure for Engineering and Process Control Documents within Section/Shop," Revision 17, dated August 19, 2008.

b. Observations and Findings

Section 6 of JSW's QAM described the processes in place to control the review, approval, distribution and revision of documents. This section stated that In-Company and Shop Standards, and engineering and process control documents should be controlled in accordance with the applicable procedures. In-Company and Shop Standards were the procedures used to perform QA activities. An example of engineering and process control documents were, Shop Drawings, Fabrication Order Sheets (FOS), Material Order Sheets (MOS), Process Control

Check List (PCCL), and Detailed Instructions (DI). CSP-SC-15026 provided guidance for the control of the In-Company and Shop Standards, while CSP-DC-15027 provided guidance for the control of engineering and process control documents.

CSP-SC-15026 established responsibilities for the standards used to perform QA activities. The procedure stated that the manager of the applicable section, shop or group should be responsible for reviewing, approving, distributing, revising and controlling standards used by this section, shop or group. In addition, any changes to the standards should be made in consultation with the QA Manager. Furthermore, the Nuclear Engineering Group (NEG) Manager was responsible for ensuring that any changes made to the standards are reviewed for adequacy. The procedure also stated that any changes made to the standards shall be documented in the Document Control and Revision Status (DCRS) sheet. During the review of a sample of DCRS sheets, the NRC inspectors verified that the sheets contained all the information required by the procedure.

CSP-SC-15026 also described how standards are controlled using different forms. The forms were used for the registration, distribution, revision, and periodic review of standards. The procedure also required that revisions of standards shall be made by the section, shop or group responsible for preparing, approving, and reviewing of the original standard. The NRC inspectors verified that all the forms contained the information required in the procedure. The NRC inspectors also confirmed that revisions of standards were made by the section, shop or group responsible for the original standard.

CSP-DC-15027 described the procedure for receipt, distribution, maintenance and retrieval of engineering and process control documents within sections, shops or groups in order to assure that the latest authorized revisions are distributed to the correct personnel and that an older version of documents is not used. Through discussions with the QA Manager and his staff, the NRC inspectors verified that JSW's personnel were knowledgeable of the document control process and the associated procedural requirements. Furthermore, the NRC inspectors reviewed a sample of documents to confirm that they were appropriately identified and controlled in accordance with procedural requirements.

c. Conclusions

The NRC inspectors concluded that JSW's program requirements for document control were consistent with the regulatory requirements of Criterion VI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspectors also determined that JSW's QAM and associated document control procedures were being effectively implemented. The NRC inspectors did not identify any issues in this area.

9. Training and Qualifications

a. Inspection Scope

The NRC inspectors reviewed JSW's QA policies and implementing procedures that govern the control of training and qualification of personnel performing activities affecting quality to verify compliance with the requirements of Criterion II, "Quality Assurance Program," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspectors reviewed the following policies and procedures established by JSW:

- JSW QAM, Section 2, "Organization," Issue 3, Revision 3, dated December 17, 2008.

- CSP-IS-22240, “Indoctrination, Training and Qualification of Calibration Personnel for Pressure Gage, Temperature Measuring and Industrial Electric Measuring Equipment,” Revision 18, dated March 12, 2009.
- CSP-IS-90001, “Training, Qualification and Certification of Nondestructive Examination Personnel,” Revision 38, dated December 28, 2008.
- CSP-IS-90006, “Training, Qualification and Certification of Inspection and Test Personnel,” Revision 32, dated June 3, 2009.
- CSP-IS-90011, “Training, Qualification and Certification of Quality Assurance Personnel, Audit Personnel, and Receiving Inspection Personnel for Welding Material,” Revision 32, dated April 8, 2008.
- CSP-IS-90012, “Indoctrination, Training and Qualification Program for Personnel Performing Activities Affecting Quality in Fabrication of Nuclear Products,” Revision 28, dated May 7, 2009.

b. Observations and Findings

Section 2.2 of JSW’s QAM described the requirements for training, qualification, and certification of personnel, including auditors, quality assurance, NDE, inspection, and testing personnel.

CSP-IS-90012 provided the guidance to perform training, qualification, and certification; identifies the personnel to be trained, qualified and/or certified; and the activities for which training was required. CSP-IS-90012 also made reference to other procedures that detail the training, qualification, and certification of personnel performing activities affecting quality.

CSP-IS-22240 established training and qualification requirements for calibration personnel for pressure gages and temperature measuring equipment.

CSP-IS-90001 established training and qualification requirements for NDE personnel in accordance with the American Society for Nondestructive Testing Standard ASTM-TC-1A, 2006 Edition or later.

CSP-IS-90006 established training and qualification requirements for inspection and testing personnel in the following areas: dimensional inspection, chemical analysis, and mechanical, metallographic and hydrostatic testing.

The NRC inspectors examined a sample of training and qualification records for of the following personnel: lead auditors; auditors; calibration technicians; NDE; inspection; and testing. The NRC inspectors verified that all personnel performing activities affecting quality had completed the required training and met all the specified requirements in accordance with the applicable procedural requirements. During the review of the training records, the NRC inspectors identified that the Quality Control Group (QCG) manager’s signature in the Annual Evaluation form was missing for one of the lead auditors. After discussing this issue with the QCG manager, the manager initiated a nonconformance report to evaluate the extent of condition and address the issue. Upon further investigation, the QCG manager provided the NRC inspectors

with documentation that showed that the lead auditor had actually participated in the training required for requalification, but that he failed to sign his training record. By the inspections end, the QCG manager had signed the training record for that auditor.

c. Conclusions

The NRC inspectors concluded that JSW's program requirements for training and qualification of personnel performing activities affecting quality were consistent with the regulatory requirements of Criterion II of Appendix B to 10 CFR Part 50. Based on the limited sample of training and qualification records reviewed, the NRC inspectors also determined that JSW's QAM and associated training and qualification procedures were being effectively implemented. The NRC inspectors did not identify any issues in this area.

8. Entrance and Exit Meetings

On July 8, 2009, the NRC inspectors presented the inspection scope during an entrance meeting with JSW Director, Etsuo Murai-san, and other JSW personnel.

On July 10, 2009, the NRC inspectors presented the inspection results during an exit meeting with JSW General Plant Manager and QA Manager, Junichi Taira-san, and other JSW personnel.

See Attachment 1 for a list of attendees for the entrance and exit meetings.

## ATTACHMENT 1

1. LIST OF ENTRANCE AND EXIT MEETINGS ATTENDEES AND KEY PERSONS CONTACTED

(1) Entrance Meeting Attendee July 8, 2009, (2) Exit Meeting Attendee on July 10, 2009, (3) Person Interviewed.

| <b>(1)</b> | <b>(2)</b> | <b>(3)</b> | <b><u>Name, Department/Organization</u></b>                          |
|------------|------------|------------|--|
| X          | X          |            | John Nakoski, NRC  |
| X          | X          |            | Richard McIntyre, NRC  |
| X          | X          |            | Aida Rivera-Varona, NRC  |
| X          | X          |            | Yamir Diaz-Castillo, NRC   |
| X          | X          |            | Jamie Heisserer, NRC   |
| X          | X          |            | A. Kosaka, Deputy Director, NISA                                     |
| X          | X          |            | H. Koizumi, Team Leader, JNES  |
| X          | X          |            | S. Nankawa, Senior Inspector, JNES                                   |
| X          | X          |            | K. Watanabe, Assistant Director, JNES                                |
| X          |            |            | E. Murai, Director, Division Manager of Steel Business Division, JSW |
| X          | X          |            | I. Kurihara, Deputy General Plant Manager, JSW                       |
| X          | X          | X          | J. Taira, General Manager and QA Manager, JSW                        |
| X          | X          | X          | M. Maruoka, Deputy Manager of Quality Assurance Group, JSW           |
| X          | X          | X          | T. Okushita, Deputy Manager of Quality Assurance Group, JSW          |
| X          | X          | X          | T. Hatakeyama, Deputy Manager of Quality Assurance Group, JSW        |
| X          | X          | X          | K. Tanaka, QA Engineer of Quality Assurance Group, JSW               |
| X          | X          | X          | A. Narita, QA Engineer of Quality Assurance Group, JSW               |
| X          | X          |            | T. Nakamura, General Manager of Nuclear Energy Department, JSW       |
| X          | X          |            | T. Sasaki, Manager of Nuclear Energy Group, JSW                      |
| X          | X          |            | N. Yokota, Deputy Manager of Nuclear Energy Group, JSW               |
| X          | X          |            | Y. Shimizu, Deputy Manager of Nuclear Energy Group, JSW              |
| X          | X          |            | T. Yoshida, Engineer of Nuclear Energy Group, JSW                    |
| X          | X          |            | T. Kawa, Engineer of Nuclear Energy Group, JSW                       |
| X          | X          |            | Y. Koyama, Deputy Manager of Nuclear Engineering Group, JSW          |
|            | X          |            | J. Therne, Supplier Surveillance Department, AREVA                   |
| X          | X          |            | J. Kurtik, QA Lead, Vogtle Units 3 and 4, Westinghouse               |
| X          | X          |            | A. Moore, Jr., Sr. QA Engineer, SNC                                  |
| X          | X          |            | N. Yeol HUR, General Manager of Nuclear Quality Control, Doosan      |
| X          | X          |            | T. Walker, Manager Quality, STPNOC                                   |
|            | X          |            | T. Yagi, Manager Quality, IHI  |
| X          | X          |            | O. Kuwano, QA Engineer, Toshiba                                      |
| X          | X          | X          | H. Nimura, Manager of Inspection Group, JSW                          |
| X          | X          |            | T. Sakaguchi, Manager of Inspection Group, JSW                       |
|            | X          |            | K. Sugimoto, Manager of Inspection Group, JSW                        |
| X          | X          |            | Y. Yasumoto, Manager of Quality Control Group, JSW                   |
| X          | X          |            | T. Wada, QA Engineer of Quality Assurance Group, JSW                 |
| X          | X          |            | T. Murakami, Forging and Castings Sales Department, JSW              |

2. INSPECTION PROCEDURES USED

Inspection Procedure 43002, "Routine Inspections of Nuclear Vendors"

Inspection Procedure 36100, "Inspection of 10 CFR Part 21 and 50.55(e) Programs for Reporting Defects and Nonconformance"

**Attachment 2: Additional Information on Components Observed and Inspected by NRC**

| <b>1</b> | <b>Component Name</b>                       | <b>Heat Number</b> | <b>Additional Information</b>  |
|----------|---|--------------------|--|
| FN7-3024 | STP-3 Bottom Head Dome                      | 08D805-1-1         | Customer: IHI Corporation; User: South Texas Project Nuclear Operating Company; IHI PO No.: 63587; IHI Job No.: 5501633; IHI Spec. No.: 016H001; IHI Part No.: 113-A01-021; Material: ASME SA-508, Cl. 3; Project: South Texas Project-3 |
| FN7-3025 | STP-3 Bottom Head Ring                      | 08W104-1-1         | Customer: IHI Corporation; User: South Texas Project Nuclear Operating Company; IHI PO No.: 63587; IHI Job No.: 5501633; IHI Spec. No.: 016H001; IHI Part No.: 113-A01-020; Material: ASME SA-508, Cl. 3; Project: South Texas Project-3 |
| FN7-3026 | STP-3 Shell Course 3                        | 09W35-1-1          | N/A  |
| FN7-3028 | STP-3 Shell flange                          | 09D0476-1-1        | N/A  |
| FN7-3043 | Vogtle-3 Transition Ring                    | 08D1090-1-1        | Customer: Doosan Heavy Industries & Construction Co. LTD.; PO No.: 2007023531; Project: USA AP1000; Item: RV-Transition Ring; Material: SA-508, Gr. 3, Cl. 1; Customer Spec.: AP-MPS21-064   |
| FN7-3045 | Vogtle-3 Steam Generator Channel Head #1    | 08W253-1-1         | N/A  |
| FN7-3045 | Vogtle-3 Steam Generator Channel Head #2    | 08W273-1-1         | N/A  |
| FN7-3046 | Vogtle-3 Steam Generator Tube Sheet         | 08W287-1           | N/A  |
| FN8-2006 | Calvert Cliffs Steam Generator Tube Sheet 4 | 09W90-1-1          | N/A  |
| FN8-2043 | STP-4 Bottom Head Dome                      | 09D639-1-1         | N/A  |
| FN8-2044 | STP-4 Bottom head ring                      | 08W296-1-1         | N/A  |