

November 13, 2009

Mr. Satoshi Kureishi, Manager  
Quality Assurance Section  
Sumitomo Metal Industries, Ltd.  
1, Nishino-Cho  
Higashi-Mukojima  
Amagasaki 660-0856, Japan

SUBJECT: NRC INSPECTION REPORT NO. 99901384/2009-201 (NOTICE OF  
NONCONFORMANCE)

Dear Mr. Kureishi:

On September 28, 2009, through October 2, 2009, U.S. Nuclear Regulatory Commission (NRC) inspectors conducted an inspection at the Sumitomo Metal Industries, Ltd. (Sumitomo), facility in Amagasaki, Japan. The enclosed report presents the details of that inspection.

This limited scope inspection focused on assessing your 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 Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." This NRC inspection report does not constitute NRC endorsement of your facility's overall quality assurance or 10 CFR Part 21 program(s).

During this inspection, the NRC inspectors found that the implementation of your facility's quality assurance program failed to meet certain NRC requirements, discussed in the enclosed notice of nonconformance (NON) and the NRC inspection report. Specifically, during their review of audits and surveillances conducted by Sumitomo to qualify Amagasaki Kinzoku Kogyo Kyogyo Kumiai, a supplier of machining services, the NRC inspectors noted that Sumitomo (1) had not established control of the lubricants used by the supplier and (2) had not verified that the lubricants used by the supplier do not contain any of the prohibited materials established by Electric Power Research Institute Technical Report 016743-V2R1, "Guidelines for PWR Steam Generator Tubing Specifications and Repair," Revision 1, dated April 14, 1999, which was imposed by Sumitomo customers in purchase order specifications. The enclosed NON cites this nonconformance, and the enclosed NRC inspection report describes the circumstances surrounding the nonconformance. The NRC requests that you respond to the nonconformance and that you follow the instructions specified in the enclosed NON when preparing your response.

In accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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 through the NRC's Agencywide Documents Access and Management System (ADAMS) 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 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/**

Juan Peralta, Chief  
Quality and Vendor Branch 1  
Division of Construction Inspection  
& Operational Programs  
Office of New Reactors

Docket No.: 99901384

Enclosures:

1. Notice of Nonconformance
2. Inspection Report No. 99901384/2009-201

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,

Juan Peralta, Chief  
Quality and Vendor Branch 1  
Division of Construction Inspection  
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ADAMS ACCESSION NO: **ML093070450**

<b>OFFICE</b>	NRO/DCIPCQVP	E	NRO/DE/CIB1	E	NRO/DCIP/CQVP	E	NRO/DCIP/CQVP	E
<b>NAME</b>	JJacobson		GMakar		GGalletti		MConcepcion	
<b>DATE</b>	11/ /2009		11/ /2009		11/ /2009		11/ /2009	
<b>OFFICE</b>	NRO/DCIPCQVP	E		E		E		E
<b>NAME</b>	JPeralta							
<b>DATE</b>	11/13/2009							

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## NOTICE OF NONCONFORMANCE

Sumitomo Metal Industries, Ltd.  
1, Nishino-Cho  
Higashi-Mukojima  
Amagasaki 660-0856, Japan

Docket No.: 99901384  
Inspection Report No.: 2009-201

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted on September 28, 2009, through October 2, 2009, of activities performed at Sumitomo Metal Industries, Ltd. (Sumitomo), facilities in Amagasaki, Japan, certain activities were not conducted in accordance with NRC requirements.

- A. Criterion VII, "Control of Purchased Material, Equipment, and Services," 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 "the effectiveness of the control of quality by contractors and subcontractors shall be assessed by the applicant or designee at intervals consistent with the importance, complexity, and quantity of the product or services."

Section 6, "Control of Purchased Material and Services," of the Sumitomo Quality Assurance Manual (QAM), QA3700, Revision 36, dated October 1, 2008, describes the measures established by Sumitomo to ensure that purchased materials and services conform to applicable requirements. Paragraph 6.3.3(2) of the QAM states, in part, that audits or performance assessments of vendors and subcontractors shall be performed to confirm that the source material or services continue to meet the specified requirements.

Purchase Orders 2563401-KA-S2HO2 and 2564001-KA-S3HO2 from Mitsubishi Heavy Industries, Ltd., for steam generator tubes for the San Onofre Nuclear Generating Station required, in part, that the tubes be manufactured in accordance with Electric Power Research Institute (EPRI) Technical Report 016743-V2R1, "Guidelines for PWR Steam Generator Tubing Specifications and Repair," Revision 1, dated April 14, 1999 (EPRI technical report).

Paragraph 5.1 of the EPRI technical report states that "red lead-graphite-mineral oil or molybdenum disulfide lubricants shall not be used, i.e., these materials are prohibited from contact with the tube material at any time. Metallic lead, mercury, cadmium, or other low melting temperature metals or alloys are also prohibited from contact with the tube material at any time."

Contrary to the above, the audits and performance assessments conducted by Sumitomo did not verify that Amagasaki Kinzoku Kogyo Kyogyo Kumiai, a supplier of machining services, had identified and analyzed all materials that come in contact with the steam generator tubes while undergoing cutting, boring, and machining operations. Consequently, Sumitomo has not adequately verified that Amagasaki Kinzoku Kogyo Kyogyo Kumiai implemented controls needed to demonstrate that the prohibited materials listed in the EPRI technical report did not come in contact with the tube material.

The NRC has identified this issue as Nonconformance 99901384/2009-201-01.

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 Juan Peralta, 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. Your 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 noncompliances, 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 through the NRC's Agencywide Documents Access and Management System 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, "Protection of Safeguards Information: Performance Requirements."

Dated this 13th day of November 2009.

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

Docket No.: 99901384

Report No.: 99901384/2009-201

Vendor: Sumitomo Metal Industries, Ltd.  
1, Nishino-Cho  
Higashi-Mukojima  
Amagasaki 660-0856, Japan  
+81-6-6411-7637

Vendor Contact: Mr. Satoshi Kureishi, Manager  
Quality Assurance Section  
[kureishi-sts@sumitomometals.co.jp](mailto:kureishi-sts@sumitomometals.co.jp)

Nuclear Industry: Sumitomo Metal Industries, Ltd. (Sumitomo), is one of the world's manufacturers of stainless steel seamless piping for the thermal and nuclear power, oil and gas, and petroleum and chemicals industries. Currently, Sumitomo is under contract to supply steam generator tubes for the Westinghouse AP1000 design, which is under construction at the Sanmen and Haiyang sites in China. Sumitomo also supplies steam generator tubes to the U.S. commercial nuclear power industry for replacement steam generators, and is expected to supply tubes for AP1000 plants in the U.S. Sumitomo holds an American Society of Mechanical Engineers material organization certification.

Inspection Dates: September 28, 2009–October 2, 2009

Inspection Team: Milton Concepcion NRO/DCIP/CQVP Lead Inspector  
Greg Galletti NRO/DCIP/CQVP  
Jeffrey Jacobson NRO/DCIP/CQVP  
Gregory Makar NRO/DE/CIB1

Approved by: Juan Peralta, Chief  
Quality and Vendor Branch 1  
Division of Construction Inspection  
& Operational Programs  
Office of New Reactors

## EXECUTIVE SUMMARY

Sumitomo Metal Industries, Ltd.  
99901384/2009-201

The purpose of this inspection was to verify the implementation of the Sumitomo Metal Industries, Ltd. (Sumitomo), quality assurance (QA) program and the program under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance." The U.S. Nuclear Regulatory Commission (NRC) inspectors reviewed selected portions of Sumitomo's QA and 10 CFR Part 21 controls established and implemented to meet the regulations set forth in Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Process and Utilization Facilities," and in 10 CFR Part 21, respectively. The NRC conducted the inspection at the Sumitomo facility in Amagasaki, Japan.

The following were the bases for the NRC inspection:

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

The NRC inspectors implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated October 3, 2007, and IP 36100, "Inspection of 10 CFR Part 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance," dated October 3, 2007, while conducting this inspection.

Three inspectors from the Japan Nuclear Energy Safety Organization and one inspector from the Finnish Governmental Authority for the Nuclear Industry observed the inspection. These observation activities are conducted as part of the Vendor Inspection Cooperation Working Group under the auspices of the Multinational Design Evaluation Program.

The results of this inspection are summarized below. This is the first NRC inspection performed at the Sumitomo facility in Amagasaki, Japan.

### 10 CFR Part 21 Program

The NRC inspectors concluded that Sumitomo had established appropriate and effective means for the evaluation and the reporting of defects or of failures to comply consistent with the regulatory requirements of 10 CFR Part 21. No findings of significance were identified.

### Control of Purchased Material, Equipment, and Services

The NRC inspectors issued Nonconformance 99901384/2009-201-01 for Sumitomo's failure to effectively verify that Amagasaki Kinzoku Kogyo Kyogyo Kumiai implemented controls needed to demonstrate that the prohibited materials listed in the EPRI technical report did not come in contact with the tube material.

### Control of Special Processes

The NRC inspectors concluded that Sumitomo's control of special processes was consistent with the regulatory requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50. No findings of significance were identified.

### Test Control

The NRC inspectors concluded that Sumitomo's test control process was consistent with the regulatory requirements of Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50. No findings of significance were identified.

### Control of Measuring and Test Equipment

The NRC inspectors concluded that Sumitomo had established appropriate and effective means to control measuring and test equipment consistent with the regulatory requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50. No findings of significance were identified.

### Handling, Shipping, and Storage

The NRC inspectors concluded that Sumitomo's control of handling, shipping, and storage was consistent with the regulatory requirements of Criterion XIII, "Handling, Storage, and Shipping," of Appendix B to 10 CFR Part 50. No findings of significance were identified.

### Nonconforming Material, Parts, or Components

The NRC inspectors concluded that Sumitomo had established appropriate and effective means to control nonconforming material, parts, or components consistent with the regulatory requirements of Criterion XV, "Nonconforming Material, Parts, or Components," of Appendix B to 10 CFR Part 50. No findings of significance were identified.

### Corrective Action

The NRC inspectors determined that Sumitomo's corrective action program was consistent with the regulatory requirements of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. No findings of significance were identified.



## REPORT DETAILS

### 1. 10 CFR Part 21 Program

#### a. Inspection Scope

The U.S. Nuclear Regulatory Commission (NRC) inspectors reviewed the Sumitomo Metal Industries, Ltd. (Sumitomo),’s Quality Assurance Manual (QAM), QA3700, Revision 36, dated October 1, 2008, and implementing procedures that govern its compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, “Reporting of Defects and Noncompliance.” Specifically, the NRC inspectors reviewed the following policies and procedures established by Sumitomo:

- Sumitomo’s Quality Assurance Manual (QAM), Revision 36, dated October 1, 2008
- Sumitomo’s Quality Procedure (QP) 08-06-01, “Works Standard for Nonconforming Material Control of General Products,” Revision 13, dated July 20, 2009

#### b. Observations and Findings

The NRC inspectors reviewed Sumitomo’s QP 08-06-01. Although the procedure describes the controls for nonconforming materials, the inspectors noted that all nonconformance reports (NCRs) that applied to steam generator (SG) tubes supplied to U.S. customers were screened for applicability under 10 CFR Part 21. QP 08-06-01 also provides guidance on evaluations and on the reporting of actions and time limits for implementing the various steps in the 10 CFR Part 21 process, consistent with regulatory requirements. In general, the NRC inspectors noted that Sumitomo’s QP 08-06-01 contained appropriate guidance for the evaluation and reporting of defects as required by 10 CFR Part 21.

The NRC inspectors discussed Sumitomo’s 10 CFR Part 21 program with the quality assurance (QA) manager and the general manager and asked them how a condition adverse to quality identified in Sumitomo’s nonconformance program would be evaluated under its 10 CFR Part 21 program. The inspectors noted that Sumitomo personnel demonstrated a thorough understanding of the requirements in 10 CFR Part 21 and of the process for identifying deviations or failures to comply and for reporting them to the NRC or to customers or to both, where appropriate.

To verify the implementation of the 10 CFR Part 21 process, the NRC inspectors reviewed each NCR that Sumitomo issued over the last 5 years. The inspectors verified that none of the NCRs reviewed contained issues that Sumitomo should have reported in accordance with 10 CFR Part 21. The NRC inspectors also verified Sumitomo’s compliance with the posting requirements of 10 CFR 21.6, “Posting Requirements,” and observed that Sumitomo had posted notices in different locations within the facility. Each location included a copy of Section 206 of the Energy Reorganization Act of 1974, a notice describing the regulations and procedures related to 10 CFR Part 21, and the names of the individuals to whom reports may be made.

#### c. Conclusions

The NRC inspectors concluded that Sumitomo effectively implements a program for reporting defects and noncompliance consistent with the regulatory requirements of 10 CFR Part 21.

Based on the documentation reviewed, the NRC inspectors determined that Sumitomo was effectively implementing its 10 CFR Part 21 procedure.

2. Control of Purchased Material, Equipment, and Services

a. Inspection Scope

The NRC inspectors reviewed Sumitomo's QA policies and implementing procedures that govern the control of purchased material, equipment, and services to verify compliance with the requirements of Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Process and Utilization Facilities." Specifically, the NRC inspectors reviewed the following policies and procedures established by Sumitomo:

- Sumitomo's QAM, Revision 36, dated October 1, 2008
- QP 05-02-02, "Work Standard for the Control of Purchasing Process," Revision 17, dated April 10, 2009
- Work Standard No. 08-01-05, "Work Standard for Process Approach Control," Revision 1, dated January 15, 2006
- Work Standard No. 08-07-01, "Work Standard for Control of Survey and Audit for Vendor/Subcontractor," Revision 16, dated April 1, 2009
- TSN-5356, "Cleaning Procedure for Alloy 690 SG Tubing," Revision 2, dated April 29, 2008

The NRC inspectors also reviewed a sample of reports from audits and surveillances that Sumitomo conducted of its suppliers to verify the quality of the material, equipment, and services that they supply. In addition, the NRC inspectors reviewed Sumitomo's approved suppliers list (ASL) to verify that vendors listed within the ASL were qualified according to Sumitomo specifications and that the ASL was maintained up to date.

b. Observations and Findings

b.1 Policies and Procedures for Supplier Selection and Control

The NRC inspectors reviewed Section 6, "Control of Purchased Material and Services," of the Sumitomo QAM, which defines the process used to ensure that purchased material, source material, and subcontracted services conform to the applicable requirements of the American Society of Mechanical Engineers (ASME) Code and to customer POs. Section 6.3 of the QAM provides measures for the approval and control of suppliers and describes the process that Sumitomo uses to conduct technical or QA audits, as required.

The NRC inspectors reviewed QP 05-02-02, which provides guidance for the purchasing process related to materials, subcontracting, and outsourcing services at Sumitomo. The procedure also provides guidance on the assessment of suppliers through surveys or audits and provides guidance for the preparation of purchase specifications and subcontract specifications, including the imposition of regulatory requirements for ASME Code, Section III, products.

The NRC inspectors learned that before 2003, materials were melted, refined, and rolled at the Sumitomo Amagasaki facilities. In 2003, Sumitomo shut down its electric furnace and exhausted its source material on different projects. In 2006, Sumitomo entered into an agreement with Wakayama Steel Works, a Sumitomo subsidiary, for the supply of source material. The NRC inspectors also learned that, after the billets are produced at Wakayama Steel Works, they are sent to Amagasaki Kinzoku Kogyo Kyogyo Kumiai, a supplier of machining services, to be cut, bored, and machined. Once the billets are machined to Sumitomo specifications, they are transported to Sumitomo facilities for the manufacture of SG tubes.

## b.2 Purchase Order Review

The NRC inspectors reviewed procurement controls and sampled POs to verify compliance with the QAM requirements. Specifically, the inspectors reviewed Purchase Orders (POs) 2563401-KA-S2HO2 and 2563401-KA-S2HO2 from Mitsubishi Heavy Industries, Ltd. (MHI), issued February 2005, for the purchase of approximately 20,000 Alloy 690 SG tubes for two SGs supplied to the San Onofre Nuclear Generating Station (SONGS). These POs invoked ASME Code, Section II, SB-163, including supplementary requirements S1 and S2; ASME Code, Section III, Subsection NB; and Electric Power Research Institute (EPRI) Technical Report (TR)-016743-V2R1, "Guidelines for PWR Steam Generator Tubing Specifications and Repair," Revision 1, dated April 14, 1999 (EPRI technical report). The NRC inspectors noted that paragraph 5.1 of the EPRI technical report contains requirements on the use of certain "prohibited materials" in the SG tube manufacturing process. The list of prohibited materials includes red lead-graphite-mineral oil; molybdenum disulfide lubricants; and metallic lead, mercury, cadmium, or other low-melting-temperature metals. The EPRI technical report also states that these materials should not be allowed to come in contact with the tube material at any time during the manufacturing process. Furthermore, the EPRI technical report contains another list of "detrimental materials" that can be used during manufacturing but for which there are limits on maximum concentrations. If such detrimental materials are used in the manufacturing process in excess of the stated maximum concentration limits, the EPRI technical report requires that the resulting tube material be tested to verify that the detrimental materials have been removed before shipping.

The NRC inspectors also reviewed Sumitomo's cleaning procedure TSN-5356, which it had developed to address the EPRI requirements for the SG tubes that are currently being supplied for Westinghouse AP1000 components. The NRC inspectors noted that TSN-5356 required that a cleanliness verification test (swab test) be performed during the manufacturing process. The swab test included an analysis for multiple detrimental materials, including fluoride, chloride, sulfate, sodium, and silica. The NRC inspectors verified that the cleanliness test requirements were comprehensive enough to detect any of the detrimental materials previously identified as having been used in the manufacturing process. Additionally, the NRC inspectors verified that Sumitomo had identified all materials used in the manufacturing process and had performed a laboratory analysis of the content of each material. The NRC inspectors noted that, for the SONGS POs, 49 different materials were identified (lubricants, markers, and plastic liners), each of which underwent laboratory analysis. Of the 49 different materials, 19 were identified as having concentrations of detrimental materials (chloride, fluoride, sulfur, phosphorus, mercury, aluminum, and copper) in excess of limits given in the EPRI technical report. The NRC inspectors confirmed that Sumitomo had performed a swab test of the tubes before thermal treatment to verify that these detrimental materials had been removed. The resultant swab was then analyzed for the presence of any detrimental materials. No issues

were identified with the testing performed by Sumitomo.

Although the NRC inspectors determined that Sumitomo was providing a sufficient level of control for the tube material at its facility, they noted that Sumitomo was not applying a commensurate level of control for the tube material while it was being processed at Amagasaki Kinzoku Kogyo Kyogyo Kumiai. After discussions with Sumitomo personnel, the inspectors determined that Sumitomo had not identified all the materials that Amagasaki Kinzoku Kogyo Kyogyo Kumiai used during machining operations and had not analyzed the prohibited materials listed in the EPRI technical report at the machining shop. The NRC inspectors confirmed that the audits and performance assessments conducted by Sumitomo did not verify that Amagasaki Kinzoku Kogyo Kyogyo Kumiai had identified and analyzed all materials that come in contact with the steam generator tubes while undergoing cutting, boring, and machining operations. Although the cleanliness verification test referenced above would verify that any detrimental materials had been removed, the testing would not verify whether or not Amagasaki Kinzoku Kogyo Kyogyo Kumiai had used any of the prohibited materials. The NRC has identified this deficiency as Nonconformance 99901384/2009-201-01.

### b.3 Supplier Audit and Surveillance Reports

The NRC inspectors reviewed a sample of external audits and surveillances to verify Sumitomo's approval process of source material suppliers and subcontracting services. The NRC inspectors noted that the audits and annual assessments reviewed were adequately documented and provided evidence of Sumitomo's compliance with QA requirements. The NRC inspectors also verified that audit checklists were prepared and completed for the audit and contained sufficient objective evidence to support the conclusions made by Sumitomo. No issues were identified.

### b.4 Maintenance of the Approved Supplier List

The NRC inspectors reviewed Section 6.3 of the QAM, which defines the controls for the maintenance, distribution, and update of the ASL. The inspectors noted that the QA section manager is responsible for maintaining, distributing, updating, reviewing the results of audits and assessments, and approving the addition and deletion of suppliers to and from the ASL. The NRC inspectors also reviewed Sumitomo's ASL and noted that suppliers listed on the ASL remained in good standing. No issues were identified.

## c. Conclusions

With the exception of the nonconformance cited above, the NRC inspectors concluded that Sumitomo adequately approved and controlled activities performed by the supplier of source materials and subcontracted services consistent with the regulatory requirements of Criterion VII of Appendix B to 10 CFR Part 50. Based on the documentation reviewed, the NRC inspectors determined that Sumitomo was effectively implementing its QAM and the associated procedures.

## 3. Control of Special Processes

### a. Inspection Scope

The NRC inspectors reviewed Sumitomo's QAM and implementing procedures that govern the control of special processes, including heat treatment, nondestructive examination (NDE),

mechanical testing, metallographic testing, and chemical analysis. The inspectors also reviewed implementing procedures associated with these QA requirements for heat treatment, NDE, mechanical testing, and metallographic testing to verify compliance with Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50. The review included the following Sumitomo documents:

- Sumitomo's QAM, Revision 36, dated October 1, 2008
- TSN-5420, "Hydrostatic Test Procedure for Alloy 690 SG Tubing," Revision 0, dated November 28, 2007
- TSN-5425, "Chemical Analysis Procedure for Alloy 690 SG," Revision 2, dated January 28, 2008
- TSN-5607, "Final Mill Anneal Procedure for Alloy 690 SG Tubing," Revision 0, dated April 29, 2009
- TSN-5611, "Thermal Treatment Procedure for Alloy 690 SG Tubing," Revision 0, dated April 29, 2009
- TSN-5612, "Eddy Current Procedure with Encircling Coil Method for Alloy 690 SG Tubing," Revision 0, dated May 7, 2009
- TSN-5613, "Ultrasonic Examination Procedure for Alloy 690 SG Tubing," Revision 0, dated May 7, 2009
- TSN-5614, "Continuous Ultrasonic Wall Thickness Measurement Test Procedure for Alloy 690 SG Tubing," Revision 0, dated May 7, 2009
- TSN-5616, "Visual and Tactile Examination Procedure for Alloy 690 SG Tubing," Revision 0, dated May 7, 2009
- TSN-5622, "Eddy Current Examination Procedure with Inner Coil Method Procedure for Alloy 690 SG Tubing," Revision 1, dated September 2, 2009
- a sample of test reports associated with the procedures listed above
- calibration records

The NRC inspectors also reviewed sections of the QAM and implementing procedures related to the training and qualification of personnel, procurement of source material and services, and inspection and testing.

b. Observations and Findings

b.1 Heat Treatment

The NRC inspectors reviewed procedures for final mill annealing and thermal treatment for the Alloy 690 tubes in production and noted that they were consistent with the requirements of Section III of the ASME Code. In addition, the NRC inspectors verified that the procedures met the EPRI TR-016743-V2R1 guidelines for procurement specifications for Alloy 690 SG tubing.

The EPRI technical report addresses details that are believed to optimize corrosion resistance but are not addressed in the ASME Code, such as the thermal treatment.

The NRC inspectors observed final mill annealing and stress relief thermal treatment of bent tubes and discussed the implementation of the associated procedures with the furnace operators and QA personnel. During these observations, the NRC inspectors confirmed that the heat treatment requirements and records were included in the shop work instructions (travelers). The NRC inspectors also verified selected parameters (temperature, pressure, and hydrogen dew point) to confirm that the displayed values were consistent with the procedures and were being continuously recorded where required. The NRC inspectors examined calibration stickers on chart recorders and gauges and later examined the calibration records for a group of thermocouples in the calibration center. In addition, the NRC inspectors confirmed that the furnace operators were qualified for the work in accordance with Sumitomo's QA program.

b.2 Nondestructive Examination

The NRC inspectors examined procedures for eddy current testing, ultrasonic testing, and visual testing. These NDE methods are used in combination to measure tube wall thickness and to detect surface and subsurface flaws and imperfections. For all of the parameters examined, the procedures met or exceeded the EPRI tube specification guidelines and thereby the requirements of Section III of the ASME Code. Sumitomo performs three types of eddy current tests. In the first test, an internal probe on the straight tubing is used to measure the eddy current signal-to-noise (S/N) ratio. In the second test, an encircling probe on the straight tubing is used to detect flaws in accordance with Section III of the ASME Code. In the third test, an internal probe on the bent tubing is used to detect flaws following hydrostatic testing.

The NRC inspectors observed the eddy current testing that personnel performed in the shop to measure the S/N ratio of the tubes before they were bent. An adequate S/N ratio is necessary for the effective preservice and inservice eddy current testing of the completed tubes. The NRC inspectors confirmed that the specified calibration standard was installed in the test facility and that the through-wall holes were detected. In addition, the NRC inspectors confirmed that the personnel performing the test and data analysis were properly certified.

Section 4, "Test Control," of this inspection report provides further inspection details associated with mechanical testing, metallographic testing, and chemical analysis.

c. Conclusions

The NRC inspectors concluded that Sumitomo's program requirements for control of special processes are 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 inspectors concluded that qualified personnel were using qualified equipment and processes to effectively implement Sumitomo's QAM and the associated fabrication and special process procedures.

4. Test Control

a. Inspection Scope

The NRC inspectors reviewed Sumitomo's QA program commitments and controls for test programs designed to demonstrate that items will perform satisfactorily in service to assess

compliance with the requirements of Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspectors reviewed the following Sumitomo policies and procedures:

- Sumitomo's QAM, Revision 36, dated October 1, 2008
- TSN-5055, "Prohibited and Detrimental Material Control Procedure for Alloy 690 SG Tubing," Revision 0, dated June 7, 2005
- TSN-5056, "Cleaning Procedure for Alloy 690 SG Tubing," Revision 2, dated September 26, 2005
- TSN-5075, "Mechanical Test Procedure for Alloy 690 SG Tubing," Revision 0, dated June 28, 2005
- TSN-5076, "Micro-Graphic Test Procedure for Alloy 690 SG Tubing," Revision 0, dated February 18, 2006
- TSN-5402, "Manufacturing, Inspection, and Test Plan of Production for Alloy 690 SG Tubing," Revision 1, dated June 12, 2008
- TSN-5413, "Ultrasonic Evaluation Procedure for Alloy 690 SG Tubing," Revision 2, dated February 15, 2008
- TSN-5615, "Continuous OD Measurement for Alloy 690 SG Tubing," Revision 0, dated May 7, 2009
- TSN-5620, "Hydrostatic Test Pressure Procedure for Alloy 690 SG Tubing," Revision 0, dated June 11, 2009
- TSN-5621, "Dimensional Examination Procedure for Alloy 690 SG Tubing," Revision 1, dated August 6, 2009

The NRC inspectors also observed in-process testing activities and reviewed a sample of completed test records associated with the SG tube fabrication and compared them with the requirements of the applicable POs and customer specifications.

b. Observations and Findings

Section 9, "Test and Inspection," of Sumitomo's QAM establishes the responsibilities and requirements for the control of all testing activities. The program ensures that testing demonstrates that an item will perform according to established criteria. Specific work instructions (TSNs) and activities described in the travelers supplement Sumitomo's QAM for test control.

b.1 In-Process Test Control

The NRC inspectors reviewed and evaluated test procedures and observed the performance of testing activities associated with mechanical, chemical, hydrostatic, ultrasonic, eddy current, and visual testing activities that the Sumitomo staff performed on SG tubes in production. Specifically, the NRC inspectors observed that Sumitomo staff adequately verified and

documented that (1) all test prerequisites, including equipment, materials, and test conditions (e.g., sample condition, hydrostatic pressure, ambient lighting, and test equipment suitability), necessary for testing were met; (2) examinations were performed and relevant examination information was recorded on the applicable test control record, including the specific test procedure used, all test and calibration equipment used, and final test results; and (3) confirmation that the test fixture was correct, test instrumentation was adequate in terms of range and precision, test procedures used were reviewed, and acceptance criteria were adequately identified.

#### (1) Mechanical Testing

The NRC inspectors reviewed procedures for tensile testing and confirmed that the requirements for yield strength, tensile strength, and elongation meet the requirements for Alloy 690 tubing in Section II of the ASME Code and in the more restrictive EPRI technical report. The NRC inspectors also reviewed test procedures for hydrostatic testing and for the surface roughness testing of the internal and external surfaces of the tubing. Through the review of documentation and interviews with Sumitomo responsible personnel, the NRC inspectors confirmed that the hydrostatic test pressure and time were consistent with the requirements in Section II of the ASME Code and that the procedures included EPRI water-quality requirements and post-test drying.

The NRC inspectors observed room-temperature tensile testing, tube-end flare testing, surface roughness testing, and hydrostatic testing. During the testing, the NRC inspectors discussed implementation of the associated procedures with the test personnel. Based on the observations and interactions with Sumitomo personnel, the NRC inspectors concluded that the test personnel performed the testing according to the procedures using properly calibrated instruments and that the test results met the requirements listed in the procedures.

#### (2) Metallography and Chemical Analysis

The NRC inspectors reviewed procedures for chemical analysis and metallography (grain size, carbide distribution, and inclusions). The NRC inspectors determined that the specified chemistry was consistent with the EPRI technical report and was more restrictive for some elements. Hence, the chemistry was also more restrictive than the requirements in Section II of the ASME Code. The NRC inspectors also confirmed that the chemical analysis was performed in accordance with the appropriate American Society for Testing and Materials (ASTM) standards. The metallography procedures included requirements that were consistent with the EPRI technical report but were not addressed in the ASME Code, such as grain size and carbide distribution.

The NRC inspectors observed metallographic examination using optical and scanning electron microscopes. The samples were evaluated according to ASTM procedures, EPRI guidelines, or reference photographs in the procedures, as appropriate. The NRC inspectors also interviewed the laboratory technician on the implementation of the associated procedures. No issues were identified in this area.

#### b.2 Test Records

The NRC inspectors reviewed several in-process and completed test record files, including ladle and product chemical analyses, mechanical tensile tests, and micrographic testing. The NRC



inspectors confirmed that all test records were complete and included the required documentation consistent with the test procedure requirements, such as the instrumentation equipment sheet, any notice of discrepancy, the inclusion of all test data, the certification test report, and the certification of conformance. Based on the objective evidence of completed test records, the NRC inspectors found Sumitomo's test record control to be adequate and effectively implemented. No issues were identified in this area.

### b.3 Training and Qualification

The NRC inspectors observed test personnel performing test activities and discussed issues with them related to the test procedures and the tests that they were conducting and determined that the test personnel were knowledgeable of their test responsibilities. The NRC inspectors reviewed a sample of qualification records of the vendor's test technicians and project engineers and confirmed that the Sumitomo staff designated to perform various test functions were qualified to perform those designated activities. Specifically, the NRC inspectors verified that the Sumitomo personnel (1) were cognizant of the requirements for performance of the tests in accordance with written test instructions, (2) verified the adequacy of the test instrumentation used for each test before conducting the test, (3) recorded test data in accordance with written instructions, and (4) followed the test control procedures and material route sheets, including obtaining proper quality control oversight, as required. The NRC inspectors identified no findings in this area.

### c. Conclusions

The NRC inspectors concluded that Sumitomo's program requirements for test control complied 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 inspectors determined that Sumitomo was effectively implementing its QAM and the associated test control procedures.

## 5. Control of Measuring and Test Equipment

### a. Inspection Scope

The NRC inspectors reviewed Sumitomo's QA policies and procedures to verify compliance with Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspectors reviewed the following Sumitomo procedures and calibration records and performed the following activities:

- Sumitomo's QAM, Revision 36, dated October 1, 2008
- QP 10102, "Manual for Specifying Calibration Cycle for Equipment Subjected to ASME," Revision 10, dated November 30, 2006
- Roughness Calibration Block No. 1083 Record—Mitutoyo HCQ06-70327, dated February 24, 2006
- Calibration Record No. T08KB4—National Institute Nippon Kaiji Kyokai—Shimadzu UH-F500KNI Tensile Test Apparatus

The NRC inspectors also reviewed a sample of equipment calibration records and the

disposition methods for out-of-tolerance instrumentation to verify compliance with the requirements for the control of measuring and test equipment (M&TE).

b. Observations and Findings

Section 10 of Sumitomo's QAM process establishes program requirements for the control and calibration of M&TE. The QAM provides controls to ensure that calibrations are conducted against known reference standards traceable to national standards or to industrial standards. Calibration records must capture all calibration results, and calibration labels must be attached to all instruments after calibration. Section 10.2 states that test personnel must ensure that instrumentation has not exceeded its defined calibration period before it is used and must perform periodic checks in accordance with work standards or shop procedures. In addition, out-of-calibration instrumentation must be tagged as such, and a review of products assessed with the instrument since the last assessment must be conducted.

Sumitomo's QP 10102 included a provision for maintaining a detailed equipment calibration history, including recalibration requirements. The procedure also provided guidance for calibration frequency and for the maintenance of the identification and calibration status using equipment marking or records traceable to the equipment. The NRC inspectors confirmed that Sumitomo established and implemented procedures to ensure adequate control of the calibration and adjustment of M&TE.

The NRC inspectors observed activities in the calibration laboratory. The NRC inspectors selected a representative sample of M&TE identified on test records, travelers, and instrument equipment lists for in-process job orders and reviewed their calibration records for consistency and compliance to established procedures. The NRC inspectors verified that the laboratory M&TE were calibrated using procedures traceable to known industry standards and traceable to certified equipment that has known valid relationships to nationally recognized standards. The NRC inspectors also verified that the M&TE selected as a sample had appropriate calibration stickers and current calibration dates, including calibration due dates, and that the records were available for review. Calibration records indicated that calibration procedures were followed; these records included information on as-found or as-left conditions, the accuracy required, the date of calibration, and the due date for recalibration. The NRC inspectors also reviewed the process for identifying and segregating equipment that is out of calibration or beyond repair. The NRC inspectors verified that Sumitomo maintained adequate identification and segregation of out-of-tolerance equipment, including the formal documentation of notice of discrepancies and the subsequent evaluation of products that may have been affected by use of such discrepant equipment. The NRC inspectors also verified, through observation of ongoing calibration activities, that M&TE personnel who performed equipment calibration activities

properly documented results and adequately labeled, handled, and stored calibration equipment. The NRC inspectors identified no findings in this area.

c. Conclusions

The NRC inspectors concluded that Sumitomo's program requirements for control of M&TE were consistent with the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Based on the limited sample of calibration records reviewed, evaluation of controls established within the vendor's calibration laboratory, and observation of a sample of testing activities, the NRC inspectors determined that Sumitomo was effectively implementing its QAM and the associated M&TE procedures.

6. Handling, Storage, and Shipping

a. Inspection Scope

The NRC inspectors reviewed Sumitomo's QA policies and implementing procedures that govern inspection activities to verify compliance with the requirements of Criterion XIII, "Handling, Storage, and Shipping," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspectors reviewed the following policies and procedures established by Sumitomo:

- Sumitomo's QAM, Revision 36, dated October 1, 2008
- TSN-5623, "Packing Procedure for Alloy 690 SG Tubing," Revision 0, dated August 12, 2009
- TSN-5605, "Prohibited and Detrimental Materials Procedure for Alloy 690 SG Tubing," Revision 1, dated August 6, 2009

The NRC inspectors also reviewed a sample of travelers and observed handling, storage, and shipping activities at the Sumitomo manufacturing facility to verify effective implementation of such requirements.

b. Observations and Findings

Section 14 of Sumitomo's QAM addresses provisions for the handling, storage, shipping, and preservation of components manufactured by Sumitomo. The handling and packing of SG tubes is performed in accordance with the repeat order sheet specifications and work standards. Material is stored in specified areas that are to be kept clean and well arranged to prevent material or product deterioration. A QA manager prepares a shipping permit, which is issued once the material is found in compliance with requirements of Section III of the ASME Code.

The NRC inspectors verified that Sumitomo had developed and implemented procedures and process controls to ensure the proper handling, storage, and shipping of materials. The NRC inspectors reviewed a sample of work orders, travelers, and check sheets that Sumitomo prepared to control such activities. These documents specify steps for handling SG tubes throughout the production process and for preparing final shipping packages. These documents also include provisions for the in-process movement of materials, packaging, use of desiccants, preparation of shipment containers, exclusion of foreign materials, labeling, and shipment. Additionally, the NRC inspectors confirmed that Sumitomo provided controls to ensure that proper attire is available and worn, as necessary, during the handling of materials and that prohibited items are identified and restricted from locations where SG tube material is handled and stored.

The NRC inspectors verified that Sumitomo had controls in place to monitor and maintain humidity, temperature, and particulate filtration, within prescribed limits. Sumitomo maintained daily records of these parameters. Operators are identified and qualified to perform activities. The NRC inspectors confirmed that Sumitomo provided special equipment (e.g., cloths, acetone, carrying poles, and support racks) for the proper handling of SG tubes during production and verified that operators of special handling equipment are experienced and trained in the use of the equipment. The NRC inspectors also confirmed that Sumitomo

maintained adequate configuration control of the products, including detailed storage and arrangement facilities, and computer-assisted material tracking. The NRC inspectors noted that operators track any defective or inadequate tubes using a unique barcode identification and segregate and destroy (e.g., cut into lengths) these tubes to preclude their inadvertent use. The NRC inspectors identified no findings in this area.

c. Conclusions

The NRC inspectors concluded that Sumitomo's program requirements for handling, storage, and shipping are consistent with the regulatory requirements of Criterion XIII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed and on observation of ongoing production activities at the Sumitomo fabrication facilities, the NRC inspectors also determined that Sumitomo was effectively implementing its QAM and the associated handling, storage, and shipping procedures.

7. Nonconforming Materials, Parts or Components, and Corrective Action

a. Inspection Scope

The NRC inspectors reviewed Sumitomo'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 to 10 CFR Part 50. In addition, the NRC inspectors reviewed the control of corrective actions to verify compliance with the requirements of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspectors reviewed the following policies and procedures established by Sumitomo:

- Section 12, "Nonconformance Control," of Sumitomo's QAM, Revision 35, dated October 1, 2008
- QP 08-06-01, "Work Standard for Nonconformance Product and Abnormal Product Control," Revision 13, dated July 20, 2009
- QP 08-06-03, "Work Standard for Corrective Action and Preventive Action Control," Revision 9, dated July 20, 2009

The NRC inspectors also reviewed a sample of NCRs initiated during the past 5 years.

b. Observations and Findings

Section 12 of Sumitomo's QAM defines the measures for the identification, documentation, and disposition of unacceptable source material or material that does not conform to the requirements of the material specification. The QAM also defines the responsibilities and authorities for the disposition of nonconformances in these materials.

QP 08-06-01 governs the use of NCRs at Sumitomo. The NRC inspectors reviewed all NCRs generated by Sumitomo over the last 5 years that were applicable to material destined for U.S. facilities and selected four NCRs for a more detailed technical review. Table 1 provides a summary of the four NCRs.

**Table 1 Nonconformance Report Summaries**

<b>NCR No.</b>	<b>Date</b>	<b>Customer</b>	<b>Issue Identified</b>
N08C-02	2/26/08	Doosan/Westinghouse	The ovality of tubes after bending was not to specification during the plant procedure qualification process.
N06C-03	8/25/06	MHI/SONGS	The customer identified an indication on eddy current testing data.
N05S-1	3/9/05	AREVA/St. Lucie Nuclear Plant	The customer review of the certified material test report identified that the increase in yield strength after the tube-straightening process was out of specification.
N06C-05	10/31/06	MHI/SONGS	Sumitomo failed to separate tubes into specific lots after a power outage caused a fluctuation in the furnace temperature for the final mill annealing.

The NRC inspectors also reviewed four recent audits of Sumitomo by its customers to ensure that Sumitomo had taken effective corrective actions to the identified audit findings. Table 2 provides a summary of the audit reports and their findings.

**Table 2 Audit Report Summaries and Findings**

<b>Auditing Organization</b>	<b>Date of Audit</b>	<b>Findings</b>
Doosan	6/30/09	(1) 10 CFR Part 21 procedures and posting (2) Procurement document control (3) Final mill annealing
AREVA	11/27/07	(1) Description of Appendix B to 10 CFR Part 50 and of 10 CFR Part 21 in the QAM
ASME	1/10/08	(1) Insufficient qualification records for the QA auditor (2) Editorial errors in the QAM
ASME	3/19/08	(1) Not using calibrated M&TE to measure reference notches in reference standards used in the calibration of ultrasonic and eddy current test equipment

Lastly, the NRC inspectors reviewed the measures employed by Sumitomo to ensure that nonconforming material was appropriately identified and segregated. The NRC inspectors also observed the area on the shop floor where nonconforming material (i.e., scrapped tubes) was being kept and determined that the material was appropriately segregated. No findings or adverse observations were identified during the inspection.

The NRC inspectors verified the implementation of corrective actions for the NCRs selected as samples for review. The NRC inspectors confirmed that Sumitomo had taken the appropriate corrective actions for each of the findings identified in the four audit reports reviewed. For each NCR reviewed, the NRC inspectors verified that Sumitomo had specified the appropriate corrective actions; had appropriately considered the extent of the identified condition(s); and had taken corrective actions, including the scrapping of tubes when warranted, to prevent the recurrence for significant conditions adverse to quality. No issues were identified.

c. Conclusions

The NRC inspectors concluded that Sumitomo's program requirements for the control of nonconformances are consistent with the regulatory requirements of Criterion XV and Criterion XVI of Appendix B to 10 CFR Part 50. Based on the limited sampled of NCRs reviewed, the NRC inspectors determined that Sumitomo was effectively implementing its QAM and the associated procedures.

8. Entrance and Exit Meetings

On September 28, 2009, the NRC inspectors discussed the scope of the inspection with Mr. Toshihiro Imoto, Sumitomo's Production Manager; Mr. Satoshi Kureishi, Sumitomo's QA Manager; and other Sumitomo staff.

On October 2, 2009, the NRC inspectors presented the inspection results and observations during an exit meeting with Mr. Toshihiro Imoto, Mr. Satoshi Kureishi, and other Sumitomo staff.

## ATTACHMENT

### 1. PERSONS CONTACTED

Name	Title	Entrance	Exit	Interviewed
Mr. Imoto	General Manager	X	X	X
Mr. Kureishi	Quality Assurance Manager	X	X	X
Mr. Matsuda	Quality Assurance Specialist	X	X	X
Mr. Hatasue	Supervisor, Technology Management Section (Laboratory)	X	X	-
Ms. Nakanishi	Assistant Supervisor, Technology Management Section (Laboratory)	-	-	X
Mr. Yoshihiro	Assistant Manager, Quality Assurance Section	X	X	-
Mr. Suzuki	QA Specialist, Quality Assurance Section	X	X	-
Ms. Nada	Technician, Cold Worked Tube Making Plant	-	-	X
Mr. Wakasa	Technician, Cold Worked Tube Making Plant	-	-	X
Mr. Sumi	Assistant Supervisor, Cold Worked Tube Making Plant	-	-	X
Mr. Watanabe	Technician, Cold Worked Tube Making Plant	-	-	X
Ms. Ikeda	Technician, Cold Worked Tube Making Plant	-	-	X
Mr. Doumura	Deputy Section Manager, Maintenance Section	-	-	X
Mr. Yamashita	Deputy Section Manager, Quality Assurance Section	X	X	-
Mr. Yoshino	Assistant Manager, Technology Management Section	-	-	X
Mr. Suzuhigashi	Section Manager, Technology Management Section (Laboratory)	-	-	X

### 2. INSPECTION PROCEDURES USED

Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated October 3, 2007

IP 36100, "Inspection of 10 CFR Part 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Nonconformance," dated October 3, 2007

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Status</u>	<u>Type</u>	<u>Description</u>
99901384/2009-201-01	Open	Nonconformance	Criterion VII