UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 5, 2006

Mr. Thomas Roide, Quality Manager
PRIME Measurement Products
900 S. Turnbull Canyon Rd
P.O. Box 1882
City of Industry, CA 91749

SUBJECT: NUCLEAR REGULATORY COMMISSION INSPECTION REPORT 99901360/2006-201

Dear Mr. Roide:

On July 25 through July 27, 2006, the Nuclear Regulatory Commission (NRC) inspection team conducted an inspection of your facility at City of Industry, California. At the conclusion of the inspection, Mr. Bill Rogers of my staff held an exit meeting and discussed the preliminary inspection findings with you and your staff. The enclosed report presents the details of this inspection.

This was a limited-scope inspection, which focused on assessing your compliance with the provisions of Title 10 of the *Code of Federal Regulations* (CFR) Part 21, "Reporting of Defects and Noncompliance," and selected portions of 10 CFR Part 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," and 10 CFR 50.49, "Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Plants," as it relates to environmentally qualified gauge pressure and differential pressure transmitters provided to the nuclear industry. This NRC inspection report is not intended to endorse or approve your overall quality assurance or 10 CFR Part 21 programs. This inspection consisted of review of procedures and representative records, interviews with personnel, examination of certain components, and observations by the NRC inspectors. The inspectors reviewed selected portions of your quality assurance program and its implementation.

During this inspection, it was found that the implementation of the PRIME Measurement Instruments (PRIME) quality assurance program failed to meet certain NRC requirements in several areas, including documentation of processes and controls and design verification, which were identified as nonconformances. In addition, the PRIME procedure adopted pursuant to 10 CFR Part 21 did not contain all of the specific provisions required to be procedurealized by 10 CFR Part 21, which was identified as a violation.

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

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC Public Document Room (PDR).

Sincerely,

(/RA by M. E. Mayfield)

Michael E. Mayfield, Director
Division of Engineering
Office of Nuclear Reactor Regulation

Docket No. 99901360

Enclosures:
1. Notice of Nonconformance
2. Notice of Violation
3. Inspection Report 99901360/2006-201

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NOTICE OF NONCONFORMANCE

PRIME Measurement Products
City of Industry, California

Docket Number 9991360
Report Number 9991360/2006-201

Based on the results of a Nuclear Regulatory Commission (NRC) inspection of activities supporting safety-related purchase orders conducted on July 25 -27, 2006, it appears that some of your activities were not conducted in accordance with the NRC requirements summarized below :

(1) Criterion V, “Instructions Procedures and Drawings," of 10 CFR Part 50, Appendix B, states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.”

Contrary to the above, PRIME Measurement Products (PRIME) manufactured pressure and differential pressure transmitter connector assemblies, supplied to NRC licensees for use in applications that required components to be environmentally qualified in accordance with 10 CFR 50.49, without appropriate documented manufacturing instructions or quality control inspection criteria.

This issue is identified as Nonconformance 99901360/2006-201-01.

(2) Criterion III, “Design Control," of 10 CFR Part 50, Appendix B, states, in part, that measures shall be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems and components. Criterion III also requires, in part, that design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. Where a test program is used to verify the adequacy of a specific design feature,...it shall include suitable qualifications testing of a prototype unit under the most adverse design conditions. Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design.

Contrary to the above, PRIME had not demonstrated the environmental qualification, a required design verification process, of Barton Models 763, 763A, and 764 transmitter connector assemblies, without heat-shrink sleeving over the individual external lead wires extending into the epoxy potting material, manufactured subsequent to a post-May 1982 design change. The transmitter connector assemblies were supplied to NRC licensees for use in applications that required components to be environmentally qualified in accordance with 10 CFR 50.49.

This issue is identified as Nonconformance 99901360/2006-201-02.

ENCLOSURE 1

Please provide a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Chief, Quality and Vendor Branch B, Division of Engineering, Office of Nuclear Reactor Regulation, within 30 days of the date of the letter transmitting this Notice of Nonconformance. This reply should be clearly marked as a "Reply to Notice of Nonconformance" and should include for each nonconformance: (1) the reason for the nonconformance, or if contested, the basis for disputing the nonconformance, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further noncompliances and (4) the dates your corrective action will be completed. Where good cause is shown, consideration will be given extending the response time.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system, Agency-wide Documents Access and Management System (ADAMS), 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. ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. 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 2.790(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 5th day of October, 2006.

NOTICE OF VIOLATION

PRIME Measurement Products
City of Industry, California

Docket No. 99901360
Report Number 9991360/2006-201

During an NRC inspection of Prime Measurement Products (PRIME) conducted at City of Industry, California on July 25 - 27, 2006, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

Paragraph 21.21(a), “Notification of Failure to Comply or Existence of a Defect and its Evaluation,” of Part 21, "Reporting of Defects and Noncompliance," of Title 10 of the *Code of Federal Regulations* (10 CFR 21.21(a)) requires, in part, that each individual, corporation partnership, or other entity subject to the regulations in this part shall adopt appropriate procedure to - (a)(1) Evaluate deviations and failures to comply to identify defects and failures to comply associated with substantial safety hazards as soon as practicable, and, except as provided in paragraph (a)(2) of this section, in all cases within 60 days of discovery, in order to identify a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected, and (a)(2) for deviations which cannot be evaluated within 60 day from discovery of the deviation or failure to comply, an interim report must be prepared and submitted to the commission and (a)(3) a director or responsible officer subject to the regulations of this part is informed as soon as practicable, and in all cases, within the 5 working days after completion of the evaluation required by paragraph 21.21(a)(1).

Contrary to the above, the applicable PRIME quality assurance procedure adopted pursuant to the requirements of 10 CFR Part 21, Quality Assurance Program QU-121, “NRC Regulations to 10 CFR Part 21,” Revision 3, dated September 24, 2003, did not contain all of the provisions required to be included in procedures by 10 CFR 21.21(a). Omitted were the provision for interim reports per paragraph 21.21(a)(2) and the provision for notification of a director or responsible officer per paragraph 21.21(a)(3). This issue is identified as Violation 99901360/2006-201-03

This is a minor violation.

Pursuant to the provisions of 10 CFR 2.201, PRIME Measurement Products is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 with a copy to the Director, Division of Engineering, Office of Nuclear Reactor Regulation, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation and should include for each violation: (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.

ENCLOSURE 2

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 2.790(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.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 5th day of October, 2006.

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

COMPANY:	PRIME Measurement Products 900 S. Turnbull Canyon Rd P.O. Box 1882 City of Industry, CA 91749
CONTACT:	Thomas Roide, Quality Manager PRIME Measurement Products (626) 961-2547 ext. 252
DATES:	July 25 - 27, 2006
REPORT NO:	99901360/2006-201
INSPECTORS:	Bill Rogers, NRR/DE/EQVB Kamalakar Naidu, NRR/DE/EQVB Hukam Garg, NRR/DE/EICB Stephen Alexander, NRR/DRA/APOB

APPROVED BY: ***(/RA by H. Hamzehee)*** ***10/05/2006***

Hossein Hamzehee, Chief — Date
Quality & Vendor Branch B
Division of Engineering
Office of Nuclear Reactor Regulation

ENCLOSURE 3

1.0 INSPECTION SUMMARY

On July 25 - 27, 2006, the U.S. Nuclear Regulatory Commission (NRC) performed an inspection at the PRIME Measurement Products (PRIME) facility in City of Industry, California (PRIME was formerly known as Barton and ITT-Barton). The purpose of the inspection was to verify compliance with the regulations contained in 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," and 10 CFR Part 21, "Reporting of Defects and Noncompliance."

The inspection focused on selected portions of the PRIME quality assurance program and the implementation of the program used in the design and manufacture of safety-related and environmentally qualified gauge pressure and differential pressure transmitters.

1.1 Nonconformances

Nonconformance 99901360/2006-201-01 is discussed in Section 3.1.
Nonconformance 99901360/2006-201-02 is discussed in Section 3.2.

1.2 Violations

Violation 99901360/2006-201-01 is discussed in Section 3.3.

2.0 STATUS OF PREVIOUS INSPECTION FINDINGS

Previous inspection findings were not reviewed during this inspection.

3.0 INSPECTION FINDINGS AND OTHER COMMENTS

3.1 Connector Assembly External Lead Wire Defect and Corrective Actions

a. Inspection Scope

The inspectors reviewed PRIME's activities related to the manufacture of environmentally qualified pressure and differential pressure transmitter connector assemblies. The inspectors reviewed PRIME's connector assembly manufacturing process to determine how it related to the defective connector assemblies discussed in Information Notice 2006-14, "Potentially Defective External Lead-Wire Connections in Barton Pressure Transmitters" and to review corrective actions taken or planned.

b. Observations and Findings

PRIME supplies environmentally qualified pressure and differential pressure transmitters to the commercial nuclear power industry. The subject transmitters are Barton Model 763 and 763A pressure transmitters and Barton Model 764 differential pressure transmitters. On May 18, 2006, PRIME issued an advisory letter to all affected licensees recommending that all Model 763, 763A, and 764 transmitter connector assemblies manufactured after May 1982 be

mechanically tested and inspected for exposure of the external lead wire bare conductors at the surface of the connector assembly. PRIME stated that connector assemblies manufactured before May 1982 were assembled with heat-shrink sleeving over the individual external lead wires extending into the epoxy potting material and were not considered susceptible to the condition described in the PRIME advisory letter.

Description of the Connector Assembly

Barton Model 763, 763A, and 764 transmitters use connector assemblies which are threaded into the transmitters and pass the electrical signal from the transmitter's internal measuring device to external lead wires which are subsequently connected to plant cabling in order to provide a pressure or differential pressure signal for indication and control. The connector assembly consists of a metal barrel which contains a hermetic gland seal, soldered in place, with pass-through pins which connect to the internal leads (inside the transmitter) and to the Tefzel-insulated external lead wires (outside the transmitter). Two external lead wires are soldered to the pass-through pins and the connector assembly is filled with an epoxy potting material (Epoxylite 6203) which covers the soldered connections of the external lead wires. The connector assembly is baked in an oven to cure the epoxy. Additionally, a short length of Kynar heat-shrink sleeving is used to cover both the wires to provide support and to provide physical protection of the external lead wires during installation (Note: this is <u>not</u> the heat-shrink sleeving which covers the individual external lead wires and extends into the epoxy potting material discussed below).

Connector assemblies manufactured before January 1982 were configured with Polyolefin heat-shrink sleeving placed over the individual external lead wires. This heat-shrink sleeving extended into the epoxy potting material to the bottom of the enclosure, completely covering the soldered connection of the external lead wire and the pass-through pin. The heat-shrink sleeving was then heated in order to cause it to shrink and physically conform to the shape of the external lead wire and the soldered connection. The connector assembly cavity was then filled with the epoxy potting material, covering the portion of the heat-shrink sleeving within the connector assembly cavity. The transmitter connector assemblies with Polyolefin heat-shrink sleeving over the individual external lead wires extending into the epoxy potting material were environmentally qualified to the requirements of IEEE Standard 323-1974, "IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations," as endorsed by NRC Regulatory Guide 1.89.

In January 1982, PRIME (Barton) changed the connector assembly design to replace the Polyolefin heat-shrink sleeving with Kynar heat-shrink sleeving over the individual external lead wires. In May of 1982, PRIME (Barton) eliminated the Kynar heat-shrink sleeving over the individual external lead wires (PRIME's/Barton's basis for removal of the heat-shrink sleeving from the individual external lead wires is discussed in Section 3.2 of this report).

In November 2005, during the reinstallation of pressure transmitters at the Beaver Valley Nuclear Power Plant (BVNP) following service at PRIME, PRIME engineering personnel observed a severed external lead wire on a connector assembly. In addition, during cleaning activities on similar transmitters at the PRIME facility, PRIME observed an additional pressure transmitter which had a severed external lead wire. The wires were severed at the point of entry into the epoxy potting material and were found without insulation. PRIME then inspected

transmitter connector assemblies in the factory inventory and identified a pressure transmitter connector assembly with an external lead wire having an exposed bare conductor.

PRIME indicated during the inspection that a personnel change in 2005 had resulted in the use of inadequately trained and experienced personnel to manufacture the transmitter connector assemblies. The new manufacturing personnel did not ensure that the insulation of the external lead wire extended in to the solder joint before the cavity was filled with the epoxy potting material. This resulted in external lead wires which were susceptible to having insulation pulled from the epoxy potting due to stress which occurred during the normal manufacturing process or the installation of the transmitters in the field. This resulted in two types of degraded conditions: (1) the external lead wire being severed from the connector assembly or (2) the insulation on the external lead wire being pulled away from the epoxy potting material resulting in an exposed bare conductor where the external lead wire exits the epoxy potting material. PRIME also determined that the weight of the long external lead wires (8 feet, 15 feet, or 60 feet) may have contributed to the stress at the point where the external lead wires exit the epoxy potting material.

Review of Manufacturing Records

The NRC inspectors determined that from May of 1982 until May of 2006, connector assemblies were manufactured from a Bill of Materials, without the use of written manufacturing instructions. In addition, the quality control inspections performed during this period did not have specified acceptance criteria. The NRC inspectors determined that the lack of documented manufacturing instructions or quality control inspection criteria contributed to the defective pressure transmitter connector assemblies being provided to NRC licensees. Failure to have documented manufacturing instructions or quality control inspections procedures with acceptance criteria for activities affecting quality was identified as a nonconformance contrary to Criterion V of 10 CFR Part 50, Appendix B. (Nonconformance 99901360/2006-201-01)

PRIME Actions Taken To Correct Manufacturing and Inspection Deficiencies

In its Nuclear Industry Advisory letter dated May 18, 2006, PRIME stated that it had initiated improvements to the connector assembly manufacturing and inspection processes. The NRC inspectors determined that PRIME engineers had prepared, for example, Drawing MAIO-4001, Model 764, Connector Assembly Manufacturing Instructions, dated May 25, 2006. In this document, PRIME provided detailed instructions for the assembly of the transmitter connector assemblies which included items such as the following:

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- Stripping the minimum length of the insulation on the external lead wires.

- Soldering the external lead wires utilizing special assembly fixtures and soldering systems.

- Verification of the adequacy of the depth of penetration of the external lead wire insulation into the epoxy potting material by ensuring the following: (1) the end of the external lead wire insulation is below the level of the top of the pass-through pins, (2) adequate clearance exists between the wire and the wall of the connector assembly, and (3) acceptable continuity values exist for the external lead wires.

- Verification of adequate coverage of the epoxy potting material over the external lead wires.

- Verification of acceptable value of insulation resistance of the external lead wires.

- Performance of final inspections to verify that the epoxy potting material is free of voids.

The NRC inspectors reviewed the manufacturing documents, inspection documents and associated drawings and observed the manufacture of a 763/764 transmitter connector assembly.

c. Conclusions

The NRC inspectors concluded that lack of documented manufacturing instructions and quality control inspection criteria contributed to the defective transmitter connector assemblies being provided to NRC licensees and was identified as a nonconformance to 10 CFR Part 50, Appendix B. The inspectors also concluded that PRIME had initiated improvements to the connector assembly manufacturing and inspection processes to address the previously inadequate manufacturing and inspections. Nonconformance 99901360/2006-201-01 was identified.

3.2 Connector Assembly Environmental Qualification

a. Inspection Scope

The inspectors reviewed the environmental qualification activities of the Barton Model 763 and 763A pressure transmitters and the Barton Model 764 differential pressure transmitters. The inspection emphasis was on the qualification of the connector assemblies manufactured subsequent to May 1982 which were the subject of Information Notice 2006-14.

b. Observations and Findings

Review of the Environmental Qualification of Barton Transmitter Connector Assemblies

Prior to January of 1982, the Tefzel-insulated external lead wires in a transmitter connector assembly were individually covered with Polyolefin heat-shrink sleeving that covered the solder joint of the external lead wire and pass-through pin and extended outside the connector assembly for about two inches, before the external cavity was filled with epoxy potting material. This configuration was environmentally qualified by Barton using a loss-of-coolant accident (LOCA) and high-energy line break (HELB) simulation performed for Barton by Westinghouse at their Forest Hills Laboratory. In January of 1982, Barton made a design to the connector assembly in which the Polyolefin heat-shrink sleeving was replaced with Kynar heat-shrink sleeving. The design change was reconciled with the previous environmental qualification because it was only a change of material and the new material, Kynar, was determined on the basis of its own separate qualification to be superior to the original material in its ability to withstand all the effects of a design-basis accident harsh environment. However, some of the test specimens with heat shrink sleeving in the original qualification LOCA and HELB simulation had exhibited anomalies during the testing. The transmitter output signals were erratic during

the most severe portions of the test and moisture was observed weeping out of the external lead wire insulation external to the test chamber. Barton determined that these anomalies were the result of a test artifact due to the transmitter external lead wires exiting through a seal in the test chamber and being terminated outside the chamber. This configuration set up a differential pressure across the test chamber seal of about 80 psi (the difference between the LOCA and HELB test pressure and atmospheric pressure outside the test chamber). Dissection of some specimens showed that the excessive differential pressure had forced steam and chemical spray from inside the test chamber, past the epoxy potting material in the transmitter connector assembly, into the ends of the external lead wires (between the external lead wire conductor and the Tefzel insulation), and finally to outside the test chamber where the moisture seeped from the ends of the external lead wires. Barton concluded that this differential pressure would not be expected to be present in a plant installation since the transmitter external lead wires are terminated inside containment at the containment electrical penetration assemblies. Barton demonstrated, with additional testing, that the anomalies did not occur when the test set up was altered to remove the differential pressure to more closely simulate the plant installation. The NRC inspectors concluded that the anomaly had been adequately analyzed and dispositioned and would not be applicable to NRC licensees' pressure or differential pressure transmitter applications required to be environmentally qualified in accordance with 10 CFR 50.49.

In addition, Barton had determined that the heat-shrink sleeving over the individual lead wires created a tiny air-filled cavity in the vicinity of the external lead wire and pass-through pin solder joints because, even when shrunk, the heat-shrink sleeving cannot completely conform to the shapes it encloses. This cavity would be at or near atmospheric pressure except for increases due to heating, but still much less than LOCA or HELB peak pressure. The resultant pressure difference could still conceivably drive LOCA steam and spray chemicals between the sleeving and the insulation into the cavity, thus providing a potentially conductive path for leakage of electrical current from pin to pin and from the pins to ground in the harsh accident environment. Primarily for this reason, Barton decided that removal of the heat-shrink sleeving would be a design improvement in terms of harsh environment performance reliability. Therefore, subsequent to the May 1982 design change, the connector assemblies for Barton Model 763, 763A and 764 transmitters were manufactured without heat-shrink sleeving over the individual external lead wires extending into the epoxy potting material.

During the review of this issue, the NRC found that although Barton had determined by means of reasoning and engineering judgement that the removal of the heat-shrink sleeving from the individual external lead wires should represent an improvement in the harsh environment performance reliability of the transmitter connector assemblies. However, the company, now called PRIME, could not produce documentation indicating that the qualification of the design without heat-shrink sleeving on the individual external lead wires had been demonstrated or even undertaken to the level of rigor prescribed by Regulatory Guide 1.89, “Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants,” and as described in IEEE Standard 323-1974 and other applicable industry standards. Failure to demonstrate the environmental qualification of the post-May 1982 transmitter connector assemblies, without heat-shrink sleeving on the individual external lead wires extending into the epoxy material, was identified as a nonconformance contrary to Criterion III of 10 CFR Part 50, Appendix B. (Nonconformance 99901360/2006-201-02)

It should be noted that the issue concerning environmental qualification does not apply to transmitter connector assemblies supplied by Barton (PRIME) or Westinghouse which were

manufactured prior to the May 1982 design change, with heat-shrink sleeving over the individual external lead wires extending into the epoxy potting. In addition, transmitters of the Models in question manufactured prior to May of 1982 may have had the connector assemblies replaced with the post-May 1982 connector assembly design either in the field or at PRIME during maintenance or repair activities.

Review of Purchase Orders Including Environmental Qualification Specifications

The NRC inspectors reviewed selected purchase orders (PO) and determined that PRIME was supplying pressure and differential pressure transmitters, with the post-May 1982 design connector assemblies, which did not have heat-shrink sleeving on the individual external lead wires that penetrated the epoxy potting, as environmentally qualified equipment to NRC licensees and other customers. Examples of the PO's reviewed include:

- Entergy Nuclear Operations PO 579585, dated June 20, 2006, which included four 0764-1221B type connector assemblies. PO specifications included IEEE Standard 323-1974 for use in nuclear power plants QA category 1 harsh environment as documented in Barton Test Report No. R3-763-6 (Model 763) or Test Report No. R3-764-9 (Model 764) (intended for an environmentally qualified application at Fitz Patrick).

- Exelon PO 34940, dated March 31, 2006, which included one M764 electric transmitter housing. PO specifications included IEEE Standard 323-1974 for use in nuclear power plants in harsh environment (intended for an environmentally qualified application at Quad Cities).

- Westinghouse Electric, Repair & Replacement Services Center PO 4500191626, dated March 1, 2006, which included two Barton Model 764 differential pressure transmitters. PO specifications included Westinghouse certificates of environmental qualification WCAP-8687, Supplement 2 EQTR EO3A, Revision 2; WCAP-8687, Supplement 2 EQTR E03A, Addendum 1, Revision 0; and WCAP-8587, Supplement 1 EQDESE-3A, Revision 5 (intended for an environmentally qualified application at Wolf Creek).

c. Conclusions

The NRC inspectors reviewed selected PO's, and determined that PRIME was providing transmitter connector assemblies to NRC licensees and other customers in accordance with POs specifying the requirements of IEEE Standard 323-1974 and Westinghouse environmental qualification reports. Based on the documentation reviewed and discussion with PRIME management and staff, the NRC inspectors concluded that PRIME could not produce documentation that indicated that the current design of the transmitter connector assembly in production since the May 1982 design change, which do not have heat-shrink sleeving over the individual external lead wires extending into the epoxy potting material, had been demonstrated to be environmentally qualified. Nonconformance 99901360/2006-201-02 was identified.

3.3 10 CFR Part 21 Program

a. Inspection Scope

The NRC inspectors reviewed PRIME Quality Assurance Program (QAP) procedure QU-121, "NRC Regulations to 10CFR Part 21," and associated documents related to the implementation of its program.

b. Observations and Findings

The NRC inspectors reviewed QU-121 which was developed to implement the requirements of 10 CFR Part 21. QU-121 provided PRIME employees with information concerning the basic requirements of 10 CFR Part 21 and its applicability to vendors and NRC licensees. In addition, the document defined important concepts such as basic component, deviation, defect, discovery and evaluation. However, the NRC inspectors determined that QU-121 did not contain all of the provisions required to be included in Part 21 procedures, as specified by 10 CFR 21.21(a). The provisions required to be procedurealized, but omitted in OU-121, are those in 10 CFR 21.21(a)(2), (for deviations which cannot be evaluated within 60 days from discovery, an interim report must be prepared and submitted in writing to the NRC within 60 days of discovery) and 10 CFR 21.21(a)(3) (a director or responsible officer must be notified of within 5 working days of the completion of an evaluation which identifies a defect or failure to comply associated with a substantial safety hazard). The failure to translate the requirements of 10 CFR 21.21(a)(2) and (a)(3) into the Part 21 procedure in accordance with 10 CFR 21.21(a), was identified as a violation of 10 CFR 21.21(a). (Violation 99901360/2006-201-03)

The NRC inspectors reviewed PRIME documentation of deviations related to Barton Model 763, 763A and 764 transmitters and found that PRIME had determined that it was not capable of performing the evaluation required by 10 CFR 21.21(a)(1), in part because it did not know the specific application by NRC licensees. Therefore, in accordance with 10 CFR 21.21(b), PRIME had notified the affected licensees and other customers of the deviations so that the customers could perform the evaluation. The inspectors noted that the reviews were adequately documented and had been provided to affected licensees and other purchasers within the five working days of determining it was not capable of performing the 21.21(a)(1) evaluation as required by 10 CFR 21.21(b). In addition, the inspectors determined that the review of the deviations related to the severed external lead wires and bare conductors had been accomplished in accordance with the regulations.

c. Conclusions

The inspectors noted that the 10 CFR Part 21 reviews performed by PRIME were adequately documented and provided to NRC licensees within time limit prescribed by 10 CFR 21.21(b). However, the NRC inspectors concluded that the PRIME 10 CFR Part 21 procedure, QU-121, did not contain all of the provisions required in Part 21 procedures by 10 CFR Part 21.21(a). Accordingly, Minor Violation 99901360/2006-201-03 was identified.

4.0 MANAGEMENT MEETINGS AND PERSONNEL CONTACTED

4.1 Entrance and Exit Meetings

During the entrance meeting on July 25, 2006, the NRC inspection team discussed the scope of the inspection, outlined the areas to be inspected, and established interfaces with Prime staff and management. During the exit meeting on July 27, 2006, the NRC team discussed its observations and preliminary findings with Prime management and staff.

4.2 Persons Contacted

Rogers Krechmery	PRIME Vice President, Engineering
James Greer	PRIME Manager Engineering
Mark Larson	PRIME Manager, Nuclear and Government Product Engineering
Thomas Roide	PRIME Quality Manager