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

May 4, 2023

Diane Steen, Director of Quality
Ultra Energy,
707 Jeffrey Way,
Round Rock, TX 78665

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT OF ULTRA ENERGY NO. 99900880/2023-201

Dear Ms. Steen:

On March 20 – 24, 2023, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Ultra Energy (hereafter referred to as Ultra) facility in Round Rock, TX. The purpose of this limited-scope inspection was to assess Ultra's compliance with provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," and selected portions of Appendix B, "Quality Assurance Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

This technically focused inspection specifically evaluated Ultra's implementation of the quality activities associated with the design, fabrication, and commercial grade dedication of safety-related sensors and process instruments for U.S. nuclear power plants. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC endorsement of Ultra's overall quality assurance (QA) or 10 CFR Part 21 program.

Within the scope of this inspection, no violations or nonconformances were identified.

In accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding" and the NRC's "Rule of Practice," a copy of this letter, its enclosure(s), and 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 at http://www.nrc.gov/reading-rm/adams.html.

Sincerely,

Signed by Kavanagh, Kerri
on 05/04/23

Kerri Kavanagh, Chief
Quality Assurance Vendor Inspection Branch
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

Docket No.: 99900880

EPID No.: I-2023-201-0010

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT OF ULTRA ENERGY NO. 99900880/2023-201 DATE: May 4, 2023

Enclosure:
Inspection Report No. 99900880/2023-201
and Attachment

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ASakadales
RFelts
AAgrawal
TMartinez-Navedo
AArmstrong
OAyegbusi
GGalletti
YLaw
diane.steen@ultra-nspi.com

ADAMS Accession No.: ML23121A207 **NRR-106**

OFFICE	NRR/DRO/IQVB	NRR/DRO/IQVB	NRR/DRO/IQVB
NAME	YLaw	AArmstrong	GGalletti
DATE	05/1/2023	05/1/2023	05/1/2023
OFFICE	NRR/DRO/IQVB	NRR/DRO/IQVB	
NAME	OAyegbusi	KKavanagh	
DATE	05/1/2023	05/4/2023	

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U.S. NUCLEAR REGULATORY COMMISSION OFFICE OF NUCLEAR REACTOR REGULATION DIVISION OF REACTOR OVERSIGHT VENDOR INSPECTION REPORT

Docket No.:	99900880
Report No.:	99900880/2023-201
Vendor:	Ultra Energy (Ultra) 707 Jeffrey Way Round Rock, TX 78665
Vendor Contact:	Diane Steen Phone: 512-434-2845 Email: diane.steen@ultra-nspi.com
Nuclear Industry Activity:	Ultra supplies safety related sensors and process instruments to the commercial nuclear industry.
Inspection Dates:	March 20 – 24, 2023
Inspectors:	Odunayo Ayegbusi, NRR/DRO/IQVB, Team Leader Greg Galletti, NRR/DRO/IQVB Aaron Armstrong, NRR/DRO/IQVB Yiu Law, NRR/DRO/IQVB
Approved by:	Kerri Kavanagh, Chief Quality Assurance and Vendor Inspection Division of Reactor Oversight Office of Nuclear Reactor Regulation

Enclosure

EXECUTIVE SUMMARY

99900880/2023-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a routine vendor inspection at the Ultra Energy (hereafter referred to as Ultra) facility in Round Rock, TX, to verify it had implemented an adequate quality assurance (QA) program that complies with the requirements of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," and 10 CFR Part 21, "Reporting of Defects and Noncompliance." The NRC inspection team conducted this inspection on-site from March 20 – 24, 2023. The last NRC inspection of this facility was conducted in June 2013.

This technically focused inspection specifically evaluated Ultra's implementation of the quality activities associated with the design, fabrication, and commercial grade dedication (CGD) of safety-related sensors and process instruments being supplied to U.S. nuclear power plants. In addition, the NRC inspection team evaluated Ultra's closure of the inspection finding documented in inspection report No. 99900880/2013-201, dated July 31, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13204A356).

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

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

The NRC inspection team observed the following specific activities:

- Welding of a thermocouple body
- Visual inspection of a temperature transmitter
- Receipt, storage, shipping, and handling of safety-related items

During this inspection, the NRC inspection team implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated February 10, 2023, IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated February 10, 2023; and IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting of Defects and Noncompliance," dated February 10, 2023.

The results of the inspection are summarized below.

10 CFR Part 21 Program

The NRC inspection team concluded that Ultra is implementing its 10 CFR Part 21 program in accordance with the regulatory requirements of 10 CFR Part 21. Based on the limited sample of documents reviewed, the NRC inspection team also determined that Ultra is adequately implementing its policies and procedures associated with the 10 CFR Part 21 program. No findings of significance were identified.

Nonconforming Materials, Parts, or Components and Corrective Action

The NRC inspection team reviewed the corrective actions that Ultra took to address Nonconformance No. 99900880/2013-201-01, documented in inspection report No. 99900880/2013-201, dated July 31, 2013 (ADAMS Accession No. ML13204A356). The NRC inspection team reviewed Ultra's documentation that provided the objective evidence that all the corrective actions were completed and adequately implemented. Based on this review, the NRC inspection team closed Nonconformance No. 99900880/2013-201-01. No findings of significance were identified in these areas.

Inspection Areas

The NRC inspection team determined that Ultra established its programs for 10 CFR Part 21, nonconforming materials, parts, or components and corrective action, design control, commercial grade dedication, procurement document control and oversight of contracted activities, identification and control of materials, parts, and components, control of special processes, test control, control of measuring and test equipment, in accordance with the applicable regulatory requirements of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed and activities observed, the NRC inspection team also determined that Ultra is implementing its policies and procedures associated with these programs. No findings of significance were identified in these areas.

REPORT DETAILS

1. 10 CFR Part 21 Program

   a. Inspection Scope

   The U.S. Nuclear Regulatory Commission (NRC) inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," program to verify compliance with the regulatory requirements. The NRC inspection team also evaluated the 10 CFR Part 21 postings and a sample of Ultra's purchase orders (POs) to verify compliance with the requirements of 10 CFR 21.21, "Notification of Failure to Comply or Existence of a Defect and its Evaluation," and 10 CFR 21.31, "Procurement Documents." The NRC inspection team also verified that Ultra's nonconformance and corrective action procedures provide a link to the 10 CFR Part 21 program.

   Furthermore, for a sample of 10 CFR Part 21 evaluations performed by Ultra, the NRC inspection team verified that Ultra had effectively implemented the requirements for evaluating deviations and failures to comply. The NRC inspection team verified that the notifications were performed in accordance with the requirements of 10 CFR 21.21, as applicable.

   The NRC inspection team also discussed the 10 CFR Part 21 program with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

   b. Observations and Findings

   No findings of significance were identified.

   c. Conclusion

   The NRC inspection team concluded that Ultra is implementing its 10 CFR Part 21 program in accordance with the regulatory requirements of 10 CFR Part 21. Based on the limited sample of documents reviewed, the NRC inspection team also determined that Ultra is adequately implementing its policies and procedures associated with the 10 CFR Part 21 program. No findings of significance were identified.

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

   a. Inspection Scope

   The NRC inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its nonconformance control and corrective action programs to verify compliance with the requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," and Criterion XVI, "Corrective Action," 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."

The NRC inspection team verified that Ultra's processes and procedures provide for the identification, documentation, segregation, evaluation, and disposition of nonconforming items. These processes also apply the principles of rework/repair, use-as-is, scrap/salvage, return to vendor, or no defect found.

The NRC inspection team observed Ultra's assembly floor operations and verified that nonconforming materials, parts, or components were properly identified, marked, and segregated, when practical, to ensure that they were not reintroduced into the production processes. The NRC inspection team reviewed a sample of material review requests (MRRs) associated with the production of safety-related parts and confirmed that Ultra dispositioned the nonconforming materials in accordance with the applicable procedures, documented an appropriate technical justification for the various dispositions utilized, and took adequate corrective action regarding the nonconforming items to prevent recurrence, as appropriate. In addition, the NRC inspection team confirmed that the nonconformance process provides a link to the 10 CFR Part 21 program.

The NRC inspection team also reviewed a sample of corrective action requests (CARs) to verify: (1) adequate documentation and description of conditions adverse to quality; (2) an appropriate analysis of the cause of these conditions and the corrective actions taken to prevent recurrence; (3) direction for review and approval by the responsible authority; (4) a description of the current status of the correction actions; and (5) the actions taken to verify timely and effective implementation of the corrective actions. In addition, the NRC inspection team confirmed that the corrective action process provides a link to the 10 CFR Part 21 program.

The NRC inspection team also reviewed Ultra's corrective actions in response to the inspection findings identified in NRC Inspection Report (IR) No. 99900880/2013-201 dated July 31, 2013 (ADAMS Accession No. ML13204A356).

Additionally, the NRC inspection team discussed the nonconformance and corrective action programs with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

During the review of a sample of CARs, the NRC inspection team identified multiple CARs that were past their due dates in accordance with Ultra's implementing procedure for the corrective action program. Ultra's QAP 16.1, "Corrective Action," Section 5.2 states, in part, that "corrective action response is due within thirty (30) calendar days after the CAR is assigned." The NRC Inspection team also noted that, Ultra's QAP 16.1, Section 5.7.2, states, in part, that "the QA Engineer may elect to extend a deadline/due date as they deem appropriate, and the justification for the extension is recorded in the ERP system CAR form." Contrary to this, Ultra did not extend the due dates for CARs that remained open longer than 30 days. Ultra explained that this issue was identified as a deficiency during a previous audit in 2022 (CAR 2062). Ultra had taken preventative action to have weekly CAR review meetings and Ultra had been proactively closing CARs that remained open. Ultra provided evidence that some of these opened CARs were closed as an effort to address the previous audit deficiency, however, some of the CARs remained open. Ultra also provided evidence of the weekly CAR review meetings.

Using Appendix E of Inspection Manual Chapter (IMC) 0617, “Vendor and Quality Assurance Implementation Inspection Reports,” The NRC inspection team determined this issue to be minor based on the screening process in Section E.8 of IMC 0617. Specifically, the NRC inspection team reviewed a sample of the CARs that remained open past the 30 days requirement and did not identify any CAR that, if left uncorrected, would represent a condition adverse to quality. In addition, by reviewing Ultra’s overall corrective action program and its continued effort to close these CARs, the NRC inspection team determined that this issue did not represent a failure of Ultra to establish, implement, or maintain a process that could render the quality of any safety-related activity unacceptable or indeterminate. Ultra initiated CAR No. 2111 to address this issue.

b1. Corrective Action Associated with Nonconformance 99900880/2013-201-01

Following the July 2013 inspection at Ultra as documented in NRC inspection report No. 99900880/2013-201, the NRC issued Nonconformance 99900880/2013-201-01 for Ultra’s failure to verify the adequacy of design of safety-related components by the performance of a suitable testing program. Specifically, Ultra did not appropriately control Lab View 3rd Party Software in accordance with released procedures and instructions or demonstrate by another means of verification (i.e., dedication or conducting tests not relying on the same software used for design) that the software could perform its safety function as related to the following tests:

(1) N9004 RTD Hysteresis test

(2) DTN-2070 Pressure Transmitter Temperature Compensation test

In its response dated August 26, 2013 (ADAMS Accession No. ML13254A216), Ultra stated that the QSDR 100-20.1 “Software Quality Assurance” procedure would be revised and released as a controlled document through Ultra’s Quality Management System with a more robust CGD process and more stringent rules for the technical evaluation and classification of safety-related software. All personnel who would perform technical evaluations and safety classifications using the CGD process defined in QSDR 100-20.1 would be trained to the new procedure with their training records updated to reflect the training.

Furthermore, the response stated that the N9004 RTD Hysteresis test and DTN-2070 Pressure Transmitter Temperature Compensation test would be brought under full control under QSDR 100-20.1. Ultra would also rededicate, where necessary, the remaining 3rd party safety-related software. At a high level, this would be accomplished through the completion of a technical evaluation, the identification of the associated critical characteristics, the development of acceptance methods and the completion of acceptance testing.

The NRC inspection team reviewed the documentation that provided the objective evidence for the completion of the corrective actions. Ultra’s Corrective Action/Preventive Action (CAPA) 1065 describes the response to Nonconformance 99900880/2013-201-01. The NRC inspection team verified that Ultra’s procedure, QSDR 100-20.1, was updated to include a CGD process for 3rd party safety-related software and that Ultra’s applicable personnel were trained to the latest revision of QSDR 100-20.1. The NRC inspection team also reviewed the validation procedures for the N9004 RTD Hysteresis test and the DTN-2070 Pressure Transmitter Temperature Compensation test and concluded that they contained the appropriate critical characteristics and acceptance criteria to conduct these tests.

The NRC inspection team determined that Ultra's corrective actions were adequately implemented to address Nonconformance 99900880/2013-201-01. Based on its review, the NRC inspection closed Nonconformance 99900880/2013-201-01. No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that Ultra is implementing its nonconformance program in accordance with the regulatory requirements of Criterion XV of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that Ultra is implementing its policies and procedures associated with its nonconformance program. No findings of significance were identified.

Except for the minor finding stated above, the NRC inspection team also concluded that Ultra is implementing its corrective action program in accordance with the regulatory requirements of Criterion XVI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team determined that Ultra is implementing its policies and procedures associated with its corrective action program. No findings of significance were identified.

3. Design Control

a. Inspection Scope

The NRC inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its design control program to verify compliance with the regulatory requirements of Criterion III, "Design Control," of Appendix B to 10 CFR Part 50. The NRC inspection team selected a sample of pressure and temperature transmitters provided to U.S. nuclear power plants and reviewed relevant POs, design reports, customer specifications, drawings, test procedures, and engineering change notices. The NRC inspection team verified that these documents contained the required technical information in accordance with Ultra's procedures and the applicable code requirements.

The NRC inspection team reviewed design packages for a sample of pressure and temperature transmitters, ensuring that the documents included the correct technical and regulatory requirements per the customer specifications, Ultra's procedures, and the applicable code requirements. The NRC inspection team reviewed design change packages to incorporate pressure and temperature transmitter changes into existing designs. The NRC inspection team verified that the design change received a level of review commensurate with that applied to the original design by a qualified design engineer. The NRC inspection team verified that Ultra's design control process effectively translated the request into the affected Ultra documentation.

The NRC inspection team also discussed the design control program with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that Ultra is implementing its design control program in accordance with the regulatory requirements of Criterion III of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that Ultra is implementing its policies and procedures associated with the design control program. No findings of significance were identified.

4. Commercial-Grade Dedication

a. Inspection Scope

The NRC inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its CGD program to verify compliance with the regulatory requirements of Criterion III and Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed Ultra's program for the dedication of commercial-grade items for use in safety-related applications to verify its compliance with the applicable regulatory requirements. This assessment included a review of the policies and procedures governing the implementation CGD activities, interviews with Ultra's personnel, and review of related documentation. Specifically, the NRC inspection team reviewed dedication packages for pressure transmitter 1000-730-000, RTD taper tips 9004, and pressure transducer DTN2070PGD750G-M24-SP, to assess the different elements of the CGD program, including the technical evaluation process, design drawings, work package instructions, and inspection reports. The NRC inspection team evaluated the criteria for the identification of item functions, credible failure mechanisms/modes, selection of critical characteristics and acceptance criteria, and the identification of verification methods to verify effective implementation of Ultra's CGD process.

The NRC inspection team also discussed the CGD programs with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that Ultra is implementing its CGD program in accordance with the regulatory requirements of Criterion III and Criterion VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team determined that Ultra is implementing its policies and procedures associated with the CGD program. No findings of significance were identified.

5. Procurement Document Control and Oversight of Contracted Activities

a. Inspection Scope

The NRC inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its supplier oversight program to verify compliance with the regulatory requirements of Criterion IV, "Procurement Document Control," and Criterion VII of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed Ultra's approved vendor list (AVL), and a sample of POs, supplier audits, job travelers, and receipt inspection records. For the sample of POs reviewed, the NRC inspection team verified that the POs included, as appropriate: scope of work, right of access to the suppliers' facilities, and conditions and restrictions imposed to sub-suppliers. The NRC inspection team confirmed that the POs adequately invoked the applicable technical, regulatory, and quality requirements. In addition, the NRC inspection team verified that for the sample of receipt inspection records reviewed (e.g., receipt inspection reports, Certificates of Compliance, and Certificate of Calibration), these records were (1) reviewed by Ultra for compliance with the requirements of the POs, (2) the records were approved by qualified individuals, and (3) the records contained the applicable technical and regulatory information. The NRC inspection team performed a walkdown of the receipt inspection and quality control inspection area to confirm the process Ultra uses for receiving, inspecting, and controlling items.

The NRC inspection team selected a sample of suppliers from the AVL to review the methodology for conducting and documenting audits to verify adequate evaluation of the suppliers' controls for meeting the applicable requirements of Appendix B to 10 CFR Part 50. For the sample of supplier audits reviewed, the NRC inspection team verified the following: the audit reports included an audit plan; audits were performed according to established frequency; audit reports included adequate documented objective evidence of compliance with the applicable requirements; and audit documentation was reviewed by Ultra's responsible management. The NRC inspection team also verified that audits performed by the Nuclear Industry Assessment Committee (NIAC) were evaluated by Ultra in accordance with its written procedures for applicability to its scope of activities.

The NRC inspection team discussed the procurement document control and supplier oversight program with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

During the review of audit reports for suppliers on the AVL, the NRC inspection team reviewed a NIAC audit report for which Ultra used to justify adding the supplier to its AVL. The NRC inspection team found that Ultra had not performed a third-party audit assessment evaluation to determine if the NIAC audit report addresses the needs of Ultra as required by Ultra's QAP 18.1, "Supplier Audits and Commercial Grade Survey." Specifically, QAP 18.1, section 5.3.2, states, in part, "that Ultra shall review the audit or commercial grade survey provided by NIAC to determine if it addresses the needs of Ultra." It further states that "the review and acceptance shall be documented using Form Q-29L, Third Party Audit Assessment Evaluation."

Using Appendix E of IMC 0617, the NRC inspection team determined this issue to be minor because it is similar to Example 8.a in section E.9, which states that such issues are minor because the third-party audit was applicable and provided objective evidence that the supplier's QA program met the requirements of 10 CFR 50, Appendix B. While Ultra had not

identified the issue prior to the NRC inspection team identifying it, there were no open audit findings that call into question the suppliers' ability to provide basic components or services in accordance with the requirements of 10 CFR 50 Appendix B. Ultra initiated CAR 2107 to address this issue.

c. Conclusion

Except for the minor finding identified above, the NRC inspection team concluded that Ultra is implementing its supplier oversight program in accordance with the regulatory requirements of Criterion IV and Criterion VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team determined that Ultra is adequately implementing its policies and procedures associated with the supplier oversight program. No findings of significance were identified.

6. Identification and Control of Materials, Parts, and Components

a. Inspection Scope

The NRC inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its material identification and control program to verify compliance with the regulatory requirements of Criterion VIII, "Identification and Control of Materials, Parts, and Components," of Appendix B to 10 CFR Part 50. The NRC inspection team also observed implementation of the material identification and control program by Ultra's employees during in-process fabrication activities including receipt inspection, special testing, storage and inventory control, and machining of safety-related items. The NRC inspection team verified that all materials inspected were adequately marked with appropriate lot, batch and/or heat numbers using the marking and labeling conventions in accordance with written procedures and instructions.

The NRC inspection team discussed the material identification and control program with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that Ultra is implementing its material identification and control program in accordance with the regulatory requirements of Criterion VIII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed and direct observation of material control practices in the manufacturing facility, the NRC inspection team also determined that Ultra is adequately implementing its policies and procedures associated with the material identification and control program. No findings of significance were identified.

7. Control of Special Processes

a. Inspection Scope

The NRC inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its control of special processes program to verify compliance with the regulatory requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50, and with the requirements of the American Society for Nondestructive Testing (ASNT) SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing."

There was limited safety-related welding and Non-Destructive Testing (NDT) activities being performed during the week of the inspection. Welding activities at Ultra are limited to gas tungsten arc welding. The NRC inspection team observed automated TIG welding performed on a Thermocouple body lot weld no. PO123268 "316L stainless wire lot no. 1234513618," which included pre-job and setup of weld input parameters in accordance with the weld setup sheet and troubleshooting welding machine. During the welding operation, the NRC inspection team witnessed a weld failure due to contamination of the weld material. The weld technician initiated an MRR against the part (SS Union) and placed the MRR into Ultra's ERP system. The MRR was subsequently reviewed and dispositioned by the welding engineer and quality control inspector in accordance with Ultra's MRR procedure.

The NRC inspection team also reviewed a sample of completed Welding Procedure Specifications (WPS) and Procedure Qualification Records (PQR). The NRC inspection team verified that the applicable welding data and other required information, as applicable, was adequately recorded in the WPS and PQR (e.g., procedures used, type of weld filler material, etc.). The NRC inspection team also reviewed Ultra's process for controlling weld filler metal. The NRC inspection team performed a walk-down of the weld storage area to confirm that weld filler materials were adequately controlled to prevent degradation, inadvertent use, or loss of traceability in accordance with Ultra's procedures. In addition, the NRC inspection team reviewed the associated welder performance qualification records and confirmed that the welders have completed the required training and had maintained their qualifications in accordance with the applicable Ultra's policies and procedures.

NDT activities at Ultra include, but are not limited to, Visual Testing (VT) and Liquid Penetrant Testing (PT). The NRC inspection team reviewed a sample of procedures and completed test records. The NRC inspection team confirmed that the NDT reports contained the required information in accordance with Ultra's policies and procedures. In addition, the NRC inspection team reviewed the qualification records for the Level III inspector who performed the PT and confirmed he was qualified in accordance with the requirements of ASNT SNT-TC-1A.

The NRC inspection team also discussed the control of special processes program with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that Ultra is implementing its control of special processes program in accordance with the regulatory requirements of Criterion IX of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the

NRC inspection team also determined that Ultra is implementing its policies and procedures associated with the control of special processes program. No findings of significance were identified.

8. Test Control

a. Inspection Scope

The NRC inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its test control program to verify compliance with the requirements of Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed the test documentation associated with in-process and final factory testing for a sample of components including N7030 Series 4-wire RTD Temperature Transmitters, N7030/N7040 Transmitter DIN-Rail Mount Option, and N7030/N7040 Transmitter 2 Screw Mounting Option. The NRC inspection team verified that the assembly and final test procedures including the job operation reports, modification/final assembly instructions, and calibration and verification testing procedures adequately identified the testing required, pre-requisites, acceptance criteria, and objective evidence of proper review and acceptance. The sample also contained recorded test results input data, test equipment logs, and identification of the test technicians performing the work. The NRC inspection team confirmed that the tests were performed using properly calibrated measuring and test equipment (M&TE).

The NRC inspection team also reviewed the training and qualification records of the test technicians identified in the reports and confirmed that testing personnel had completed all the required training and had maintained the applicable qualification and certification in accordance with Ultra's policies and procedures.

The NRC inspection team reviewed a sample of MRRs associated with equipment testing activities to verify that observed test anomalies were adequately described and corrective actions were taken to resolve the conditions identified. In all cases, where required, customer acceptance was documented.

The NRC inspection team discussed the test control program with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that Ultra is implementing its test control program in accordance with the regulatory requirements of Criterion XI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that Ultra is implementing its policies and procedures associated with the test control program. No findings of significance were identified.

9. Control of Measuring and Test Equipment

a. Inspection Scope

The NRC inspection team reviewed Ultra's policies and implementing procedures that govern the implementation of its M&TE program to verify compliance with the requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50.

For a sample of M&TE, the NRC inspection team reviewed M&TE on the shop floor as well as reviewed the records for selected M&TE to ensure, appropriate calibration stickers and current calibration dates, including the calibration due date. The NRC inspection team also verified that all M&TE reviewed during observed testing activities was properly calibrated, adjusted, and maintained at prescribed intervals prior to use. Calibration records reviewed by the NRC inspection team indicated the as-found or as-left conditions, accuracy required, calibration results, calibration dates, and the due date for recalibration. Furthermore, the NRC inspection team also verified that the selected M&TE were calibrated using procedures traceable to known industry standards.

The NRC inspection team confirmed that when M&TE equipment is found to be out of calibration, Ultra generates an M&TE out-of-tolerance condition to identify items that have been accepted using this equipment since the last valid calibration date and to perform an extent of condition review. The NRC inspection team performed a walk-down of Ultra's fabrication floor to observe that M&TE were labeled, handled, and stored in a manner that indicated the calibration status of the instrument and ensured its traceability to calibration test data.

The NRC inspection team discussed the control of M&TE with Ultra's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that Ultra is implementing its M&TE program in accordance with the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that Ultra is implementing its policies and procedures associated with the M&TE program. No findings of significance were identified.

10. Entrance and Exit Meetings

On March 20, 2023, the NRC inspection team presented the inspection scope during an entrance meeting with Ms. Diane Steen, Ultra's Director of Quality, and other members of Ultra's management and technical staff. On March 24, 2023, the NRC inspection team presented the inspection results to Ms. Steen and other members of Ultra management and technical staff. The attachment to this report lists the attendees of the entrance and exit meetings, as well as those individuals whom the NRC inspection team interviewed.

ATTACHMENT

1. ENTRANCE/EXIT MEETING ATTENDEES

Name	Position	Affiliation	Entrance	Exit	Interviewed
Diane Steen	Director of Quality	Ultra	X	X	X
Scott Jewett	Sales Manager	Ultra	X		
Ricky Wentrcek	Production Manager	Ultra	X	X	
Greg Young	Quality Control Supervisor	Ultra	X	X	
Irene Reyner	Quality Engineer	Ultra	X	X	X
Laura Suddath	Quality Systems Manager	Ultra	X	X	X
Gary Hawkins	VP Engineering	Ultra	X		
Amalia Jimenez	Quality Control	Ultra	X	X	
Susan Strmiska	Quality Control	Ultra	X	X	
Jacob Durbin	Quality Control	Ultra	X	X	X
Hector Loroya	Logistics and Procurement Manager	Ultra	X	X	X
Cory Richter	Quality Engineer	Ultra	X	X	
Michelle Nauman	Quality Engineer	Ultra	X	X	

Scott Simpson	Finance	Ultra	X	X	
Alan Barendregt	Engineering	Ultra	X		
Pat Calvin	Engineering	Ultra	X	X	
Jamie Rogers	VP Sensors	Ultra	X	X	
Derek Edwards	Program Management	Ultra	X	X	
Todd Reynolds	Sales / Engineering	Ultra	X	X	
Ted Jamerson	Continuous Improvement	Ultra	X	X	
Brittany Arnot	Human Resources	Ultra	X	X	
Mark McCray	Chief Technology Officer	Ultra	X	X	
Jacob Sanchez	Quality Laboratory Leader	Ultra		X	X
M.Tuggle	Level III NDE Technician	Ultra Contractor			X
Odunayo Ayegbusi	Inspector	NRC	X	X	
Greg Galletti	Inspector	NRC	X	X	
Yiu Law	Inspector	NRC	X	X	
Aaron Armstrong	Inspector	NRC	X	X	
Kerri Kavanagh	Branch Chief	NRC		X	

2. INSPECTION PROCEDURES USED:

- Inspection Procedure (IP) 43002, “Routine Inspections of Nuclear Vendors,” dated February 10, 2023
- IP 43004, “Inspection of Commercial-Grade Dedication Programs,” dated February 10, 2023
- IP 36100, “Inspection of 10 CFR Part 21 and Programs for Reporting of Defects and Noncompliance,” dated February 10, 2023

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Status	Type	Description
99900880/2013-201-01	CLOSED	Nonconformance	Criterion III

4. DOCUMENTS REVIEWED

Quality Assurance Procedures (QAP):

- QAM 100-1, “Quality Assurance Manual,” Revision 17, dated September 30, 2020
- QAP-2.1, Revision 5, Inspection and Test personnel,” dated April 6, 2021
- QAP-2.3, Revision 2, “Indoctrination and Training,” dated September 14, 2019
- QAP 3.2, “Control of design engineering nuclear and ASME,” Rev 2, dated August 27, 2019
- QAP-3.8, “Software Quality Assurance,” Revision 4, dated February 23, 2021
- QAP-7.1, “Control of Purchased Items and Services – Nuclear and ASME,” Revision 1, dated September 4, 2019
- QAP-7.3, “Annual Evaluations – ASME and Nuclear,” Revision 4, dated August 28, 2020
- QAP-7.7, Revision 00, “Counterfeit, Fraudulent and Suspect Items,” January 18, 2017
- QAP-7.10, Revision 02, “Quality Verification of Purchased Items,” dated March 9, 2020
- QAP-7.12, “Nuclear Supplier Audit/Survey Extension for Extenuating Circumstances,” Revision 0, dated October 7, 2020
- QAP-8.1, “Identification and Control of Items – Nuclear and ASME,” Revision 4, dated February 18, 2020
- QAP-8.2, Revision 2, “Control of Items with Limited Shelf life,” dated June 27, 2019
- QAP-9.2, Revision 1, “Nondestructive Examination Personnel Qualification and Certification,” dated July 8, 2016
- QAP-9.3, Revision 01, “Identification and Control of Weld Material,” dated August 2019
- QAP-12.1, “Control of Measuring and Test Equipment,” Revision 9, dated November 18, 2021
- QAP-13.1, Revision 02, “Handling, Storage, and Shipping,” dated September 4, 2019
- QAP-15.1, “Control of Non-Conforming Items – ASME,” Revision 1, dated September 3, 2019
- QAP-15.2, “10 CFR 21 Evaluating and Reporting,” Revision 5, dated March 28, 2022
- QAP-15.5, “Control of Nonconforming Items – Nuclear, Aerospace, and Industrial,” Revision 2, dated October 1, 2018

- QAP-16.1, “Corrective Action,” Revision 3, dated February 18, 2020
- QAP-16.2, “Corrective Action – Suppliers,” Revision 1, dated September 26, 2019

Design Documents:

- Evaluation and justification report for replacement of Neo Lube 100 with Loctite PST 580 thread sealant document #0010-001-0019, Rev 1, dated November 8/2013
- NTFS National Technical Systems report #548-8854-2, “Nuclear Qualification Test of First Response RTD/RTDT and thermocouple assemblies,” Rev B, October 21, 1982
- Document number 3035-P393334-012, “N9034S-2E IEEE 323-1974/1983 project specific environmental similarity analysis addendum to qualification report 06-8680-003,” Rev 1
- Document number and 9304S-2E323-1974/1983 project specific environmental similarity analysis addendum to qualification report 06 - 8680-003, Rev 1
- Document number 3077-393334-001, “Qualification Report for Ultra Energy and 9034 Narrow Range Resistance Temperature Detector (RTD),” Rev 2
- Document number 3035-442721-010, “Model 611-1B - C-4-C-81 - A2-0 IEEE 323-1974/1983 similarity analysis to qualification report 548-8854-2,” Rev B
- Document number 3035-321408-004, “IEEE 344-1987 project specific similarity analysis addendum to qualification report number 06 - 8680-003 Rev 1 and PEI-TR-880701–004,” Rev 3
- ECN 20019, “Bill of material and drawing mismatch for temperature requirements,” dated December 16, 2021
- ECN 20034, “Wording correction for qualification report and qualification report similarity analysis, “dated December 22, 2021
- ECN 20761, “Update original qualification to include epoxy substitution for RTD and 9004 tip,” dated November 11, 2022
- ECN 20777, “Similarity Analysis for 611-1B-C-4-C-81-82–0,” dated November 28, 2022
- Test report EGS-TR-903202-02, “Test Report for Nuclear Environmental Qualification/ Submergence Testing of DC3145 and GE7403 RTV as thread sealant for weed instrument company,” Rev A, dated May 28, 1991
- Job operation list report number 826943, dated October 23, 2001

Commercial Grade Dedication Packages (CGD) and Critical Characteristics Attribute and Verification (CCAV) sheets:

- Ultra energy QC vendor number 83498, “Commercial Grade Item/Service plan checklist report for method 2 CG survey plan checklist,” dated February 7, 2023
- Ultra energy QA vendor number 21075, Commercial grade item/service checklist, dated July 9, 2021
- Purchase order (PO) number 128692, “Material test service,” dated January 24, 2022
- PO number 130391 for taper tips for N9004 RTD's, Rev 0, dated December 7, 2022
- PO number 130723 for commercial grade machining and dimensional inspection service, dated March 20, 2023
- PO number 635-9833, “Transmitter pressure, QA 1, gauge 4 to 20 ma dc, 0 - 1500 psi, 1/4-inch NPT, stainless steel tag plate wired onto transmitter,” Rev 1, dated July 20, 2020
- PO number 635 9833, Certificate of conformance/compliance, Rev 1, dated November 12, 2020
- Nuclear Job Order 816630, “Transmitter number 1000-730-000 7T, 1500 PSI PG transmitter, 17 Volt, special temp camp, capital E capital G capital S, calibrated 0 to 1200 PSIG,” dated October 1, 2020

- PO for packing slip ring Part number 0885-106 - 1002T, dated April 8, 2019
- PO 50559732 for material testing services, dated May 7, 2018
- PO 123671 for material testing services for fasteners, dated December 17, 2019
- PO 116725 for material testing services, dated 1January 2, 2018.
- PO 120369 for independent testing service analysis, dated January 10, 2019.
- PO 120390 for standard calibration services blanket purchase order, dated January 11, 2019,
- Certificate of calibration For Calibration of fluke 8062A multimeters, serial number 682999, dated May 1, 2019
- PO 123213, Transmitter cover zero span DTN 2070-part number 0885-101-0655T, Rev 0, dated December 10, 2019
- Job operation list in report job 828332, dated February 10, 2022
- PO 713-1565 for job number 829337, dated March 17, 2022
- PO number 19759 for part number 0338-004-0012T, Stainless steel bracket per drawing number 0338-004-0012T dated March 16, 2021
- MMR number 9225, Bracket number 0338-004-0012T, dated September 15, 2020
- Purchase order 128087, Caliper Calibration Services, Rev 0, dated September 2, 2021
- Certificate of calibration for PO 128087, Calibration Services, dated October 7, 2021
- PO 126625, Independent Metallurgical Analysis Testing Service, Rev 0, dated January 11, 2021
- PO 127013, Thread Sealant 580 PST, 50 ml, May 10, 2021
- PO 713-1565, Temperature, QA one, TRD atmospheric, ambient air item number BL W-489-L, Rev 0, dated November 26, 2021
- PO 713-1565, Temperature, QA one, TRD atmospheric, ambient air item number BL W-489-L, Rev 1, dated November 30, 2021
- Certificate of Conformance 220-324-1316 for customer order 440360 item number BW L489L, dated March 24, 2022
- PO 128071 Item number 0885-102-0020T, Taper Tip for N9004 RTD's, Rev 0, dated November 2, 2021
- Certificate of conformance 2210190933 for item number 1343558, Nuclear Gauge Pressure Transducer, dated October 19, 2022
- PO number SNA10288327, Transmitter, Electronic Gauge Pressure, 4 to 20 milliamp DC, supply is 200 and 2000 PSI span calibrated range is 4 milliamps at 1715 PSIG to 20 milliamps at 2515 PM SIG, Rev 0, dated June 10, 2022
- Job order number 831972, 4N-E11GM-IIE2-BLF, Nuclear gauge pressure transmitter, dated September 1, 2022
- PO 125564, Spare parts assemblies, dated January 21, 2021
- PO 127892, Material Testing of fasteners and hardware, dated April 19, 2022
- PO 128087, Certificate of Calibration for temperature and humidity indicators, dated September 22, 2022
- PO 128087, Blanket PO for calibration and testing services, Rev 0
- PO 126625, Independent Metallurgical Analysis Testing, Rev 0, dated January 11, 2021
- PO 128898, Independent Metallurgical Analysis Testing, Rev 0 dated 1January 17, 2022
- Material return report 10200, Failed Chemical Analysis for 100 pieces, Rev 2, dated April 19, 2022
- PO 128093 For Gasket, O-ring, silicone, part number X0172B, dated January 20, 2022

Audit/Survey:

- Ultra Internal Audit Report 2022, dated January 30, 2023
- Survey Report of Turnco, dated July 22, 2021
- Survey Report of ARi Industries, dated January 20, 2022
- Third Party Audit Assessment Evaluation of SwRI Audit Report, dated November 17, 2020
- Third Party Audit Assessment Evaluation of Tioga Pipe Inc. Audit Report, dated August 24, 2021
- Audit Report of TE Connectivity, dated July 15, 2021

Purchase Orders:

- PO 02383300, dated June 19, 2018
- PO 02430213, Revision 1, dated September 10, 2021
- PO 126706, Revision 0, dated January 19, 2021
- PO 128087, Revision 0, dated September 2, 2021
- PO 128529, Revision 0, dated November 3, 2021
- PO 129339, Revision 1, dated March 28, 2022
- PO 130142, Revision 1, dated August 15, 2022
- PO 130344, Revision 0, dated March 23, 2023
- PO 130370, Revision 0, dated January 20, 2023
- PO 131035, Revision 0, dated March 23,2023
- PO 131151, Revision 0, dated March 21, 2023

Measuring and Test Equipment Documents:

- Certificate of Calibration, RTD Simulator, PE#01437, dated November 22, 2022
- Certificate of Calibration, DMM, PE#01977, dated August 17, 2022
- Certificate of Calibration, DMM, PE#02014, dated March 9, 2022
- Certificate of Calibration, DMM, PE#02151, dated March 9, 2022
- Certificate of Calibration, DMM, PE#02152, dated March 9, 2022
- Certificate of Calibration, Hipot, PE#02630, dated October 12, 2022
- Report of Calibration, Sensor, Light, White/UV-A, Radiometer, PE#02912, dated September 12, 2022

MRRs:

- MRR 10523, 10608, 10609, 10637, 10693, 10722, 10749, 10761
- MRR 10904, “Rejected Weld,” dated March 21, 2023

Corrective Action Reports (CARs) and Corrective Action/Preventive Action (CAPA) Reviewed During the NRC Inspection:

- CARs 2026, 2049, 2050, 2051, 2054, 2058, 2062, 2063, 2065
- CARs 2072, 2073, 2076, 2079, 2081, 2087, 2094, 2098, 2099, 2100
- CAPA 1065

CARs Drafted as a Result of the NRC Inspection:

- CARs 2107, 2108, 2109, 2110, 2111, 2112

10 CFR Part 21 Records

- 10CFR21 Problem Report No. 2020-1, dated October 5, 2020
- 10CFR21 Problem Report No. 2021-1, dated September 15, 2021
- 3077-911992-002, Revision 0, "Model N9355 Technical Evaluation for 10 CFR Part 21 Technical Problem Report 2021-1," dated October 22, 2021
- Email from Todd Reynolds, "Potential 10 CFR Part 21," dated September 15, 2021
- Email from Todd Reynolds, "RE: Potential 10 CFR Part 21," dated September 19, 2021
- Failure Analysis Report for RMA 911992, Revision 0b, dated August 12, 2021
- 10CFR21 Problem Report No. 2022-1, dated January 12, 2022

Training Records:

- Lead auditor training and qualifications of Laura Suddath
- Training and qualifications of Russell Hall, Ruth Perez, Bob Beran, Alan Barendregt, Jacob Durbin, Stephanie Lund, and John Hall

Miscellaneous:

- DAQ12, "Pressure Data Acquisition System Components," Revision 1, dated June 20, 2017
- DAQ13, "Pressure Data Acquisition System Components," Revision 1, dated June 20, 2017
- Quality Plan 3116-393140-001-PRC, "Differential Pressure Transmitter," Revision 6, dated May 21, 2021
- PO 108710, "316L SS Union," dated October 21, 2014
- 237-WPS, Revision 1 "Groove, no PWHT(As-welded)," dated June 5, 2019
- 237-PQR, Revision 0, "Procedure Qualification Record (PQR)-QW-483 Grove no PWHT," dated June 5, 2019.
- 0003-099-0022-PRC, Revision 2, "Weld Setup Sheet Machine P8-P8," dated October 14, 2014
- 0003-099-0408-PRC, Revision 0, "Weld Setup Sheet, Machine P8-P8" dated October 29, 2019
- 0003-099-0410-PRC, Revision 0, "Weld Setup Sheet, Machine P8-P8" dated October 30, 2019
- 0003-106-2260, "Fabrication Procedure FORN9034 FAST Time Response Sensor," Revision 3, dated November 5, 2019
- 0003-106-5008, "Manufacturing, Testing, and Handling for Model N-E13DM Nuclear Electronic Pressure Transmitter," Revision 2, dated June 12, 2001
- 0003-259-0032-PRC, "DTN2070 Transmitter Assembly, Trim, and Temp. Comp. Procedure," Revision 1, dated September 13, 2013
- 0003-260-1012, "Assembly Procedure for PG Capsule Insulation," Revision 2, dated July 23, 2012
- 0003-259-0031, "Flowserve DTN2070 Transmitter Final Assembly, Procedure," Revision

3, dated September 17, 2013
- 0377-P393334-001, Revision 4, “RTD Narrow Range Sensor,” dated September 18, 2019
- Job Order 831341, “Nuclear Differential Pressure Transmitter,” dated September 27, 2022
- Job Order Report 829562, “DTN 2070 Pressure Transmitter,” dated March 3, 2022
- Job Order Report 829561, “DTN 2070 Pressure Transmitter,” dated January 23, 2023
- BOM for job order 835405-0000, “RTD.” dated October 21, 2014
- Weld sign out/Sign in sheets related to Job order 830895, dated May 23, 2022