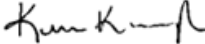




UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 14, 2024

MEMORANDUM TO: Russell Felts, Director
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

FROM: Kerri A. Kavanagh, Chief  Signed by Kavanagh, Kerri
Quality Assurance and Vendor Inspection Branch on 02/14/24
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

SUBJECT: TRIP REPORT BY THE NUCLEAR REGULATORY COMMISSION
STAFF OF THE NUPIC JOINT UTILITY TEAM AUDIT AT
ROSEMOUNT NUCLEAR INSTRUMENTS, INC.

On December 4 – 8, 2023, Odunayo Ayegbusi and Rebecca Romero-Devore of the Office of Nuclear Reactor Regulation, Division of Reactor Oversight, observed the performance of a Nuclear Procurement Issues Corporation (NUPIC) joint utility audit of Rosemount Nuclear Instruments, Inc., in Chanhassen, MN. Nebraska Public Power District led the audit, with participation from Xcel Energy, Ameren, New Brunswick Power (Canada), Nawah Energy Company (UAE), and Tennessee Valley Authority, using the NUPIC checklist and performance-based supplier audit (PBSA) worksheet. The Rosemount Nuclear Instruments, Inc. audit number is 25403. The purpose of the staff's observation was to assess the NUPIC quality assurance audit process used for suppliers of components to the nuclear industry. The trip report of the staff's observations includes a list of NUPIC audit team members observed. The NRC observers identified a few discrepancies during the week. The NUPIC audit team was receptive to the NRC's observations, however the NRC observers differed with the NUPIC auditors' evaluation of one discrepancy. The NRC staff is revising its internal procedure to provide guidance for resolving these types of issues.

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SUBJECT: TRIP REPORT BY THE NUCLEAR REGULATORY COMMISSION STAFF OF
THE NUPIC JOINT UTILITY TEAM AUDIT AT ROSEMOUNT NUCLEAR
INSTRUMENTS, INC. DATE: February 14, 2024

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DATE	02/06/2024	02/14/2024

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**NUCLEAR PROCUREMENT ISSUES CORPORATION AUDIT OBSERVATION TRIP
REPORT**

Vendor Audited: Rosemount Nuclear Instruments, Inc.
8200 Market Blvd.,
Chanhassen, MN 55317

Lead Licensee: Nebraska Public Power District

Lead Contact: Donald Green
NUPIC Lead Auditor
Nebraska Public Power District
(NPPD)
DLGreen@nppd.com

Nuclear Industry Activity: The Rosemount Nuclear Instruments, Inc., Chanhassen, MN facility is responsible for the supply of pressure transmitters, differential pressure transmitters, electrical connectors (quick disconnects), associated spare parts and repair services.

Observation Dates: December 4 through 8, 2023

Observers: Odunayo Ayegbusi, NRR/DRO/IQVB, Team Lead
Rebecca Romero-Devore, NRR/DRO/IQVB

Approved by: Kerri A. Kavanagh, Chief
Quality Assurance and Vendor Inspection
Branch Division of Reactor Oversight
Office of Nuclear Reactor Regulation

Subject

This trip report documents observations made by members of the U.S. Nuclear Regulatory Commission (NRC), Office Nuclear Reactor Regulation (NRR), Division of Reactor Oversight (DRO), during a Nuclear Procurement Issues Corporation (NUPIC) joint utility audit conducted on December 4-8, 2023, at Rosemount Nuclear Instruments, Inc., Chanhassen, MN (hereafter referred to as RNII).

Background/Purpose

NUPIC was formed in 1989, by a partnership involving all domestic and several international nuclear utilities. The NUPIC program evaluates suppliers furnishing safety-related components, services, and commercial-grade items to nuclear utilities. The NUPIC audit was performed using Revision 22 of the NUPIC audit checklist and the results will be provided to NUPIC members that procure parts and services from RNII.

The purpose of the NUPIC audit was to evaluate the implementation and effectiveness of RNII's Quality Assurance (QA) Program at the Chanhassen, MN facility. The audit team was comprised of individuals from the following NUPIC member utilities (Xcel Energy, Ameren, New Brunswick Power (Canada), Nawah Energy Company (UAE), and Tennessee Valley Authority) and was led by Nebraska Public Power District (NPPD). The technical specialist was from NPPD, and it was their responsibility verify RNII's ability to control critical areas of manufacturing and assembly, identified on the Performance Based Supplier Audit Worksheet (PBSA).

The purpose of the NRC staff's observation of this audit was to ensure that the NUPIC audit process continues to meet the requirements of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." The NRC staff implemented Inspection Procedure 43005, "NRC Oversight of Third-Party Organizations Implementing Quality Assurance Requirements," during the observation.

Observation Activities

The NRC observers independently assessed and reviewed RNII's implementation of selected portions of their QA program to evaluate whether NUPIC effectively identified and responded to issues. RNII provided the QA manual, implementing procedures, and samples of completed work products including, but not limited to, design packages, commercial grade item dedication plans, training and qualification records, and testing reports to the NUPIC audit team. The RNII QA manual is based on the American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance standard NQA-1-1994. The NRC staff observed that NUPIC appropriately focused their audit efforts on Appendix B criteria most relevant to RNII activities. In addition, the NRC staff observed the NUPIC technical specialist focused on the critical areas of manufacturing and assembly, described in the PBSA and the technical specialist's conclusions were drawn from a review of objective evidence reflective of RNII's performance. The NRC observers reviewed samples of the documentation provided by RNII for the audit team to draw independent conclusions. The NRC observers participated in discussions between the NUPIC audit team members and RNII staff, while refraining from directing or leading NUPIC, as to not interfere with the conduct of NUPIC's audit.

The QA areas reviewed during the audit included the following: contract review, design, commercial grade dedication, software quality assurance, procurement, fabrication/assembly

activities, material control and handling, storage and shipping, special processes, tests, inspections and calibration, document control/adequacy, organization/program, nonconforming items/Part 21, internal audits, corrective action, and training/certification. The NRC observers accompanied the NUPIC team members while they performed walkdowns of portions of the facility, observations of in-process production activities included: pressure transmitter housing hydro leak test, housing assembly, receipt inspection of filters, rework of returned pressure transmitters, final inspection of pressure transmitters, soldering of connector onto pressure transmitter printed circuit boards, control, handling and storage of safety related parts, as well as attending discussions between the NUPIC audit team members and RNII personnel.

Specific work activities reviewed by NUPIC, and observed by the NRC staff, included, but were not limited to, RNII design packages, purchase orders, procedure change notices, special processes, receipt inspections, identification of material tagging and nonconformance control, in-process inspections, corrective actions, training & qualification records, and internal audits.

Discussion

The NRC observers verified NUPIC adequately considered RNII's scope of supply and observed in-process work practices and completed work products to verify activities were performed in accordance with the vendor's QA program description and applicable procedures. The NRC observers confirmed the NUPIC audit team was implementing the latest revision of the NUPIC audit checklist, Revision 22, and NUPIC Document No. 11, "Joint Audit & Checklist Implementation Guideline," Revision 26, to conduct their assessment activities. The NRC staff observed the NUPIC audit team members completing sections of the NUPIC checklist and documenting objective evidence to support the conclusions discussed during the daily team meetings. The NRC staff also observed NUPIC's process for evaluating potential findings and deficiencies, including discussions during daily NUPIC debriefing activities with RNII personnel. The NRC staff also discussed their observations with NUPIC's lead auditor and team members.

Aside from the finding and deficiencies identified, the NUPIC audit team concluded that the vendor is effectively implementing their QA program in accordance with the applicable requirements of Appendix B to 10CFR Part 50 and 10CFR Part 21. There was one finding identified for inadequate lead auditor training and qualification and eight deficiencies were identified in the following areas: control of nonconforming materials, corrective action, commercial grade dedication, lead auditor training and qualification, internal audits, and supplier audits/surveys. The NRC staff observed that the vendor was generally receptive to the issues identified by the NUPIC audit team, and initiated actions to address those concerns.

The NRC observation team observed discrepancies with RNII's internal audit program and implementation of its corrective action program. Specifically, the NRC observed that RNII did not issue a corrective action program report for a nonconforming condition that was reported to RNII by one of its suppliers as required by RNII's procedure. In addition, NRC observed potential issues with the independence of lead auditors having direct responsibilities in the areas being audited. The discrepancies were discussed with the NUPIC audit team leader during the daily debrief. On January 4, 2024, the NUPIC team leader provided the NRC observers with the final audit report via email. The report documented both issues discussed above as deficiencies (one level of significance below a finding). The NRC observers found that NUPIC adequately evaluated the issue identified with RNII's corrective action program. However, the NRC observers determined that the issue related to the independence of the lead auditors warranted a higher significance than a deficiency, because the issue is greater than an administrative issue and RNII's internal audit procedure does not prohibit lead auditors from auditing their own work.

In response to these issues, the NRC staff presented its observations to NUPIC leadership and representatives during the NUPIC general meeting held on January 23, 2024. In addition, the NRC staff is revising Inspection Procedure (IP) 43005, "NRC Oversight of Third-Party Organizations Implementing Quality Assurance Requirements," to include guidance for documenting and communicating significant issues identified during NRC observations of NUPIC audits.

Conclusion

The NRC staff observed the NUPIC audit team conduct a review of the RNII QA program. The NRC staff confirmed that the NUPIC audit team focused on the most relevant portions of the QA program consistent with the vendor's scope of supply and performed their assessment activities through a combination of direct observation of in-process work activities and a review of completed work products. The NRC staff confirmed that the NUPIC audit team adequately implemented the guidance in the NUPIC audit checklist, documented objective evidence to support their conclusions, and conducted the audit in a courteous and professional manner. Aside from the discrepancies discussed above, the NRC staff concluded that the NUPIC auditors/technical specialist adequately completed their assigned programmatic elements in accordance with the NUPIC policies and procedures for conducting joint audit activities and resulted in a thorough and comprehensive evaluation of the vendor's program.

List of Participants

Name	Title	Affiliation	Entrance	Exit
Donald Green	Audit Team Leader	Nebraska Public Power District (NPPD)	X	X
Kyle Heidbrink	Technical Specialist	NPPD	X	X
Dennis Miller	Audit Team Member	NPPD	X	X
Paul Speyerer	Audit Team Member	Tennessee Valley Authority	X	X
John Phelps	Audit Team Member	Xcel Energy	X	X
Pat St. Onge	Audit Team Member	New Brunswick Power (Canada)	X	X
Hussain Al Jaber	Audit Team Member	Nawah Energy Company (UAE)	X	X
Hung Vu	Audit Team Member	Ameren	X	X
Odunayo Ayegbusi	NRC Observer	NRC	X	X
Rebecca Romero-Devore	NRC Observer	NRC	X	X

Documents Reviewed

Rosemount Nuclear, Inc.

- D9000115, Rosemount Nuclear & Subsea Quality Manual, Revision AC
- OP 0410, Procurement Document Control, Revision 6
- OP 0510, Manufacturing Procedures, Revision 6
- OP 0710, Selection and Approval of Suppliers, Revision 7
- OP 0720, Control of Purchased Safety-Related Components, Revision 6
- OP 0740, Service Agreements (Inter-Company Purchase Agreements), Revision 5
- OP 0810, Product Identification and Traceability, Revision 5
- OP 0910 Special Processes, Revision 5

OP 1510, Nonconforming Material Control, Revision 7
OP 1610, Corrective Action, Revision 5
OP 1620, Implementation of 10CFR Part 21, Revision 4
OP 1810, Quality Audits, Revision 6

NUPIC

NUPIC audit checklist, Revision 22

NUPIC Document No. 11, "Joint Audit & Checklist Implementation Guideline," Revision 26