

January 30, 2017

MEMORANDUM TO: Tim McGinty, Director
Division of Construction Inspection
and Operational Programs
Office of New Reactors

FROM: Terry W. Jackson, Chief **/RA/**
Quality and Vendor Inspection Branch-1
Division of Construction Inspection
and Operational Programs
Office of New Reactors

SUBJECT: TRIP REPORT BY THE NUCLEAR REGULATORY
COMMISSION STAFF OF THE NUPIC JOINT UTILITY TEAM
AUDIT AT CURTISS-WRIGHT NUCLEAR DIVISION CINCINNATI

On January 16-20, 2017, Stacy Smith and Ashley Ferguson of the Office of New Reactors (NRO), Division of Construction Inspection and Operational Programs, observed the performance of a Nuclear Procurement Issues Committee (NUPIC) joint utility audit of Curtiss-Wright Nuclear Division Cincinnati, in Cincinnati, OH. Tennessee Valley Authority led the audit, with participation from Omaha Public Power District, Talen Energy, Nebraska Public Power and Societatea Nationala Nuclearelectrica (SNN) using the NUPIC checklist, Revision 20. 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, including a list of persons contacted, is enclosed.

Enclosure:
As stated

CONTACT: Stacy Smith, NRO/DCIP/QVIB-1
(301) 415-6025

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NAME	AFerguson*	SSmith	TJackson
DATE	01/25/17	01/25/17	01/30/17

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NUCLEAR PROCUREMENT ISSUES COMMITTEE AUDIT
OBSERVATION TRIP REPORT

Vendor Audited: Curtiss-Wright Nuclear Division Cincinnati
4600 E Tech Dr.
Cincinnati, OH 45245

Lead Licensee: Tennessee Valley Authority (TVA)

Lead Contact: Dana Nguyen Truong

Nuclear Industry Activity: Curtiss-Wright Nuclear Division Cincinnati (formerly QualTech NP) is a provider of Environmental Qualification (EQ), Seismic Testing and Commercial Grade Dedication (CGD) service to the nuclear power industry. This Curtiss-Wright location no longer maintains ASME certification. In addition, this location moved welding and machining activities to the Curtiss-Wright location in Huntsville, AL.

Observation Dates: January 16-20, 2017

Observers: Stacy Smith NRO/DCIP/QVIB-1
Ashley Ferguson NRO/DCIP/QVIB-3

Approved by: Terry W. Jackson, Chief
Quality and Vendor Inspection Branch-1
Division of Construction Inspection
and Operational Programs
Office of New Reactors

Subject

This trip report documents observations made by members of the Nuclear Regulatory Commission's (NRC) Office of New Reactors (NRO), Division of Construction Inspection and Operational Programs (DCIP), during a joint utility audit conducted on January 16-20, 2017, at the Curtiss-Wright Nuclear Division facility located in Cincinnati, OH.

Enclosure

Background/Purpose

The Nuclear Procurement Issues Committee (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 and services and commercial-grade items to nuclear utilities. The NUPIC audit team followed the NUPIC audit process and plans to provide the results to NUPIC members that procure parts and services from Curtiss-Wright Nuclear Division.

This audit was performed using the NUPIC Audit Checklist, Revision 20. The purpose of the audit was to evaluate the implementation and effectiveness of Curtiss-Wright Nuclear Division Quality Assurance (QA) Program. The audit also included an assessment of the effectiveness of corrective actions that Curtiss-Wright Nuclear Division Cincinnati had taken to close the previous five minor administrative findings identified during the 2014 NUPIC audit led by Duke Energy. This eight person audit team was led by Tennessee Valley Authority (TVA) and included representatives from Omaha Public Power District (OPPD), Nebraska Public Power (NPP), Societatea Nationala Nuclearelectrica (SNN), and Talen Energy.

The purpose of the NRC staff's observation of this audit was to ensure the NUPIC audit process continues to meet the requirements 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 staff implemented Inspection Procedure 43005, "NRC Oversight of Third-Party Organizations Implementing Quality Assurance Requirements," during the observation.

Discussion

Curtiss-Wright Nuclear Division provided its QA manual, other implementing procedures, and previously requested work packages to the NUPIC audit team. The NUPIC audit team reviewed the implementation of the requirements of Appendix B to 10 CFR Part 50 in the QA program and supporting implementing procedures, evaluated the documentation associated with the activities that had been performed, and discussed the activities with Curtiss-Wright Nuclear Division personnel. The NUPIC audit team observed work practices to verify activities were in accordance with applicable procedures.

The quality areas reviewed during the audit included the following: design control, commercial-grade dedication (CGD), equipment qualification, procurement, software QA, audit, records, document control, organization, training, measuring and test equipment (M&TE), corrective action, nonconforming items, and 10 CFR Part 21. In addition, two technical specialists assisted the NUPIC audit team on the review of CGD and seismic qualification. The NUPIC audit team provided a copy of the NRC's safety culture policy to Curtiss-Wright Nuclear Division and discussed the importance of incorporating safety culture into all aspects of the QA process. The NUPIC audit team conducted daily team meetings to discuss their observations and findings.

The NRC staff noted Curtiss-Wright Nuclear Division's identification of two embedded digital devices that were not clearly identified as such. Curtiss-Wright Nuclear Division noted these changes during destructive testing of the relays, a practice they use to ensure the correct critical characteristics are identified during the CGD process. The issue of embedded digital devices was previously documented in NRC information notice (IN) 2016-01 (ADAMS Accession No. ML15295A173). The relays identified by Curtiss-Wright Nuclear Division are the

Omron Timing Relay (Part number H3CA-A) and the Basler Protective Relay (Part Number O/U T3G-E1J-A6N2F).

During the exit meeting, the NUPIC audit team presented five findings to Curtiss-Wright Nuclear Division management in the areas of contract review, identification and marking of materials, document control, CGD, and procurement. The NUPIC audit team identified that previously corrected audit findings have been closed appropriately. With the exception of the audit findings identified, the NUPIC audit team determined that Curtiss-Wright Nuclear Division was effectively implementing its QA program for the program elements that were audited. In addition, the NUPIC audit team concluded that the findings had no impact on product quality.

Conclusions

For the audit observation, the two NRC staff members each verified a sample of the audit checklist review areas. The NRC staff observed the NUPIC audit team members performing their portions of the audit. Specifically, the NRC staff observed NUPIC's review and evaluation processes for the implementation of Curtiss-Wright Nuclear Division's QA program for ensuring licensee procurement requirements were adequately incorporated into qualification and CGDs. The NRC staff focused their observation on the technical specialists and observed seismic qualification test set up and acceptance testing performed for the CGD of items being supplied to the nuclear industry. In addition, the NRC staff reviewed a sample of CGD packages to independently assess the implementation of Curtiss-Wright Nuclear Division's QA program.

The NRC had access to all interactions between Curtiss-Wright Nuclear Division and the NUPIC audit team, as well as access to the same records reviewed by them. The NRC staff noted that the NUPIC audit team was technically capable and effectively engaged the vendor during interviews and while observing QA and qualification activities. The NRC staff also noted the communication between the team lead and team members fostered a sharing environment, and specifically, the team worked together to audit and disposition issues across different audit areas in an effective and efficient manner to verify the implementation of Curtiss-Wright Nuclear Division's QA program.

The NRC concluded that the NUPIC checklist was effectively implemented and resulted in appropriate findings. The NRC staff found that the NUPIC audit team adequately addressed the specific areas of the checklist. However, the NRC staff noted the volume of checklist areas that need to be assessed could challenge the audit team's ability to divert from the checklist and investigate specific technical issues. The NRC also noted that, although not incorporated into this inspection, NUPIC members are discussing how to incorporate cyber security into the NUPIC audits as the requirements of 10 CFR 73.54, "Protection of digital computer and communication systems and networks," come into effect for the nuclear industry this year.

List of Participants

Name	Title	Affiliation	Entrance	Exit
Dana Nguyen Truong	Team Leader	TVA	X	X
Penny Selman	Technical Specialist	TVA	X	
Steve Lusk	Auditor	TVA	X	X
John Larson	Auditor	NPP	X	X
Mihai Dudu	Auditor	SNN	X	X
Gerard Machalick	Auditor	TLN	X	X
Bob Bunz	Auditor	OPPD	X	X
Steve Martin	Technical Specialist	TVA	X	X