

October 30, 2018

MEMORANDUM TO: William Jones, Acting Director
Division of Construction Inspection
and Operational Programs
Office of New Reactors

FROM: Kerri A. Kavanagh, Chief /RA/
Quality Assurance Vendor Inspection Branch-2
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 FRAMATOME

On August 13-17, 2018, Nicholas Savvoir and Andrea Keim of the Office of New Reactors, Division of Construction Inspection and Operational Programs, observed the performance of a Nuclear Procurement Issues Committee (NUPIC) joint utility audit of Framatome, in Richland, WA. Tennessee Valley Authority led the audit, with participation from Arizona Public Service, Duke Energy, Entergy, Exelon Corporation, First Energy Corporation, Next Era Energy, Taiwan Power Company, Talen Energy, and Xcel Energy using the performance based supplier audit worksheets and NUPIC checklist. The Framatome audit number 24539 is a part of a mega audit number 24537. NUPIC mega audit process allows focused audits at different locations while maintaining a full scope audit of the designated supplier. 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

CONTACTS: Andrea Keim, NRO/DCIP/QVIB-2
(301) 415-1671

Nicholas Savvoir, NRO/DCIP/QVIB-1
(301) 415-0256

SUBJECT: TRIP REPORT BY THE NUCLEAR REGULATORY COMMISSION STAFF OF
THE NUPIC JOINT UTILITY TEAM AUDIT AT FRAMATOME
Dated: October 30, 2018

DISTRIBUTION

TJackson
KKavanagh
ASakadales

ADAMS Accession No.: ML18260A079

NRO-002

OFFICE	NRO/DCIP/QVIB-1	NRO/DCIP/QVIB-2	NRO/DCIP/QVIB-2
NAME	NSavwoir	AKeim	KKavanagh
DATE	09/26/18	09/27/18	10/30/18

OFFICIAL RECORD COPY

NUCLEAR PROCUREMENT ISSUES COMMITTEE AUDIT
OBSERVATION TRIP REPORT

Vendor Audited: Framatome
2101 Horn Rapids Rd,
Richland, WA 99354

Lead Licensee: TVA

Lead Contact: Ron Forester

Nuclear Industry Activity: The Richland site is the fuel fabrication hub for Framatome in North America. The site produces uranium dioxide (UO₂) powder, pellets, fuel rods, and fuel assemblies and specializes in designs for pressurized water reactors and boiling water reactors. Along with fuel design and manufacturing, the site also includes state-of-the-art testing and component fabrication facilities. The Richland site is equipped to handle uranium recovery and recycling. It is licensed by the US Nuclear Regulatory Commission until 2049.

Observation Dates: August 13-17, 2018

Observers: Nicholas Savvoir NRO/DCIP/QVIB-1
Andrea Keim NRO/DCIP/QVIB-2

Approved by: Kerri Kavanagh, Chief
Quality Assurance Vendor Inspection Branch-2
Division of Construction Inspection
and Operational Programs
Office of New Reactors

Subject

This trip report documents observations made by members of the U.S. Nuclear Regulatory Commission (NRC), Office of New Reactors (NRO), Division of Construction Inspection and Operational Programs (DCIP), during a NUPIC joint utility audit conducted on August 13-17, 2018, at Framatome in Richland, WA.

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 Framatome.

This audit was performed using the NUPIC audit checklist, Revision 20. The purpose of the audit was to evaluate the implementation and effectiveness of Framatome Quality Assurance (QA) Program at Richland, WA. The audit also included an assessment of the effectiveness of corrective actions that Framatome had taken to previous findings in selected areas identified during the 2016 NUPIC audit led by Next Era Energy (NEE). This 17 person audit team was led by Tennessee Valley Authority (TVA), with participation from Arizona Public Service (APS), Duke Energy (DPC), Entergy (ENT), Exelon Corporation (EXL), First Energy Corporation (FEC), NEE, Taiwan Power Company (TPC), Talen Energy (TLN), and Xcel Energy (XEL).

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 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.

Discussion

Framatome provided the QA manual and other implementing procedures 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 Framatome personnel. The NUPIC audit team observed in-process 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), procurement, special processes, software QA, audit, records, document control, organization, training, inspections, test control, measuring and test equipment (M&TE), material control, corrective action, nonconforming items and 10 CFR Part 21. Specific work activities reviewed by NUPIC and observed by the NRC observers included UF₆ dry conversion processing, pelletization, pellet grinding, pellet sorting, ceramic quality control inspection, density checks, rod loading, rod weighing, spring insertion, end-cap welding, active/passive rod scanning, helium leak test, rod alignment, and final fuel assembly and inspection. The NUPIC audit team conducted daily team meetings to discuss their observations and findings and also conducted a daily briefing with Framatome personnel. In addition the NRC observers conducted a daily debrief with the NUPIC team lead.

As part of “Delivering the Nuclear Promise,” in June 2017, the Nuclear Energy Institute (NEI) issued Efficiency Bulletin: 16-28b, “Establish Common Finding/Deficiency Definitions Used During Vendor Audits.” NUPIC implemented this approach to identify issues of significance at a common threshold at the Framatome audit.

The NRC observed NUPICs findings and deficiencies determinations during daily debriefs. NUPIC’s recommendations to Framatome consisted of updating procedures and correcting typos. During the exit meeting, the NUPIC audit team presented three potential deficiencies to Framatome management consisting of 1) a procedure revision, 2) procedure use 3) administrative training records.

The NUPIC audit team determined that Framatome was effectively implementing its QA program for the program elements that were audited. In addition, the NUPIC audit team concluded that the deficiencies had no impact on product quality.

Conclusions

For the audit observation, the NRC staff members each verified a sample of the audit checklist review areas in addition to performance based supplier audit (PBSA) worksheets. The NRC staff observed the NUPIC audit team members perform their portions of the audit. Specifically, the NRC staff observed NUPIC’s review and evaluation processes for the implementation of Framatome’s QA program for ensuring licensee procurement requirements, design requirements and associated design specifications were adequately incorporated into the qualification and commercial-grade dedications.

The NRC staff observed the daily team meetings to verify that the NUPIC audit team was adequately addressing issues and effectively verifying the implementation of QA program requirements. The NRC staff observed shop manufacturing and inspection activities of pellets, grids, skeletons, rods and final fuel assemblies among others. The NRC staff noted that the NUPIC audit team engaged the NRC throughout the audit, and when requested, provided clarification on regulatory positions. The NRC also had access to all interactions between Framatome and the NUPIC audit team, as well as access to the same records reviewed by them. In addition, the NUPIC audit team was technically capable and effectively engaged the vendor; asking the right questions and challenging the vendor as required. Furthermore, the NUPIC audit team was effective at communicating with each other.

The NRC concluded that the NUPIC checklist and PBSA worksheets were effectively implemented and resulted in appropriate performance-based deficiencies. The NRC staff found that this very large NUPIC audit team adequately addressed the specific areas of the checklist on which the NRC staff focused their review. The NRC inspectors also noted that the large NUPIC audit team was able to perform a technically focused audit for all areas of program implementation.

List of Participants

Name	Title	Affiliation	Entrance	Exit
Ronald Forster	Audit Leader	TVA	X	X
Charles Brown	Mega Audit Leader	DUKE	X	X
John Sheffield	Auditor	EXL	X	X
Greg Przyjemski	Auditor	TLN	X	X
Jeff Curry	Auditor	ENT	X	X
Loren Ernst	Auditor	DPC	X	X
Jim Gill	Auditor	NEE	X	X
Ed Porto	Auditor	APS	X	X
Dan Gallagher	Auditor	FEC	X	X
Jay Colwell	Auditor	XEL	X	X
Chih-Wei Liu	Auditor	TPC	X	X
Colin Lancaster	Technical Specialist	DPC	X	X
Sam Maslonkowski	Technical Specialist	XEL	X	X
Moussa Mahgerefteh	Technical Specialist	EXL	X	X
Mike Howard	Technical Specialist	TVA	X	X
Michelle Hynes	Technical Specialist	EXL	X	X
Luke McIntyre	Technical Specialist	APS	X	X
Jeff McGuire	Technical Specialist	TVA	X	X