



SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. CERTIFICATE/QUALITY ASSURANCE PROGRAM (QAP) HOLDER: Orano TN Americas, LLC 7135 Minstrel Way, Suite 300 Columbia, MD 21045		2. NRC/REGIONAL OFFICE Headquarters U. S. Nuclear Regulatory Commission Mail Stop 3WFN 14C-28 Washington, DC 20555-0001	
REPORT NUMBER(S) 07201042/2019-201			
3. CERTIFICATE/QAP DOCKET NUMBER(S) 07201042	4. INSPECTION LOCATION Kernersville, NC	5. DATE(S) OF INSPECTION December 3-5, 2019	

CERTIFICATE/QUALITY ASSURANCE PROGRAM HOLDER:

The inspection was an examination of the activities conducted under your QAP as they relate to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your QAP Approval and/or Certificate(s) of Compliance. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

- ☐ 1. Based on the inspection findings, no violations were identified.
- ☐ 2. Previous violation(s) closed.
- ☒ 3. The violations(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.

1 Non-cited violation(s) was/were discussed involving the following requirement(s) and Corrective Actions(s):

Refer to NRC Form 591S Part 2 for Non-cited violation.

- ☐ 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.
(Violations and Corrective Actions)

Statement of Corrective Actions

I hereby state that, within 30 days, the actions described by me to the Inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

TITLE	PRINTED NAME	SIGNATURE	DATE
CERTIFICATE/QAP REPRESENTATIVE	Douglas Brownson, Director Quality Assurance and Safety	<i>Douglas Brownson</i>	1/16/20
NRC INSPECTOR	Earl Love, Team Leader Sr. Transportation and Storage Safety Inspector	<i>Earl Love</i>	1/16/2020
BRANCH CHIEF	Alayna Pearson, Acting Branch Chief		

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(Continued)

10 CFR 71.111, "Instructions, procedures and drawings," states, in part, that the certificate holder shall prescribe activities affecting quality by documented procedures of a type appropriate to the circumstances and shall require that these procedures be followed.

Contrary to the above, the NRC identified the following two examples where TN Fabrication did not follow prescribed procedures for activities affecting quality:

- 1) TNF failed to properly identify and segregate from production an important-to-safety nonconforming basket assembly component, Transition Rail (R45), associated with a TNF nonconformance report (No.19-527).
- 2) TNF failed to remove from storage a important-to-safety nonconforming dry shielded canister assembly component, Outer Top Cover Plate, dispositioned as "Scrap."

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	TN Americas, LLC/Orano 7135 Minstrel Way, Suite 300 Columbia, MD 21045
Licensee/Certificate Holder contact and phone number	Douglas Brownson, Director of Quality Assurance 410-910-6963
Docket No.	072-01042
Inspection Report No.	072-1042/2019-201
Inspection Dates(s)	December 3-5, 2019
Inspection Location(s)	Kernersville, NC
Inspectors	Earl Love, Team Leader, Senior Transportation and Storage Safety Inspector Jeremy Tapp, Transportation and Storage Safety Inspector Jennifer Dalzell, ISFSI and Decommissioning Inspector (Region III)
Summary of Findings and Actions	<p>On December 3-5, 2019, the U.S. Nuclear Regulatory Commission (NRC) performed an announced inspection of TN Americas LLC's (TN), Fabrication (TNF), located in Kernersville, NC. The purpose of the inspection was to assess TN's compliance with 10 CFR Parts 21 & 72, and to ensure that the storage system for which TN is the Certificate of Compliance (CoC) holder can be verified to comply with Part 72 in design, procurement, and fabrication requirements, as applicable. The focus of the inspection was to determine whether TN activities specific to the NUHOMS® EOS-37PTH Dry Shielded Canisters (DSCs) are in accordance with TN's NRC-approved Quality Assurance (QA) program requirements, regulatory requirements, and CoC No. 72-1042.</p> <p>At the time of the inspection, TN management informed the inspection team that due to other shop priorities, the EOS DSC fabrication activities were significantly reduced to activities associated with limited welding of DSC shell assemblies and inspections. Because of this, the inspection team determined to conduct a second inspection specific to fabrication activities, to be performed no later than February 2020.</p> <p>Based on the results of this programmatic inspection, the NRC determined that a Severity Level IV Violation of NRC requirements occurred. The violation is cited in NRC Form 591S as a non-cited Severity Level IV violation (NCV) and the circumstances surrounding it is described in detail in the inspector notes.</p>
Lead Inspector Signature/Date	 01/16/2020
Inspector Notes Approval Branch Chief Signature/Date	

Inspection Background

TN was granted an NRC 10 CFR Part 71 (also applicable to Part 72) QA Program Approval (71-0250), Revision 16, to the TN QA Program Description Manual (QAPDM) for 10 CFR Part 71, Subpart H and 10 CFR Part 72, Subpart G, as a prerequisite to its using Type B Casks for storage of radioactive material. The inspection was specific to the NUHOMS EOS-37PTH DSC as described in the TN safety analysis report (SAR) and NRC safety evaluation report.

<u>Part 72 Model #</u>	<u>Docket #</u>	<u>Amend. #</u>	<u>Effective Date</u>	<u>SAR</u>
EOS-37PTH, and -89BTH	72-1042	0 A1/R8 A2/R2	June 07, 2017 Rulemaking Application accepted 11/2019	Rev. 7 Rev. 1

Inspection History

The NRC last inspected TNF in June 2018. This inspection was a routine periodic assessment of TNs QAP implementation associated with fabrication of TN's NUHOMS DSC's (excluding EOS). The team assessed management controls, design controls, and fabrication controls specific to TN CoC 72-1004 (NUHOMS 61 BTH Type 1). The team assessed that TN was adequately and effectively implementing their NRC approved QAP. One non-cited Severity Level IV violation with four examples of non-compliance was identified by the team and is described in inspector notes (NRC's Agencywide Documents Access and Management System [ADAMS] Accession No. ML18215A387). Contrary to the requirements of 10 CFR 72.150, "Instructions, procedures, and drawings," there were three examples from the inspection where TN did not follow its written procedures and one example where TN did not have adequate procedures in place for quality activities. The violation was entered into TN's corrective action program as CARs 18-050, 18-054, 18-048 and 18-052, respectively for each example.

During the period of July 22 through 24, 2019, the NRC conducted a team inspection of CoC 1004 DSCs at Hitachi Zosen (HZ), Japan (ADAMS No. ML19291C776). The team identify two violations of NRC requirements because TN did not perform a written evaluation in accordance with 10 CFR 72.48 regulations and did not update the final safety analysis report (FSAR) periodically with the latest information developed. The team discovered that 24 of 24 poison plates material associated with the fabrication of the NUHOMS 32PT DSC fuel basket contained cracks that exceeded the acceptance criteria in the procurement design specification. The team noted TN did not perform a written evaluation which provided the bases for the determination that cracked poison plates for the NUHOMS 32PT did not require a license or CoC amendment pursuant to the regulations in 10 CFR 72.48 paragraph (c)(2). TN entered this violation into their corrective action program for resolution under CAR No. 2019-345. In addition, the team identified lack of performance of visual examination nor absorber plates FSAR acceptance criteria to ensure that they are free of cracks. TN entered this violation into their corrective action program for resolution under CAR No. 2019-346. Follow-up to TN CARs is required in part because at HZ the 32PT DSC basket assemblies in question were being manufactured for Dominion for use at the Millstone Nuclear Power Plant. Dominion Generation signed a contract

for a total of 75 NUHOMS EOS 32PTH storage systems that will be used at both Surry and North Anna Power Stations through 2038.

Primary Inspection Procedures/Guidance Documents

IP-60852, "ISFSI Component Fabrication by Outside Fabricators "

NUREG/CR-6407, "Classification of Transportation Packaging and Dry Spent Fuel Storage System Components According to Importance to Safety"

NUREG/CR-6314, "Quality Assurance Inspections for Shipping and Storage Containers"

Regulatory Guide 7.10, "Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material"

INSPECTOR NOTES: APPLICABLE SECTIONS FROM IP 60852 WERE PERFORMED DURING THE INSPECTION WITH RESULTS DOCUMENTED BELOW UNDER THE BASIC HEADINGS OUTLINED IN NUREG-6314.

4.1 Management Controls

4.1.1 Quality Assurance Policy

Since the previous inspection at TNF (previously (Columbiana Hi-Tech (CHT)) in June 2018, the QA program has been changed from CHT's corporate Nuclear Quality Assurance Manual to TN, QAPDM. Therefore, the team reviewed TN's QAPDM, Revision 16, TN Implementing Procedures (TIPs), and Fabrication Program Manual (FPM), and assessed the effectiveness of the QA program implementation at TNF, Kernersville, NC. The team conducted reviews of TN's quality program, policies, and procedures, and discussed portions of the reviewed documents with selected personnel to determine whether activities subject to 10 CFR Part 72 were adequately controlled and implemented under TN's NRC-approved QA program. Further, the team had discussions with QA personnel to assess their organizational independence from cost, schedule, and production activities. The team found that no changes had been made to the QAPDM since the last TN inspection at its corporate office in Columbia, MD in March 2019. Overall, with the exception of one SLIV NCV, implementation of TN's QAPDM, at TNF, was assessed to be adequate.

4.1.2 Nonconformance and Corrective Action Controls

The team reviewed TN's nonconformance program at TNF to assess the effectiveness of measures established to control materials, parts, components, and services that have been identified by TN as not conforming to specified requirements. The team also reviewed TN's corrective action program (CAP) to assess the effectiveness of the measures established to identify and correct issues, and if required, prevent recurrence.

The team reviewed the following TN quality procedures applicable to TNF:

FPM 15.2 "Fabrication - Control of Nonconforming Items," Revision 1

TIP 16.1 "Corrective Action," Revision 29

The team assessed that the quality procedures provided adequate guidance for the processing of nonconforming items and corrective actions and reviewed a selection of both nonconformance reports (NCRs) and corrective action reports (CARs) issued for the NUHOMS EOS system fabrication activities performed at TNF in 2018 and 2019.

Nonconformance Controls

The team noted that TN Fabrication was still considered a supplier to TN as it relates to performing engineering evaluations of “use-as-is” or “repair” dispositions as supplier NCRs (SNCRs) were initiated and documented for those cases. The team assessed that for the 13 NCRs and 7 SNCRs reviewed, they had been appropriately dispositioned and contained adequate justification for those with a “use-as-is” or “repair” disposition. In addition, TN assessed and approved each NCR dispositioned as required.

The inspectors reviewed the requirements for the identification and segregation of nonconforming components to verify that the current nonconforming items met the requirements in FPM 15.2. The team selected two NCRs that were still open for the NUHOMS EOS project to verify that they were adequately controlled; specifically, that the item was tagged and identified (marking or tag) and segregated, as practical. The team identified that one of the nonconforming items specified, a R45 transition rail, was not tagged with a red NCR tag or segregated as required. The item was not in the normal nonconforming item storage area and was found mixed in with other acceptable items. The FPM 15.2, requires that nonconforming items be identified by legible marking, tagging, or other methods not detrimental to the item and that nonconforming items be segregated, when practical, by placing them in a clearly identified and designated hold area until properly dispositioned. Contrary to this, TN failed to identify and segregate the nonconforming R45 transition rail associated with TNF NCR No. 19-527. This is a violation of 10 CFR 72.150, Instructions, procedures, and drawings for failure to comply with fabrication procedure requirements. 10 CFR 72.150 requires, in part, the certificate holder shall prescribe activities affecting quality by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall require that these instructions, procedures, and drawings be followed. The team determined that the violation was more than minor because the failure to follow FPM 15.2 resulted in a nonconforming item to be uncontrolled and therefore potentially used in production.

In addition, during a walkdown of the facility outdoor storage areas, the team identified a important to safety (ITS), Category A component, outer top cover plate (OTCP), marked “Scrap” without a red tag affixed to the cover. This item was documented on a closed TNF NCR (No. 19-295) dispositioned as scrap without proper disposal and NCR closure. The team noted this as a second example of a violation of 10 CFR 72.150, Instructions, procedures, and drawings for failure to follow FPM 15.2, Steps 4.5.3 and 4.5.3.1. 10 CFR 72.150 requires, in part, the certificate holder shall prescribe activities affecting quality by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall require that these instructions, procedures, and drawings be followed. Contrary to this, TN failed to dispose of a nonconforming OTCP as required. The team determined that the violation was more than minor

because the failure to follow FPM 15.2 resulted in a nonconforming item dispositioned Scrap to not be disposed of before closure of the associated NCR that controlled the item and prevented it from further use.

The team evaluated both examples as a violation in accordance with Section 2.3 of the NRC Enforcement Policy and characterized the findings as a NCV Severity Level IV violation (NCV). TN identified the issues in CAR Nos. 2019-497 and 498, respectively.

Corrective Action Controls

The team assessed that for the eight CARs reviewed, they had been adequately documented and the corrective actions taken were adequate. The team also reviewed TNF's (previously CHT) corrective actions associated with the NCV with four examples identified during the 2018 inspection, to verify the corrective actions had been adequately completed. Specifically, the first example of the violation was regarding CHT's failure to write a CAR for conditions adverse to quality that were identified during an internal shop surveillance. CHT wrote CAR 2018-050, dated June 20, 2018 to document CHT's corrective actions for the violation. For this issue, CHT corrected the surveillance reports where applicable to document that the conditions were corrected during the surveillance. The team determined the corrective actions in response to the first example of the NCV were adequate.

For the second example of the violation, it was regarding CHT's failure to immediately document conditions adverse to quality identified as part of an external audit, which were not documented for approximately two months. CHT wrote CAR 2018-054, dated June 21, 2018 to document CHT's corrective actions for the violation. For this issue, CHT planned to revise P/P Q-11 procedure for corrective actions to ensure the timely documentation of external audit findings. However, during the corrective action process, CHT transitioned to TN QAPD, which includes TIP 16.1 that ensures the timely documentation of external audit issues. The team determined the corrective actions in response to the second example of the NCV violation were adequate.

For the third example of the violation, it was regarding CHT's failure to complete the Record of Welder Performance Qualification form for a welder. CHT wrote CAR 2018-048, dated June 20, 2018 to document CHT's corrective actions for the violation. For this issue, CHT completed the required forms as necessary. The team determined the corrective actions in response to the third example of the NCV were adequate.

For the fourth example of the violation, it was regarding CHT's failure to have adequate procedures for the control and storage of new and recycled used weld flux in accordance with the weld flux manufacturer's written recommendations. CHT wrote CAR 2018-052, dated June 21, 2018 to document CHT's corrective actions for the violation. For this issue, CHT obtained humidity indicators for welding personnel to monitor shop conditions and issued shop operating procedure 014-0 to provide instructions for storage and re-drying of weld flux. During an audit performed at CHT in September 2018, it was determined that the corrective actions did not appear to be effective. This was documented in CAR 2018-320, dated November 19, 2018. The additional corrective actions taken included revision of FPM 9.1 for control of special

processes to ensure the flux manufacturer's recommendations are followed and provided specific requirements for re-drying of weld flux. The team determined the corrective actions in response to the fourth example of the NCV violation were adequate.

This NCV from the 2018 inspection at CHT is considered closed.

Additionally, the team reviewed TN's corrective actions associated with two NCV's identified during the 2019 inspection at HZ, Ariake Works in Japan, to verify the corrective actions had been adequately completed. Specifically, the first violation was regarding TN's failure to perform a written evaluation under 10 CFR 72.48(c)(2), which provided the bases for the determination that cracked poison plates for the NUHOMS 32PT did not require a license or CoC amendment pursuant to the regulations in 72.48(c)(2). TN wrote CAR 2019-345, dated September 23, 2019 to document TN's corrective actions for the violation. For this issue, TN revised the applicable licensing review, which included performance of the full evaluation under 72.48(c)(2) and provided training on the 72.48 screening process that should have led to a full evaluation for adverse effects on design functions described in the FSAR. The team determined the corrective actions in response to the first example of the NCV were adequate.

For the second violation, it was regarding TN's failure to periodically update the FSAR to assure that the information included in the report contains the latest information developed. Specifically, Section M.9.1.1 of the FSAR including the licensing drawing did not contain the latest information developed to accept cracked poison plates. TN wrote CAR 2019-346, dated September 23, 2019 to document TN's corrective actions for the violation. For this issue, TN revised the applicable licensing review to correct the FSAR inconsistencies for DSCs with bent poison plates and prepared a new licensing review to correct inconsistencies in other applicable FSAR chapters. Specifically, the requirement to ensure poison plates are free of cracks was removed as superficial cracking is not a critical variable of the material. In addition, TN revised quality procedures to 1) include guidance on when FSAR changes are or are not needed, and 2) add a section to provide a documented assessment of the consistency of changes made to the FSAR. The team determined the corrective actions in response to the second NCV were adequate.

The NCV's from the 2019 inspection of TN at HZ are considered closed.

Overall, except for the one NCV the team concluded that TNF had an adequate nonconformance control and corrective action program in place to identify, track and resolve quality related deficiencies and deviations.

4.1.3 Documentation Controls

The team reviewed TN FPM 2.1, Revision 3, "Drawing Specification Procedure & Customer Contract Review and Control," and FPM 5.1, Revision 4, "Traveler Preparation, Verification and Control," for the quality assurance requirements for drawing control, work travelers, and to verify that design drawings were being properly implemented, as applicable. TNF's Manufacturing Engineer is responsible for performing reviews of customer contracts and project plans to

identify any areas beyond TNF's ability to meet contract or regulatory requirements, initiates fabrication drawings, as well as, a Manufacturing Plan and Quality Record (MPQR) that includes weld maps, data sheets, drawings, and design specifications. TNF's Fabrication Project Manager (FPM) controls the MPQR and conducts a review of controlled documents for adequacy, completeness and approval prior to shop distribution. In addition, the FPM along with TNF's Material Control Coordinator assures configuration control of the latest approved drawings and issuance of Controlled Drawing Books to the shop. TN's Quality Engineer reviews the MPQR associated with the project plan and ensures compliance to customer contract, code requirements, and standards associated with the project plan. The team noted EOS DSC work order (No. 18-022) assigned to North Anna. The team reviewed TN Specification No. EOS01-0105, Revision 4, "Procurement Specification for the NUHOMS® EOS-37PTH Dry Shielded Canisters," and associated NANPS controlled drawing books distributed to the shop and determined that the specification was consistent with the design commitments and requirements documented in the SAR and CoC 72-1042, Amendment 1, Revision 8.

Based on its review, the team determined that TNF was following its procedures to ensure that fabrication drawings and specifications were consistent with the TN design drawings, NRC approved licensing drawings, and design requirements/commitments. Overall, no concerns were identified with the development, TN approval, transmittal, TNF approval, control, and record keeping of fabrication drawings and specifications at TNF.

The team reviewed a Final Documentation Package (FDP) for one of eight competed EOS-37PTH-014-B1 DSC used by FirstEnergy Nuclear Operating Co., Davis-Besse, Unit 1, Nuclear Power Station (DBNPS). The team verified that certified as-built fabrication drawings were included in the FDP. The revision level of the as-built fabrication drawings in the FDP reviewed was specific to DSC, Serial No. 014. The DSC associated with the document package was certified by TN to be fabricated, inspected and tested in accordance with DBNPS Purchase Order (PO), TN Specification and Drawing requirements, as well as, TN QAPDM Revision 16.

The team reviewed the internal audit program as defined in TN QAPDM. This was to verify that the program was comprehensive and that audits were scheduled and conducted periodically in accordance with approved procedures by trained and qualified audit personnel who documented the audit results and followed up deficient areas via the corrective action program. The team reviewed two internal audits performed in 2019, as well as the 2019 internal audit schedules to verify that they were conducted in accordance with the program as previously defined. In addition, the team reviewed TN's 2018 annual evaluation of CHT to determine if TN's audits were comprehensive and what issues were identified.

4.1.4 Audit Program

The team determined that for the internal audit reports and checklists reviewed, the audits were adequate, reviewed a representative sample of TN's activities in the area being audited, and the audit reports were written in a timely manner. The team also noted that the 2019 audit plan was current and comprehensive.

The team determined that for the TN audits reviewed, they were comprehensive in nature and identified issues to correct and improve the QA program. Overall, the team assessed that the internal audit program was adequately implemented by performing audits with trained and qualified personnel of all applicable aspects of the QAPDM.

4.3 Fabrication Controls

4.3.1 Material Procurement

The team reviewed samples of material POs to determine if the associated materials met the design requirements and reviewed portions of the TN specification No.: EOS01-0105, Revision 4, "Procurement Specification for the NUHOMS® EOS-37PTH Dry Shielded Canisters," to verify the specifications conformed to the requirements contained in the SAR and the CoC. The team noted that the specification covered the requirements for materials, fabrication, inspection, testing, documentation, packaging, and quality assurance for the NUHOMS® EOS-37PTH DSC's.

The team reviewed ITS related POs and receiving inspection records of EOS DSC shell plate, bottom forging, stainless steel sub-arc, tungsten-arc and Spooled metal-arc weld filler metal. The team noted that the POs required the work to be done in accordance with the suppliers QA program as audited and approved by TN and that the provisions of 10 CFR Part 21 applied. The team verified that the suppliers were acceptably audited and approved and were listed on TN's Approved Suppliers List (ASL), E-20798, Revision 140, dated November 07, 2019. The team reviewed a vendor audit plan and report specific to the weld wire manufacturer (The Lincoln Electric Co.) and noted that the supplier was properly evaluated to supply weld wire for TNF. The team sampled receiving inspection reports and noted items were appropriately inspected upon receipt in accordance with TN's receipt inspection procedure. The team noted purchased quality related items and associated supplier documentation conformed with TN procurement documents. Overall, the team assessed that TN had adequate controls for material procurement, traceability, and receipt inspection. The team also determined that the material purchase orders were adequate and specified the applicable criteria and requirements including Part 21.

4.3.2-3 Fabrication and Assembly / Test and Inspection

At the time of the inspection entrance meeting, TN management informed the inspection team that due to other shop priorities, the EOS DSC fabrication activities were significantly reduced to activities associated with limited welding of two DSC shell assemblies and conduct of a nondestructive examination (i.e., radiographic) of shell weldment NAN-EOS-37PTH-001B. In addition, the team noted that TN's EOS basket assembly shop production line contained staged/stored components, however, no basket assembly work was in-process nor scheduled to occur during the inspection. As such, observation of fabrication, assembly and test activities specific to EOS DSCs could not be verified for compliance to TN's approved QA implementing procedures and EOS fabrication specifications. Because of this, the inspection team

determined to perform an inspection of fabrication activities of EOS production no later than February 2020.

The team reviewed selected records and interviewed personnel to evaluate if trained and certified individuals were performing quality related activities as required. Specifically, the team interviewed welding personnel to determine how individuals control production welding, the correct weld procedure specification for fabrication use, assigning qualified welders, and tracking welder qualifications. The team noted in 2019, TNF initiated (8) welder qualification related CARs, the resultant of having been TNF self-identified or initiated based on internal/documentation reviews. In addition, as a result of a 2018 internal audit the team noted initiation of CAR 2018-328, Revision 1, documenting numerous welding operator qualification findings. The team noted TNF's assessment that the findings had no impact nor resulted in nonconforming conditions of production welds performed. Currently, TNF's assessment of welder qualifications and corrective actions taken and/or planned in response to the 2018 and 2019 CARs is on-going. The NRC will continue to review this open item and TNF will be advised by separate correspondence of the results of our assessment. Because this item remains under NRC review, TN is not required to respond to this matter at this time. The characterization of this issue described may change as a result of further NRC review. The team's next planned NRC inspection of TNF is scheduled to occur in February 2020.

4.3.4 Tools and Equipment

The team reviewed selected measuring and test equipment (M&TE) including records and procedures to assure that equipment used in activities affecting quality were properly controlled and calibrated. The team reviewed FPM 12.1, "Control of Measuring and Test Equipment," Revision 1, which prescribes activities and requirements concerning use of M&TE; that calibration occurs to national standards; procurement of calibration services; maintenance of records of various tools and equipment used; and actions to take when any piece of equipment is found out of calibration.

The team compared a sampling of M&TE used for recent fabrication and testing activities to the applicable requirements of FPM 12.2 and determined overall compliance to the procedural requirements. The M&TE selected consisted of load cells, go & no-go gage, densitometer, pressure gauge, radius gage, and helium leak standard in which each were found to be in calibration and had current calibration certificates, as applicable. In addition, the team verified that if the M&TE had been sent offsite for calibration that the calibration service providers were current on TN's ASL, Revision 140.

The team concluded that the M&TE quality procedure being implemented at TNF provided adequate guidance for M&TE calibration and use, and TNF had adequately implemented M&TE calibration, tracking, and use requirements.