



SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. CERTIFICATE/QUALITY ASSURANCE PROGRAM (QAP) HOLDER:

Orano TN Americas LLC
7160 Riverwood Drive, Suite 200
Columbia, Maryland 21046

2. NRC/REGIONAL OFFICE

Headquarters
U. S. Nuclear Regulatory Commission
Mail Stop TWFN 4B-16
Washington, DC 20555-0001

REPORT NUMBER(S) 072-1004/2021-201

3. CERTIFICATE/QAP DOCKET NUMBER(S)

72-1004, 72-1029, 72-1030, 72-1042

4. INSPECTION LOCATION

117 Windchaser Way
Moyock, NC 27958 (performed remote)

5. DATE(S) OF INSPECTION

March 1-5, 2021
Exit Meeting March 16, 2021

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 violation(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.

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

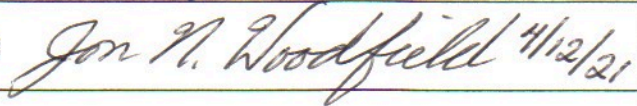
- ☐ 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.
(Violations 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	Brian Ocampos, Quality Assurance and Environmental Health and Safety Director	<i>BIO</i>	3-26-21
NRC INSPECTOR	Jon N. Woodfield	<i>Jon N. Woodfield</i>	4/12/21
BRANCH CHIEF	Leira Y. Cuadrado		

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	CoC Holder Location: Orano TN Americas LLC 7160 Riverwood Drive, Suite 200 Columbia, Maryland 21046	Inspection Location: 117 Windchaser Way Moyock, NC 27958 (Inspection performed remotely)
Licensee/Certificate Holder contacts and phone number	Mr. Brian Ocampos, Quality Assurance and Environmental Health & Safety Director, 410-910-6899	
Docket No.	072-1004	
Inspection Report No.	72-1004/2021-201	
Inspection Date(s)	March 1-5, 2021 (Exit Meeting March 16, 2021)	
Inspection Location(s)	117 Windchaser Way, Moyock, North Carolina 27958 (performed remotely)	
Inspectors	Jon Woodfield, Team Leader, Safety Inspector Jeremy Tapp, Safety Inspector Matt Learn, Safety Inspector	
Summary of Findings and Actions	<p>This inspection was the second routine periodic assessment of TN Americas' (TN) Quality Assurance Program (QAP) implementation at their NUHOMS Horizontal Storage Module (HSM) concrete fabrication facility in Moyock, North Carolina.</p> <p>The team assessed remotely TN's onsite management, design, and fabrication controls for compliance to 10 CFR Part 72, 10 CFR Part 21, and TN's NRC approved QAP; as related to TN Certificate of Compliances (CoCs) 1004 (NUHOMS 24P, 24PHB, 24PTH, 32PT, 32PTH1, 37PTH, 52B, 61BT, 61BTH, 69BTH), 1029 (Standardized Advanced NUHOMS 24PT1, 24PT4, 32PTH2), 1030 (NUHOMS HD-32PTH) and 1042 (EOS-37PTH, EOS-89BTH).</p> <p>Overall, the team assessed that TN at its fabrication facility was adequately implementing its QAP with regard to QA, Management Controls, Design Controls, and Fabrication Controls. TN continues to effectively implement their NRC approved Quality Assurance Program for activities subject to 10 CFR Part 72 at its HSM concrete fabrication facility.</p> <p>The team shared some minor deficiencies with TN on their programs. TN acknowledged these minor deficiencies and captured them in Corrective Action Reports (CARs). No violations of more than minor significance were identified.</p>	
Lead Inspector Signature/Date	Jon N. Woodfield  4/12/21	
Inspector Notes Approval Branch Chief Signature/Date	Leira Y. Cuadrado	

Inspection History

The Moyock facility is a HSM concrete fabrication facility operated directly by TN personnel when in operation. The March 2021 inspection was the second time the Moyock facility had been inspected by the NRC. In April 2017, the NRC performed the first routine periodic assessment of TN Americas' (TN) QAP implementation at their new (at the time) NUHOMS HSM concrete fabrication facility in Moyock, North Carolina. The team assessed TN's onsite management, design, and fabrication controls for compliance to 10 CFR Part 72, 10 CFR Part 21, and TN's NRC approved QAP; as related to TN CoCs 1004, 1029, and 1030. Overall, the team assessed that TN at the fabrication facility was adequately implementing its QAP with regard to QA, Management Controls, Design Controls, and Fabrication Controls. TN effectively implemented their NRC approved QAP for activities subject to 10 CFR Part 72 at the HSM concrete fabrication facility. The team shared some observations with TN on their programs which are described in the inspector notes (ML17151B025). TN acknowledged these observations and captured them in CARs.

Inspection Purpose

The purpose of the current inspection was to assess TN's compliance with 10 CFR Parts 21 & 72, and to verify that the HSM storage systems for which TN is the holder of a CoC, 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 being performed at the Moyock facility associated with the storage of radioactive materials were in accordance with their NRC approved QAP requirements.

Specifically, the scope of the inspection encompassed a review of TN's fabrication activities related to the concrete HSMs for conformance to NRC regulations and industry standards. This included, as applicable, material procurement, fabrication and assembly, testing and inspection, and tools and equipment. The inspection also focused on TN's corporate oversight of the Moyock facility's fabrication activities. The team reviewed applicable portions of TN's QAP to assess the adequacy of the program and whether it had been effectively implemented.

No concrete HSM casting was being performed by TN at the time of the inspection and none was scheduled in the near future, so this inspection was a documentation review that staff performed remotely due in part to considerations related to the COVID-19 public health emergency.

Primary Inspection Procedures/Guidance Documents

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

IP-46051, "Structural Concrete Procedure Review" (Out of date, For Reference only)

IP-46053, "Structural Concrete Work Observation" (Out of date, For Reference only)

IP-46055, "Structural Concrete Records Review" (Out of date, For Reference only)

IP-65001.02, "Inspection of ITACC – Related Installation of Structural Concrete" (For Reference Only)

IP-88132, "Structural Concrete Activities" (For Reference Only)

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

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

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

The team reviewed the Quality Assurance (QA) Plan for Moyock Casting Facility (MCF), Revision 4 dated 1/19/2021. The Purpose of the QA Plan is to describe the methods to control activities for the fabrication of NUHOMS® Horizontal Storage Modules to ensure the requirements of the TN Americas LLC (TN) Quality Assurance Program Description Manual (QAPDM), Revision 16 dated 8/2/18 are implemented at the MCF. The team verified that the QAPDM and supporting QA Plan for the MCF as written, adequately addresses the applicable QA criteria of 10 CFR Part 72 used for the activities MCF performs to fabricate concrete HSMs with no concerns.

4.1.2 Nonconformance Controls and Corrective Action Controls

The team reviewed MCF's nonconformance program to assess the effectiveness of controls established for the processing of nonconforming materials, parts, or components. The requirements for MCF's nonconformance program are contained in TN Implementing Procedure (TIP) 15.2, "Control of Nonconforming Items," Revision 21 dated 5/11/2020. This procedure describes the method for reporting and controlling nonconforming items that are under the control of TN 's QAPDM. This procedure can also be used by MCF staff when a potentially nonconforming condition is discovered during inspection, testing or maintenance activities of TN equipment.

The team interviewed MCF quality control (QC) and TN QA personnel on the nonconformance report (NCR) process and found they were all knowledgeable and understood the process as described in the TIP. The team also reviewed a sample of NCRs written since the last inspection that involved Important-to-Safety (ITS) items.

The team confirmed that the NCRs received the required review, evaluation, and approvals by MCF, and TN headquarters personnel as evidenced by the signatures on the NCR forms. The team assessed that the NCRs reviewed had been appropriately dispositioned and closed in a

timely manner. No concerns were identified by the team in the processing of NCRs by MCF and TN.

The team reviewed MCF's corrective action program (CAP) to assess the effectiveness of controls established for the processing of programmatic issues or hardware nonconformances. The requirements for MCF's CAP are contained in TIP 16.1, "Corrective Action," Revision 30 dated 8/18/2020. This procedure also provides the process for notifying management of any condition potentially reportable to a regulatory authority and tracking the condition to ensure that reportability determinations, and reports, if necessary, are filed within a timely fashion.

The team interviewed MCF QC and TN QA personnel on the corrective action process and the corrective action software used by both. The team reviewed a sample of corrective actions written for issues identified at MFC since the last NRC inspection. The team found that the corrective actions proposed and taken by MCF were adequate and closed out in a timeframe commensurate with the safety significance of the issue.

The team also assessed how the requirements of 10 CFR Part 21 were being implemented for the fabrication activities being performed at MCF. TN has responsibility for performing Part 21 assessments for work performed at MCF. No concerns were identified by the team regarding Part 21 assessment, reporting, or posting requirements.

4.1.3 Documentation Controls

The team reviewed TN's documentation control program as applicable to the Moyock facility to assess the effectiveness of controls established for the approval, issuance, revision and use of quality documents. The team reviewed the following quality procedures specific to TN Moyock:

- MCF 6.1, "MCF Controlled Document Management," Revision 5
- MCF 6.2, "Final Document Package Management," Revision 2

The team assessed that the procedures provided adequate guidance for the site-specific implementation of TN document controls, processing of applicable quality document approvals, and revision control. For the documents reviewed, the team verified that the quality documents were approved per procedure by appropriate personnel and the most current version was available for use. The team observed TN Moyock's use of the Moyock Facility Master Log (MFML) for quality document control and found it contained the required information and was controlled in accordance with the applicable requirements. The team interviewed personnel responsible for the program to ensure they were knowledgeable of the program requirements and were implementing the program as required. The team determined that the controlled document sets described on the MFML, both electronic and hard copy, were consistent with those document sets TN Moyock controlled. The revision level of a sample of the controlled documents described on the MFML was reviewed and determined to be at the same revision as the controlled documents used at the TN Moyock facility.

In addition, the team reviewed TIP 17.1, "Control of Quality Assurance Records," Revision 19. The team then discussed with the Site Director, document control, and QA personnel how the applicable regulatory and procedural requirements for quality record control were being implemented at TN Moyock to ensure they were being performed as required. Specifically, the team discussed when a document was considered a quality record and where and how the quality records were stored. The team noted for "in process" documentation that TN Moyock stores hard copies in binders and uploads records to a network shared drive at various points in the fabrication process to minimize potential loss of records. Once a final document package (FDP) is approved after fabrication of an HSM is complete, then all those quality records are stored electronically on LaserFiche. Backup copies remain in both electronic and hard copy formats. The team verified that a randomly selected sample of quality documents were located on the backup network file server.

Overall, the team determined that TN Moyock was implementing its document control program, including quality record control, adequately and had proper controls in place. No issues of more than minor significance were identified.

4.1.4 Audit Program

The team reviewed TIP 18.1, "Internal Audits," Revision 17 dated 3/24/2017. TIP 18.1 describes the methods for planning, scheduling, conducting, documenting, and following up internal audits. In addition, the team reviewed the results of internal audits performed since the last inspection.

The team review TIP 7.1, "Supplier Evaluations," Revision 24 dated 7/21/ 2020. TIP 7.1 describes the requirements for performing evaluations of suppliers providing items or services classified as Safety Related or ITS Quality Category A or B. In addition, the team reviewed the results of a sample of supplier evaluations performed since the last inspection.

The team determined that audits and supplier evaluations were adequate in their scope. The team noted that CARs were initiated as necessary. The team reviewed these CARs and determined that for the findings reviewed, all were adequately evaluated, and the corrective actions implemented in a timely manner. No issues of more than minor significance were identified.

4.2 Design Controls

4.2.1 Design Development

The team selected a sample of recent HSM fabrication projects that include different HSM designs, to review the applicable documentation and determine if the design controls in place for projects performed at TN Moyock were adequate. The documentation assessed included specifications, project plans, and drawings specific to each HSM fabrication project reviewed. TN corporate has responsibility for the HSM model designs, with TN Moyock not having any

design change authority. The HSM specifications only allow TN Moyock to write NCRs for HSM fabrication issues with respect to the approved design. All NCRs written by TN Moyock must be sent to TN corporate for review and written approval of the final disposition.

The team reviewed the following TN quality documents as they relate to design control:

- TIP 3.1, "Design Control," Revision 27
- TIP 5.1, "Drawing Control," Revision 14
- TIP 5.8, "Fabrication Drawing Control," Revision 2
- TIP 6.1, "Document Control," Revision 21

For the sample of HSM fabrication projects reviewed, which included the Turkey Point HSM-H Project and Beaver Valley EOS HSM Project, among others, the team assessed whether the specifications for each HSM design selected were adequately translated to the associated project plan. Further, the team assessed whether the applicable drawings referenced in both the specification and project plan were appropriate and consistent. The team also evaluated whether a sample of the referenced design and fabrication drawings were consistent and in accordance with the applicable safety analysis report (SAR) or licensing drawings for the Turkey Point HSM-H and Beaver Valley EOS HSM Projects. The team noted that TN Moyock's responsibility related to design control was primarily receiving the TN corporate transmittals of new or revised HSM design and fabrication drawings, specifications, and project plans and ensuring their incorporation into the fabrication work through the document control process. The document control process had appropriate allowances for TN Moyock to delay incorporation of a quality document change, including a design and/or fabrication drawing change, until that change needed to be implemented for the specific fabrication project(s) occurring at the facility.

Overall, the team determined that TN Moyock was adequately implementing design controls as applicable to its scope of work. No issues of more than minor significance were identified.

4.2.2 Modifications

TN corporate is responsible for all HSM design modifications and any analysis justifying the changes. TN Moyock only receives design changes to TN design and fabrication drawings and the associated specifications and project plans. As stated in the section above, TN Moyock would process the receipt of the modified quality documents through the document control process, as required. The team identified no concerns with the TN Moyock design and documentation control processes for placing TN HSM design/fabrication modifications into HSM production.

4.3 Fabrication Controls

4.3.1 Material Procurement

The team reviewed the following TN and MCF procedures and documents specifically related to procuring the material used to manufacture the HSMs:

- MCF 13.1, "Material Storage and Housekeeping at Moyock Casting Facility," Revision 1
- Specification EOS-01-0115, "Steel Fabrication for EOS HSM/EOS HSMS," Revision 1
- Specification EOS-01-0113, "Concrete Construction of NUHOMS EOS HSM & EOS HSMS," Revision 2
- TIP 4.1, "Procurement Document Control," Revision 36
- TIP 5.2, "Specifications," Revision 12
- TIP 7.1, "Supplier Evaluations," Revision 24
- TIP 7.3, "Dedication of Commercial Grade Items," Revision 14
- TIP 7.5, "Supplier Oversight," Revision 13
- TIP 7.7, "Review of Supplier Document Submittals," Revision 12
- TIP 7.9, "Receipt Inspection," Revision 11
- TIP 7.11, "Approved Suppliers List," Revision 15
- TIP 7.12, "Supplier Performance Monitoring," Revision 8
- TIP 8.1, "Identification and Control of Material, Parts and Components," Revision 36
- TIP 8.2, "Identification of Counterfeit, Fraudulent or Suspect Items," Revision 0
- TIP 15.31, "Review of Supplier Nonconformances," Revision 22

The team focused its review on the procurement of materials for the EOS HSMs. EOS material specifications were reviewed and the associated purchase orders (POs) for reinforcing steel, embedded elements, fine/coarse aggregate, and Portland Cement were also reviewed to verify that the specifications were in the POs. The team also reviewed the TN supplier evaluations for the vendors of the materials and found them acceptable.

A sample of receipt inspection reports for materials such as rebar were reviewed by the team and found to be performed in accordance with procedures. In all cases the team determined that procured materials met the design specifications and were traceable to the serial number of the specific component of the HSM in which they were used.

Various Services Program Manuals (SPMs) were reviewed which provide guidance on how materials used in fabrication are verified, controlled, and traced from the time of purchase through the life of the fabricated HSM components; and how the traceability documentation was controlled, available, and auditable.

The team also reviewed POs to the suppliers of concrete and aggregate engineering test services and their TN supplier evaluations. No issues were identified.

Overall, no concerns were identified by the team with the procurement of materials to fabricate HSMs and with the procurement of testing services to verify the quality of the raw materials and wet mixed/cured concrete.

4.3.2 Fabrication and Assembly

The inspection was performed remotely since there was no HSM fabrication being performed at the Moyock facility during the time of the inspection due to prior completion of all HSM contracts. It was decided not to delay the inspection since TN stated that new HSM fabrication would not start again until near the end of 2021. Therefore, the team focused its fabrication and assembly review on fabrication procedures and completed FDPs for EOS HSMs.

The team reviewed the following TN and MCF procedures and documents related to fabrication and assembly of HSMs and specifically EOS HSMs:

- Configuration Drawing 15301-3000, Revision 4
- MCF 1.1, "Organization at Moyock Casting Facility," Revision 2
- MCF 6.2, "Final Document Package Management," Revision 2
- Specification EOS-01-0115, "Steel Fabrication for EOS HSM/EOS HSMS," Revision 1
- Specification EOS-01-0113, "Concrete Construction of NUHOMS EOS HSM & EOS HSMS," Revision 2
- SPM 5.23.1, "General Construction Requirements and Methods for Fabrication of EOS-HSM," Revision 5
- SPM 5.23.3, "EOS HSM Base Bottom Segment - Concrete Construction," Revision 3
- SPM 5.23.4, "EOS HSM Base Top Segment - Concrete Construction," Revision 4
- SPM 5.23.5, "EOS HSM Roof - Concrete Construction," Revision 3
- SPM 5.23.6, "EOS HSM Door - Concrete Construction," Revision 3
- SPM 5.23.7, "EOS HSM Outlet Vent Cover - Concrete Construction," Revision 3
- SPM 5.23.8, "EOS HSM Wall - Concrete Construction," Revision 4
- SPM 5.23.9, "Concrete Batching and Testing for Fabrication of EOS," Revision 2
- SPM 5.23.11, "Hot Concrete Testing for EOS HSM/HSMS," Revision 1
- TIP 7.4, "Fabrication Readiness Reviews," Revision 10
- TIP 15.4, "Control of Fabrication Nonconforming Items," Revision 3

The team reviewed the project plan and fabrication readiness review to fabricate 10 EOS HSMs for the Beaver Valley Nuclear Generating Station Project and found them thorough and procedure compliant.

The team reviewed the generic FDP and a sampling of component specific FDPs for the Beaver Valley Project EOS HSMs.

The generic fabrication documentation package contained the following sections and associated information:

1. Concrete Mix Design
2. Form Verification
3. Chloride Ion Content Report

4. Concrete Ingredient Test Report
5. Bar Support Literature
6. Receipt Inspection Reports
7. Personnel Qualification
8. M&TE (Measuring and Test Equipment)
9. NCRs
10. Project Quality Plan
11. Fabrication Drawings
12. Batch Plant Inspections
13. Signature Lists
14. Sil-Act Form Release Agent

The team determined the generic documentation was detailed, complete, and compliant with FDP procedures with no concerns. All activities, reports, and inspections documented in the generic FDP were performed in accordance with approved methods, procedures, specifications, and PO requirements.

The team sampled reviewed component specific FDPs associated with EOS HSM base bottom segments, base top segments, roofs, doors, outlet vent covers, and walls. Each component FDP contained an approved traveler (fabrication step by step plan) to ensure high standards of fabrication and assembly control.

Every component specific FDP reviewed was sufficiently detailed between the traveler and other documentation to include reference specifications and revisions, embeds, hold points and witness points, concrete placement information, batch ticket numbers, concrete mix identification number and mix design report, fresh sample testing information, curing method used, cured sample test results, and post-pour inspection results. Each step of the traveler was signed off by an independent MCF QC technician when the step was satisfactorily completed.

The team determined from a review of quality records for the completed Beaver Valley EOS HSM Project that MCF's implementation of fabrication practices and assembly processes to be compliant with all applicable quality procedures at the Moyock fabrication facility. No issues of more than minor significance were identified.

4.3.3 Test and Inspection

Since this was a remote inspection with no ongoing test and inspection activities to observe, the team focused its test and inspection review on test and inspection personnel qualification and outside testing service provider qualification. In addition, the team focused its review on quality records for testing and inspection in the FDPs for EOS HSMs fabricated for the Beaver Valley Project.

The team reviewed the following TN and MCF procedures specifically related to the testing and inspections associated with the fabrication and assembly of HSMs and specifically EOS HSMs:

- MCF 2.1, "MCF Training Requirements," Revision 2
- SPM 2.1, "Systematic Approach to Training," Revision 10
- SPM 2.2, "Training Qualification Standard," Revision 13
- SPM 5.21.10, "Sampling for Uniformity of Concrete," Revision 3
- SPM 5.23.9, "Concrete Batching and Testing Procedure for Fabrication of EOS HSM," Revision 2
- SPM 5.23.11, "EOS Hot Concrete Testing," Revision 1
- TIP 2.1, "Indoctrination and Training," Revision 29
- TIP 2.3, "Qualification of Inspection and Test Personnel," Revision 9
- TIP 10.1, "Inspections," Revision 7
- TIP 11.1, "Test Control," Revision 7
- TIP 14.1, "Inspection and Test Status," Revision 5

The team reviewed quality testing and inspection records in the generic FDP for the EOS HSM Beaver Valley Project. Some of the quality testing performed was for concrete mixing water, fine and coarse aggregate, cement, and concrete mix design. Some of the quality inspections performed were of the batch plant and applying a form release agent to all forms prior to pouring concrete.

The team also reviewed quality testing and inspection records in the component specific EOS HSM Beaver Valley Project FDPs. Some quality testing records were wet concrete testing for slump, temperature, air content, and unit weight prior to pouring and 28-day compressive strength break tests. The testing and sample preparation activities were performed in accordance to the relevant American Concrete Institute (ACI) requirements and American Society for Testing Materials (ASTM) standards.

Batch plant tickets were also included for exact batch plant concrete mix proportions of constituents. All testing reviewed was done to the proper standards or specifications. The team also reviewed travelers for proper step by step signoffs and dating by a MCF QC inspector. The team randomly selected QC inspector names from various travelers and verified their qualifications from the documentation provided in the Personnel Qualification Section of the generic FDP. The team determined that the MCF QC personnel reviewed were trained, certified, or qualified to perform their fabrication inspection duties.

Most of the testing associated with HSM fabrication is performed by contracted engineering test service providers. Therefore, the team reviewed the following TN/MCF supplier evaluations of engineering test service providers:

- Supplier Evaluation SE-2020-135, dated 11/16/2020. The company evaluated provides concrete and concrete constituent material testing, equipment calibration, and batch plant inspection.
- Supplier Evaluation SE-2020-127, dated 10/7/2020. The company evaluated provides field and laboratory testing of concrete and aggregate including the supply of field test

personnel for use in casting of HSMs. It also performs concrete and concrete constituent materials testing, laboratory and field testing, equipment calibrations and batch plant inspections.

- Supplier Evaluation SE-2020-12, dated 10/7/2020. The company evaluated provides petrographic examinations (Lab Testing) of fine and coarse aggregate samples.
- Supplier Evaluation SE-2020-107, dated 8/24/2020. The company evaluated provides fresh concrete field testing, 28-day concrete compressive strength testing per ASTM C39, aggregate testing per ASTM C117, ASTM C136, and ASTM C40.

The team determined the supplier evaluations were all adequately performed. The generic FDP in the Personnel Qualification Section also contains the qualification/certifications by ACI for the technicians that worked for these engineering test companies and performed tests associated with the EOS HSM Beaver Valley Project. No issues were identified with the qualification of contractor testing personnel.

The team determined that MCF's quality testing and inspections were controlled, verifiable, traceable, and retrievable from the fabrication planning phase through fabrication and final acceptance. No concerns were identified by the team in this area.

4.3.4 Tools and Equipment

The team reviewed TIP 12.1, "Control of Measuring and Test Equipment," Revision 9 for the QA requirements for maintenance of M&TE and to verify that it was being properly implemented as applicable to TN Moyock. In general, the calibration and use of M&TE was contracted to and performed by an approved supplier. TN Moyock has not maintained any M&TE applicable to quality inspections or tests since the last NRC inspection. The team noted that TN does require the unique M&TE number traceable to calibration records to be reported on inspection and test records when M&TE is used.

Because TN Moyock contracts out all M&TE calibration and use, the team verified the M&TE contractor was current on the Approved Supplier List (ASL) and had the appropriate qualifications for the services provided. The team reviewed the last three annual evaluations and found them to be performed adequately and in accordance with TIP 7.1, "Supplier Evaluations," Revision 24. The team also reviewed the training provided to the M&TE supplier personnel on the applicable TN Moyock fabrication activity requirements as required by the approval conditions documented in the ASL. The team found that for the personnel records reviewed, individuals were provided training as required and held the appropriate qualifications for the inspections and tests they performed.

The team reviewed a sample of M&TE calibration records for equipment used for inspection and testing during the Beaver Valley EOS HSM Project, among others, which include the following M&TE devices:

- Scales
- Concrete cylinder break machine
- Unit weight bucket
- Moist curing room thermometer
- Slump cones

The team found that for the calibration certificates reviewed, each contained the required information and sign offs, were traceable to the equipment being calibrated, and the calibration was performed over the range of values necessary to encompass the anticipated values being measured.

Overall, the team found the control of M&TE at TN Moyock to be adequate. No issues of more than minor significance were identified.