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CP3-SM-0017 **FRev. 2**	**TITLE**: Measuring and Test Equipment	Page 1 of 27

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FR0	Procedure Bluesheeted	All	10/23/2017
FR1	Non-intent revision to remove from Bluesheet	All	12/14/2017
FR2	Revision to address CA-001407	All	12/11/2018

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1.0 PURPOSE AND SCOPE

1.1 Purpose

The purpose of this procedure is to describe how Measuring and Test Equipment (M&TE) standards and Calibrated Instruments (CI) are purchased, calibrated, used, and controlled at the Paducah Gaseous Diffusion Plant (PGDP) Deactivation & Remediation (D&R) contractor facilities.

1.2 Scope

This procedure applies to M&TE standards and CI which are maintained by the PGDP Surveillance and Maintenance Organization, Calibration Facility that are used according to the M&TE definition to meet requirements for QL-1 or QL-2 SSCs and associated activities affecting quality for those SSCs. The procedure may be applied to lower Quality Level applications (for example, certain QL-3 SSCs and their associated activities affecting their quality) as determined necessary by management or Engineering.

This procedure does **NOT** apply to the following devices:

- Installed Plant Instruments (IPI) – See CP3-SM-0049, *Installed Plant Instrumentation Measuring and Test Equipment*
- Laboratory Analytical Equipment – See CP4-ES-0109, *Calibration and Preventative Maintenance of Laboratory Equipment*
- Industrial Hygiene Equipment – See CP2-HS-2038, *Industrial Hygiene Measuring and Testing Equipment Calibration Program*
- Radiological Monitoring Equipment – See CP2-RP-1009, *Radiological Protection Instrumentation Operation Technical Basis Document*
- Buggies [Calibration Buggies, Deviation Buggies, Line Recorder Buggy, Fourier Transform Infrareds (FTIRs), Ultraviolet Analyzers (UVAs), Sample Buggies, Lab Sample Buggies, Analytical Test Buggies (ATB), NaF Trap Carts (NTC) – See CP3-SM-0049
- Nondestructive Assay Equipment (NDA) – See CP4-ND-1013, *Control of Nondestructive Assay Equipment*
- Cold Pressure Test Devices used on cylinders
- Commercial Devices/Equipment such as rulers, tape measures, levels, etc., if such equipment provides the required accuracy.

2.0 REFERENCES

2.1 Use References

- CP3-CP-0001, *Request for Purchase*
- CP3-CP-0002, *Acquisition Management*
- CP3-PR-3001, *Warehouse Operations and Receipt of Material*
- CP3-QA-1001, *Graded Approach*
- CP3-QA-1003, *Management and Self-Assessments*
- CP3-QA-1007, *Procurement Quality Assurance*

- CP3-QA-2005, *Nonconformance Control*
- CP3-QA-3001, *Issues Management*
- CP3-RP-1109, *Radioactive Contamination Control and Monitoring*

2.2 Source References

- American National Standards Institute/National Calibration Standards Laboratory (ANSI/NCSL) Z540-1, *Calibration Laboratories and Measuring and Test Equipment - General Requirements, 1994*
- American Society of Mechanical Engineers (ASME) NQA-1-2008/2009a, *Quality Assurance Requirements for Nuclear Facilities Applications*
- CP2-QA-1000, *Quality Assurance Program Description for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- International Society of Automation (ISA)-RP67.04.02-2010, *Methodologies for the Determination of Set Points for Nuclear Safety-Related Instrumentation*
- *International Vocabulary of Basic and General Terms in Metrology* (VIM) ISO, 1993

3.0 COMMITMENTS

None

4.0 RESPONSIBILITIES

4.1 Deactivation Manager

- Oversees requirements of this procedure and delegates implementation to Surveillance and Maintenance (S&M) Manager.
- Ensures an M&TE Program self-assessment is performed at a minimum of every **3 years** according to CP3-QA-1003, *Management and Self-Assessments*.

4.2 Chief Engineer or Designee

- Reviews procedure requirements to ensure M&TE are of proper type, range, and accuracy.
- Evaluates and documents out-of-tolerance M&TE devices to determine the validity of previous uses of this device for operability or functionality of Quality Level (QL)-1, QL-2, or QL-3 structures, systems or components (SSCs) calibrated using this M&TE device.
- Provides technical support.
- Recommends M&TE calibration parameters such as setpoints, tolerances, and frequencies.
- Determines and documents basis **when** in-house or transfer standards must be used in calibrating M&TE devices and the standards **CANNOT** be traced to a nationally recognized standard.
- Evaluates adverse trends in calibration out-of-tolerances and recommends appropriate corrective action.

4.3 Surveillance and Maintenance Manager or Designee

- Establishes traceability requirements for M&TE devices.
- Approves M&TE calibration parameters such as setpoints, tolerances, and frequencies.

4.4 Quality Assurance/ Quality Control Program Manager or Designee

In conjunction with Engineering, reviews allowable exceptions to manufacturer's specifications **before** implementation or plant dissemination.

4.5 Calibration Facility Front Line Manager (FLM) or Designee

- Maintains M&TE calibration parameters such as set points, tolerances, and frequencies in the MetTeam database.
- Assigns a unique identification to each M&TE.
- Ensures M&TE is easily identifiable and traceable to M&TE Program.
- Develops and maintains Calibration Facility calibrations and calibration procedures.
- Ensures accurate MetTeam database of M&TE devices is maintained by performing an annual inventory check of active M&TE devices in the MetTeam database and their assigned locations.
- Responsible for Calibration Facility calibrations.

4.6 M&TE Custodian

- Complies with M&TE Program requirements.
- Issues and Receives M&TE devices from the M&TE user.
- Performs duties designated by the Calibration Front Line Manager.

NOTE: The M&TE requestor can additionally be any responsible party listed in Section **4.0**.

4.7 M&TE Requestor

- Completes M&TE program requirements to add devices to program.
- Coordinates with engineering to identify device specifications for purchase of items to add to M&TE program.
- Coordinates with procurement to purchase new items to add to M&TE program

4.8 M&TE User

- Complies with M&TE Program requirements.
- Records all M&TE uses on the appropriate M&TE Use Log.

4.9 Subcontract/Procurement Lead or Designee

- Reviews Statements of Work (SOW) for M&TE Services.
- Issues and administers all contractual documents related to M&TE Services provided by vendors.
- Serves as single point of contact for all correspondence between PGDP and contracted service provider.

4.10 Warehouse/Stores/Receiving Supervisor Lead or Designee

- Receives items in accordance with CP3-PR-3001, *Warehouse Operations and Receipt of Material*.
- Contacts applicable persons as directed by notes on Purchase Order.

4.11 Radiation Control Technician

Assists in facilitating off-site release of items in accordance with CP3-RP-1109, *Radioactive Contamination Control and Monitoring*.

4.12 Project Support Technician

Assists in preparation of purchase requisition.

4.13 Plant Shift Superintendent

Supports actions involving M&TE Out-of-Tolerances (OOT).

5.0 GENERAL INFORMATION

None

6.0 INSTRUCTIONS

6.1 Purchasing M&TE

M&TE Requestor or Designee

NOTE:

M&TE may be procured from a Non-ASL supplier; however, QL1 and QL-2 M&TE calibration services must meet one of the following:

1. Be performed by PGDP Calibration Facility.
2. Be performed by an ASL vendor that provides a Certificate of Calibration, performs the services within the limitations and capabilities of the needed service **and** has either an acceptable on site survey **or** on site NQA-1 audit to support the procurement.
3. The services are witnessed as part of source verification as approved by Engineering (in this instance only the M&TE items witnessed for the calibration can be accepted for the service.)
4. The services are sufficiently verified as part of specified PGDP test, inspection, **or** analysis [for example, calibration checked for operational range with known standard(s)] as part of receipt.
5. With prior QA/QC Manager **or** designee concurrence on a case-by-case basis, ‘service only’ acceptance may also be accepted through technical verification of data submitted; and/or review of objective evidence for conformance to contract document requirements.

QL-3 and QL-4 M&TE calibration services may be procured from a Non-ASL supplier.

6.1.1 Purchase M&TE according to CP3-CP-0002, *Acquisition Management*, and CP3-PR-3001, *Warehouse Operations and Receipt of Material*.

6.1.2 **When** purchasing new M&TE torque wrenches, **then** ensure they are accurate to plus or minus **(±) 4%** of reading over the range, according to the original equipment manufacturer’s specifications.

Chief Engineer or Designee

6.1.3 Approve purchase specifications (for example, device accuracy) for M&TE devices that meet the following criteria:

- Being added to the M&TE Program, but **NOT** replacing a device currently in the M&TE Program.
- Replacing an M&TE device that is **NOT** of similar design, function, and range as the device being replaced.

6.1.4 Ensure that other M&TE devices purchased to replace M&TE devices currently in the M&TE Program are of the same accuracy, design, function, and range as the M&TE device which is being replaced.

Department Project Support Technician

6.1.5 Prepare purchase requisition, with support of M&TE Custodian procuring M&TE devices, according to CP3-CP-0002, *Acquisition Management*, ensuring the following applicable items are requested:

A. Vendor operating and/or technical manuals including requirements and procedures, as needed.

B. Calibration certificates documenting traceability to National Institute of Standards and Technology (NIST) or other recognized standard, if M&TE is procured with calibration.

6.1.6 Prepare request, following guidance provided in CP3-CP-0001, *Request for Purchase*, with assistance from M&TE Custodian.

6.1.7 Submit requisition for procurement of M&TE to respective calibration facility manager for concurrence.

Functional Organization/Group Manager or Designee

6.1.8 Approve requisitions for purchase of new M&TE.

M&TE Custodian

6.1.9 Send uncalibrated instruments offsite for calibration according to Section **6.2**.

6.1.10 Receive calibrated M&TE according to Section **6.3**.

6.2 Sending M&TE Offsite for Calibration

Calibration Facility FLM/M&TE Custodian

6.2.1 **If** M&TE is identified to be calibrated by an off-site vendor, **then** ensure item is labeled according to Section **6.6**.

Department Project Support Technician

6.2.2 Prepare purchase requisition, with support of M&TE Calibration Facility Supervisor or designee, according to CP3-CP-0002, *Acquisition Management*, ensuring Calibration certificates documenting traceability to NIST **or** other recognized standard are requested with calibration service.

6.2.3 Prepare purchase requisition with support of M&TE Calibration Facility Supervisor or designee, according to CP3-CP-0002, ensuring the following items are included on the requisition:

A. Name of M&TE Calibration Facility Supervisor or designee and contact information.

B. Instructions to contact M&TE Calibration Facility Supervisor or designee when item has been received onsite.

C. Instructions to contact Quality Control (QC) and M&TE Calibration Facility Supervisor or designee to perform commercial grade acceptance, in accordance with applicable SOW.

D. Instructions to contact M&TE Calibration Facility Supervisor or designee when QC is ready to perform inspection as directed by applicable statement of work.

M&TE Custodian

6.2.4 Contact Radiation Control Technician (RCT) to facilitate off-site release according to CP3-RP-1109, *Radioactive Contamination Control and Monitoring*.

6.2.5 Prepare equipment for shipping off-site, ensuring the following documentation is included:

- Purchase Order Number
- Material Approved for Unrestricted Use Tag

6.2.6 Deliver M&TE to receiving for shipping to off -site calibration vendor.

6.3 M&TE Received From Calibration Vendor

Warehouse/Stores/Receiving Personnel

6.3.1 Receive M&TE items from off-site vendor in accordance with CP3-PR-3001, *Warehouse Operations and Receipt of Material*, **and** note on Purchase Order, ensuring the following items are completed:

A. Contact M&TE Calibration Facility Supervisor or designee when item has been received onsite.

B. Contact QC to perform commercial grade acceptance, as applicable.

C. Contact M&TE Calibration Facility Supervisor or designee when QC is ready to perform receipt inspection.

Calibration Facility FLM/M&TE Custodian

6.3.2 As applicable, coordinate with QC to ensure that commercial grade acceptance is completed, as directed by applicable SOW.

6.3.3 Deliver receipt traveler to Inventory Specialist.

6.3.4 Label M&TE **and** return to service according to Section **6.6**.

6.4 Adding Equipment to the M&TE Program

M&TE Requestor

6.4.1 With assistance from engineering, at a minimum, complete the following blocks of CP3-SM-0017-F03 for equipment to be added:

- Date
- Manufacturer
- Model Number
- Measuring Range
- Measuring accuracy
- Equipment Description
- Calibration Frequency
- Does the device meet the requirements for its intended use

6.4.2 After the form is complete, take the following items to the Calibration Facility Supervisor:

- Completed CP3-SM-0017-F03
- Calibration certificate or Certificate of Conformance/Compliance, if applicable
- Device to be added to M&TE program
- As applicable, any manufactures manuals or guides specific to the device

M&TE Custodian

NOTE:

The information needed for the M&TE Custodian to complete the assigned blocks on CP3-SM-0017-F03 may **NOT** be available until the completion of Section **6.5**. These blocks should be completed in a timely manner as soon as the information is available.

6.4.3 Ensure the following blocks on CP3-SM-0017-F03 are completed:

- Initials
- M&TE number
- Serial number

6.5 M&TE Identification and Tracking

Calibration Facility FLM/M&TE Custodian

6.5.1 Assign unique identification numbers **and** label each M&TE device according to Section **6.6**.

6.5.2 Maintain **and** control M&TE MetTeam database and files, ensuring the following are included in MetTeam database and/or on CP3-SM-0017-F03, *M&TE Specification Sheet*:

- Location of each M&TE device by assigned person accepting equipment. (Database only)
- Equipment Description
- M&TE Number
- Equipment Model Number
- Equipment Serial Number
- Manufacturer
- Equipment Calibration Frequency
- Calibration standards required to perform the calibration
- Environmental conditions that apply during calibration to ensure accuracy and stability of M&TE is maintained. (Database only)
- Calibration Procedure Number
- Tolerances that apply for calibration and standards involved
- Date of Calibration (Database only)
- Calibration Due Date (Database only)
- M&TE use limitations, as necessary

6.5.3 Coordinate M&TE calibrations **and** provide notification of calibration due date to M&TE Custodians.

6.6 Labeling of M&TE Devices

Calibration Facility FLM or Designee

NOTES:

UE-505, *Calibration Do Not Use Label/Tag*, is used on M&TE. UE-505 can be affixed to M&TE by anyone on site identifying one of the following conditions Listed in Section **6.6**.

When labeling M&TE is impractical (for example, too small to label), other suitable means of labeling may be implemented such as labeling M&TE container.

6.6.1 Affix UE-505, *Calibration Do Not Use Label/Tag*, (see Appendix B, *Example Labels*,) to any suspect (out of calibration, past the calibration due date, defective, etc.) M&TE Device, documenting the following on the UE-505:

A. M&TE ID Number

B. Current date

C. Indicate **Reason**.

6.6.2 **If** M&TE device is affixed with a UE-505, **then** ensure that the device is **NOT** used and it is stored and/or segregated from calibrated M&TE.

6.6.3 **When** a new M&TE device or an M&TE device with a lost or an unreadable label is received by the Calibration Facility, **then** perform the following:

A. Obtain identification number from MetTeam database.

B. Affix identification label with assigned unique identification number such as asset number or M&TE ID number.

C. Update MetTeam database of M&TE information according to Section **6.5** of this procedure.

6.6.4 **If** calibration and review is complete, **then** affix appropriate calibration label to M&TE by performing one of the following (see Appendix B, *Example Labels*):

A. **If** M&TE device fully meets M&TE quality objectives, **then** affix UE-504, *Calibration Status Label*, to M&TE device, documenting the following on the UE-504:

1. M&TE ID Number

2. Calibration date

3. Calibration due date

4. Calibrator’s badge number

B. **If** M&TE device partially meets M&TE quality objectives, **then** affix UE-556, *Calibration Limited Use Label,* to M&TE device, documenting the following on the UE-556:

1. M&TE ID Number

2. Calibration date

3. Calibration due date

4. Limited use Restriction information

5. Calibrator's badge number

C. **If** inactivating the M&TE device, **then** affix UE-505, *Calibration Do Not Use Label/Tag,* to M&TE device, documenting the following on the UE-505:

1. M&TE ID number

2. Current date

3. Reason for inactivation

D. **If** calibration is required after use, **then** affix CP-23340, *Calibrate After Use Label,* to M&TE device, documenting the following on the CP-23340:

1. M&TE ID Number

2. Calibration date

3. Calibration due date

4. Restriction information

5. Calibrator's badge number

E. **When** a scale is used with a calibration standard weight to calibrate other M&TE weights, **then** affix UE-628, *Primary/Reference Standard Label,* to M&TE device. Write **UVR** (user verification required) in the **Calibration Due Date** area on the UE-628.

6.6.5 For standard reference materials (pH solutions, conductivity solutions, calibration gases, etc.), ensure the following:

A. If they have a shelf life/expiration date, the expiration date is clearly identified on the material's container, and shall **NOT** be used beyond that date.

B. **If NOT** already done so by manufacturer or vendor, **then** identify **and** clearly mark the material's container with the shelf life/expiration date.

C. For standard reference materials that are out of date, perform the following:

- Label with UE-505, *Calibration Do Not Use Label/Tag*
- Segregate materials from "In Date" materials
- Dispose of when time permits

6.7 M&TE Check Out From Issuing Facility

M&TE Custodian

When requesting M&TE for use, **then** ensure all of the following are completed:

6.7.1 The device requested is applicable for the task for which it is being requested.

6.7.2 The device has sufficient time left in service to complete the task.

6.7.3 The device is logged into the MetTeam database.

6.7.4 The log sheet is issued when the M&TE device is checked out of issuing facility.

M&TE User

6.7.5 The user is familiar with the operation and storage of M&TE device being requested.

6.7.6 The user is aware of and follows all environmental limitations as defined by the manufacturer.

6.7.7 The user is aware of and follows any "Use Limitations" identified on the UE-556 *Calibration Limited Use Label*.

6.7.8 The user is familiar with the M&TE return process.

6.8 M&TE Use, Handling and Storage

NOTES:

It is recommended that M&TE devices in the field be stored in locked, dedicated M&TE storage cabinets and tracked through a checkout/return system when the M&TE device is removed from the storage cabinet.

Operator accessible adjustments may be made to instrument to ensure normal use of M&TE device, such as zero adjust, battery replacement, or cosmetic cleaning of M&TE device before use

Pre-use field calibrations, as directed by applicable procedures, do **NOT** reset the calibration due date.

M&TE User

6.8.1 Assume responsibility for assigned M&TE devices **while** in the field. These responsibilities include:

- Knowing the location of each M&TE device.

- Ensuring careful storage to maintain accuracy of each M&TE device when **NOT** in use.
- Ensuring personnel who use the M&TE are knowledgeable in the device's operation and care.
- Ensuring M&TE User records each use of the M&TE device on the appropriate M&TE Use Log (CP3-SM-0017-F01, *M&TE Use Log*, or CP3-SM-0017-F02, *Quality Control M&TE Use Log*).
- Ensuring M&TE device and applicable M&TE Use Log are returned by the M&TE User to the Calibration Facility **on or before** the date due for calibration.

6.8.2 Record each use of the M&TE device on the appropriate M&TE Use Log (CP3-SM-0017-F01 or CP3-SM-0017-F02).

6.8.3 Ensure M&TE used for an assigned task is operable and has a valid calibration date.

6.8.4 Ensure M&TE used for an assigned task is logged in the applicable activity level work control document (ALWCD) for traceability purposes.

M&TE Custodian and M&TE User

6.8.5 Ensure the following:

- M&TE are **NOT** used beyond calibration due date
- M&TE are properly tagged out of service, if applicable
- M&TE are returned to Calibration Facility for calibration, as applicable.

NOTES:

If the M&TE device was **NOT** used, **then** M&TE User should write "Did Not Use" on the M&TE Use Log, sign, and date.

If the M&TE device or the M&TE Use Log is lost, **then** Section **6.13** should be followed.

M&TE User

6.8.6 Return the M&TE device and applicable M&TE Use Log, CP3-SM-0017-F01 or CP3-SM-0017-F02, to the Calibration Facility **on or before** the date due for calibration.

6.9 Calibration Environmental Control

Calibration Facility FLM or Designee

NOTE:

Examples of environmental conditions to consider include dust, electromagnetic disturbances, radiation, humidity, electrical supply, temperature, and sound and vibration levels.

6.9.1 Control **and** monitor environmental conditions that affect the quality of calibration results as required by the respective calibration procedure, **and** record required information on the appropriate calibration data sheet.

6.9.2 **If** environmental conditions required for a calibration are outside calibration procedure Requirements, **then** perform the following:

A. Stop calibration of the device under test.

B. **When** required environmental conditions are restored, **then** proceed with the calibration.

6.10 Calibrating M&TE

Calibration Facility FLM or Designee

NOTE:

M&TE devices may be calibrated by the Calibration Facility or by an approved Contractor as determined by Instrument Manager and the Quality Manager. The Calibration Facility **must** calibrate devices according to the requirements of this procedure and M&TE calibration procedures.

6.10.1 Ensure the following is included in M&TE calibration procedures:

A. **If** applicable, **then** equipment range and accuracy.

B. **If** applicable, **then** specific steps that must be performed to complete calibration.

C. **If** applicable, **then** As Found and As Left data to be collected and recorded.

D. **If** applicable, **then** identification of forms for collection of calibration data.

E. **If** applicable, **then** equipment labeling requirements such as labels, tags, forms or decals to be applied.

F. **If** applicable, **then** records that may be generated as a result of performing the procedure.

G. **If** applicable, **then** the pre-use calibration requirements.

H. Tolerances that apply for calibrations.

I. Ensure approved contractor calibrations are performed in accordance with the applicable SOW.

NOTES:

M&TE required for calibration of devices used for nuclear material accountability and Nevada National Security Site waste **must** be traceable to NIST standards or equivalent.

Accuracy comes from the manufacturer's specifications.

Calibration Facility FLM

6.10.2 Ensure the ratio derived by dividing accuracy of device under test by accuracy of available calibration standard(s) is at least a **4:1** accuracy ratio.

6.10.3 **When 4:1** accuracy ratio **CANNOT** be established, **then** perform the following:

A. Review actual ratio **and** document justification in Documents Folder.

B. Obtain Engineering concurrence.

C. Place approval in the M&TE device record.

NOTE
Calibrations are performed using nationally-recognized standards **except** where standards do **NOT** exist.

Chief Engineer or Designee

6.10.4 **When** traceable or certified calibration standards do **NOT** exist, **then** perform the following:

A. Evaluate rationale for M&TE use according to proper metrology practices.

B. Document justification.

C. As necessary, ensure reverse traceability.

M&TE Custodian

6.10.5 **When** returning M&TE to service as part of calibration, **then** perform the following:

A. Update MetTeam database and hard copy CP3-SM-0017-F04, *M&TE History Record*, with M&TE information.

B. **If** approved for site use, **then** affix the appropriate calibration label per Section **6.6**.

C. Follow requirements of Section **6.13** for each out-of-tolerance M&TE.

6.10.6 **If** the Calibration Facility Supervisor determines an M&TE device is found to be consistently out-of-tolerance, **then** determine if device should be repaired or replaced.

6.11 Calibration Periodicity

Calibration Facility FLM or Designee

NOTES:

M&TE calibration periodicity is normally based on manufacturer's recommendations.

Lengthening or shortening calibration periodicity is evaluated based on "As Found" data during calibration process to ensure M&TE devices are remaining in-tolerance between calibrations.

Engineering may establish exceptions by evaluating the following:

- Type of equipment
- Stability characteristic
- Required accuracy
- Intended use
- Past performance.
- Sound engineering judgment.
- Other conditions affecting measurement control

6.11.1 Document calibration periodicity in the MetTeam database.

6.11.2 Issue weekly **Due for Calibration** notifications to M&TE Custodians for field assigned M&TE devices.

6.11.3 Surveillance and Maintenance (S&M) Manager **When** necessary, **then** extend an M&TE device's calibration periodicity as follows:

A. Submit a written request to Engineering Manager.

B. Request Engineering Manager to review for reasonable assurance the M&TE device remains adequate for intended use.

C. Approve request with concurrence from Engineering.

D. Place approval in the M&TE device's record.

Calibration Facility FLM or Designee

E. Label **and** document extended calibration according to Section **6.6** of this procedure.

F. Perform the calibration **on or before** extended calibration due date.

G. Return to established calibration periodicity.

6.12 Program Adequacy

Calibration Facility FLM or Designee

6.12.1 Perform a self-assessment of Control of M&TE at a minimum of every **3 years** according to CP3-QA-1003, *Management and Self-Assessments*.

6.12.2 Perform a documented active M&TE annual inventory check according to the following:

A. Generate a report from the MetTeam database with the following information at a minimum:

- M&TE ID Number
- M&TE Description
- M&TE Assigned Location
- M&TE Assigned To

B. Verify the assigned to and location are correct.

C. Verify equipment is being stored properly.

D. For any equipment lost or not in the indicated location, go to **6.13**.

E. Performer(s) sign and date Annual Inventory Check once complete

F. Calibration Facility FLM review, sign, and date the Annual Inventory Check once complete.

G. File completed and signed Annual Inventory Check.

6.13 M&TE Issues Requiring Evaluation and Documentation

Calibration Facility FLM or Designee

6.13.1 Evaluate M&TE device for any of the following conditions:

- Lost
- Not in the correct location as indicated by the MetTeam data base
- Damaged (such that As Founds **CANNOT** be determined)
- M&TE Use Log is lost
- Previous use of the M&TE device **CANNOT** be determined

6.13.2 **If** any M&TE device is found to have any of the above conditions, **then** perform the following:

A. Initiate a CP3-QA-3001-F02, *Issue Identification Form,* with the respective CP3-SM-0017-F01, *M&TE Use Log,* (if available) attached according to CP3-QA-3001, *Issues Management.*

B. Assign the CP3-QA-3001-F02 to the M&TE User or the M&TE User's Manager according to CP3-QA-3001.

6.13.3 **If** any M&TE is found to be OOT, **then** perform the following:

A. Review previous calibration records to determine if the OOT is a recurring issue.

B. Notify the Plant Shift Superintendent (PSS) of the potential degraded condition due to the M&TE OOT.

C. Forward copy of M&TE Use Log(s) to PSS for evaluation of SSCs affected.

D. Request Engineering evaluate OOT and M&TE Use Log to determine the validity and acceptability of previous inspection and test results performed.

E. Forward copies of OOT report and M&TE Use Log(s) to Engineering for evaluation.

F. **If** OOT is a recurring issue, **then** request Engineering evaluate the need for replacement of M&TE.

G. **If** replacement is recommended by Engineering, **then** follow requirements of Section **6.1** for replacement.

H. **If** OOT does **NOT** affect operability of any SSCs, **then** file OOT report in applicable M&TE file.

PSS

6.13.4 **If** any affected SSCs are within the scope of CP3-EN-0305, *Engineering Operability Evaluations*, **then** request Engineering perform an operability evaluation according to CP3-EN-0305.

6.13.5 **If** any affected SSCs are relied upon for Nuclear Criticality Safety (NCS), **then** request NCS determine impact and possible entry into CP4-NS-1104, *Nuclear Criticality Safety Response to Off-Normal Conditions*.

6.13.6 **If** Engineering and/or NCS determines a component or system **CANNOT** perform its intended function, **then** initiate a CP3-QA-2005-F01, *Nonconformance Report (NCR),* according to CP3-QA-2005, *Nonconformance Control*.

Engineering

6.13.7 Evaluate the OOT with the M&TE Use Log to determine the validity and acceptability of previous inspection and test results performed.

6.13.8 **If** directed by PSS, **then** perform Operability Evaluation according to CP3-EN-0305.

6.13.9 **If** OOT is a recurring issue, **then** perform the following:

A. Evaluate replacing M&TE.

B. Forward recommendations to Calibration Facility Supervisor.

7.0 RECORDS

7.1 Records Generated

The following records may be generated by this procedure:

- CP3-SM-0017-F01, *M&TE Use Log*
- CP3-SM-0017-F02, *Quality Control M&TE Use Log*
- CP3-SM-0017-F03, *M&TE Specification Sheet*
- CP3-SM-0017-F04, *M&TE History Record*

Forms are to be completed in accordance with CP3-OP-0024, *Forms Control*.

7.2 Records Disposition

The records are to be maintained in accordance with CP3-RD-0010, *Records Management Process*.

Appendix A – Acronyms/Definitions

ACRONYMS

ACG – Approved Commercial Grade Supplier

ALWCD – Activity Level Work Control Document

ANSI/NCSL – American National Standards Institute/National Calibration Standards Laboratory

ASL – Approved Supplier List

ASME – American Society of Mechanical Engineers

ATB – Analytical Test Buggy

CI – Calibrated Instruments

D&R – Deactivation & Remediation

FTIR – Fourier Transform Infrared

IPI – Installed Plant Instrumentation

ISA – International Society of Automation

M&TE – Measuring and Test Equipment

NCR – Nonconformance Report

NDA – Nondestructive Assay Equipment

NIST – National Institute of Standards and Technology

NTC – NaF Trap Cart

OOT – Out-of-Tolerance

PGDP – Paducah Gaseous Diffusion Plant

PSS – Plant Shift Superintendent

QA – Quality Assurance

QC – Quality Control

QL – Quality Level

RCT – Radiation Control Technician

Appendix A – Acronyms/Definitions (continued)

SOW – Statement of Work

SSC – Structure, System, or Component

UVA – Ultraviolet Analyzer

DEFINITIONS

Calibration Facility(s) – Shop/Lab where M&TE is calibrated, maintained, and stored.

Commercial Grade Acceptance – Acceptance process used to provide reasonable assurance that an item or service will successfully perform its intended safety function and, in this respect, is deemed equivalent to an item or service provided under the requirements of ASME NQA-1.

Installed Plant Instrumentation (IPI) – Instruments or detection devices that are permanently mounted/installed (for example, not considered portable, except for selected buggies). This instrumentation is typically excluded from requirements of the M&TE program. Installed Plant Instrumentation requirements are covered in CP3-SM-0049, *Installed Plant Instrumentation Measuring and Test Equipment*.

Measuring and Test Equipment (M&TE) – Devices or systems used to calibrate, measure, gage, test, or inspect in order to control or acquire data to verify conformance to specified requirements. M&TE applicable to this procedure are calibration standards and Calibrated Instruments maintained and controlled by the Calibration Facility.

MetTeam – The database used by PGDP to track M&TE.

M&TE Custodians/Users – Personnel responsible for and/or use M&TE devices in the field to determine operability or functionality of QL-1, QL-2, QL-3, and/or QL-4 structures, systems, and components (SSCs).

Reverse Traceability – The process of documenting in a use log a history of devices calibrated by a particular M&TE standard.

Traceability – The property of the result of a measurement or the value of a standard where by it can be related to stated references, usually national or international standards through an unbroken chain of comparisons all having stated uncertainties.

User Required Verification – This term is used with M&TE Shop-controlled scales which are used with another calibration standard weight.

Appendix B – Example Labels

UE-504

CALIBRATION STATUS LABEL

UE CAL/STATUS LABEL*
(use black ink only)

ID # _____
CAL DATE _____
DUE DATE _____
CALIBRATOR _____
COMMENTS _____

(BLUE with BLACK letters)

UE-505

CALIBRATION DO NOT USE LABEL/TAG

DO NOT USE*
(use black ink only)

ID # _____
DATE _____
REASON _____
_____
_____

(RED with WHITE letters)

UE-556

CALIBRATION LIMITED USE LABEL

UE CAL/LIMITED LABEL*
(use black ink only)

ID # _____
CAL DATE _____
DUE DATE _____
CALIBRATOR _____
RESTRICTION _____
_____

(YELLOW with BLACK letters)

UE-628

PRIMARY/ REFERENCE STANDARD LABEL

(Not For Field Use)
(use black ink only)

ID # _____
DUE DATE _____
CALIBRATOR _____

(WHITE with BLACK letters)

CALIBRATE AFTER USE LABEL
(use black ink only)

ID # _____
CAL DATE _____
CAL DUE DATE _____
CALIBRATOR _____
RESTRICTION _____

(ORANGE with BLACK letters)

CP-23340

CP3-SM-0017-F01 – M&TE USE LOG

M&TE ID#_____ M&TE Due Date_____ Issue Date_____ Page ____ of ____

System or Component Name/ID that the M&TE is used on	Bldg.	Signature/ Badge No.	Work Package/ Procedure No. (If Available)	Date of Usage

CP3-SM-0017-F02 – QUALITY CONTROL M&TE USE LOG

Page ____ of ____

M&TE Description	M&TE I.D. Number	Calibration Due Date

PO or WO No.	Drawing No.	Description of Item Inspected	Quantity Received	Quantity Inspected	Inspection Date	Comments

CP3-SM-0017-F03 – M&TE SPECIFICATION SHEET

To Be Completed by Requestor and Engineering
Items with a (*) are required

***Date**:	***Manufacturer**:	***Model No.:**
***Measuring Range:**	**Charge Code:**	**Company:**
***Measuring Accuracy:**		**PR:** **(required if purchasing)**
***Equipment Description:**		
***Calibration Frequency:**		
Calibration Standards Required:		
Quality Level:		
Environmental Conditions Required:		
Calibration Procedure Number or SOW:		
Set Point Calculation:		
Use Limitations:		
***Does the device meet the requirements for its intended use?** YES ☐ NO ☐		
Was the device purchased with a calibration? YES ☐ NO ☐ N/A ☐ **If YES, attach a copy of one of the following: certificate of conformance, certificate of compliance, certificate of calibration**		**Certificate provides NIST traceability information.** YES ☐ NO ☐
If YES, who was the calibration provider? N/A ☐	**Was the provider verified to be on the ASL:** YES ☐ NO ☐ N/A ☐	
Remarks:		

Completed by IM Technician:	**Initials:**	**M&TE No.:**		**Serial No.:**	

Engineering: _____
Printed Name / Signature / Date

Requestor: _____
Printed Name / Signature / Date

CP3-SM-0017-F04 – M&TE HISTORY RECORD

M&TE No.	Serial No.	Page of

Date	Name/Badge	Work Performed/ Notes