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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure outlines the control and use of Measuring and Test Equipment (M&TE) standards utilized at the Paducah Deactivation Project, Northwest and Northeast Plume (NWNEP) Operations facilities. M&TE standards include, but are **NOT** limited to, calibrated pressure gauges and manometers used to verify the accuracy of Installed Plant Instrumentation (IPI) used at the C-612, C-614, C-765, and C-765-A facilities.

1.2 Scope

This procedure describes steps for the control/use of M&TE standards utilized at the NWNEP facilities to support pressure-related calibration and testing activities identified in CP2-ER-0046, *Paducah Plume Operations Maintenance, Sampling and Analysis, and Calibration and Testing Plan*. These steps include M&TE standard requirements for calibration, pre-use inspection, control, handling, use, and storage requirements as well as corrective action requirements as a result of Out of Tolerance (OOT) IPI conditions.

2.0 REFERENCES

2.1 Use References

- CP2-ER-0012, *Waste Management Plan for the Pump-and-Treat Operations at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky.*
- CP2-ER-0046, *Paducah Plume Operations Maintenance, Sampling and Analysis, and Calibration and Testing Plan*
- CP2-WM-0001, *Four Rivers Nuclear Partnership, LLC Paducah Deactivation and Remediation Project Waste Management Plan*
- CP3-RD-0010, *Records Management Process*
- CP3-SM-0017, *Measuring and Test Equipment*
- CP3-SM-0049, *Installed Plant Instrumentation Measuring and Test Equipment*

2.2 Source References

- CP2-QA-1000/FR2A, *Quality Assurance Program Description for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- CP3-OP-0025, *Document Control Process*
- DOE/LX/07-0339&D1, *Remedial Action Work Plan for the Northwest Plume Interim Remedial Action Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- DOE/LX/07-1280&D2/R3/A1, *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- DOE/OR/07-1253&D4/R7, *Operation and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- DOE/OR/07-1535&D3/R8, *Operation and Maintenance Plan for the Northeast Plume Containment System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*

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- DOE G 414.1-1C, *Management and Independent Assessments Guide*
- JHA-10844, *Maintenance, Operations, and Testing for the Northwest and Northeast Plume and Water Treatment Operations*

3.0 COMMITMENTS

None

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Precautions

4.1.1 Personnel shall be made familiar with the hazards associated with exposure to Trichloroethylene (TCE) and review Safety Data Sheet.

4.1.2 **When** opening **and** closing the Air Stripper Disconnect to be Locked Out, **then** the following shall be followed to protect from Arc Flash:

- Non-Essential personnel will stay clear while disconnect is being opened.
- Only trained and approved personnel will operate disconnect.
- Personnel operating disconnect should **NOT** stand in front of or directly face the disconnect when operating.
- Personnel performing work will wear appropriate Personal Protective Equipment (PPE) according to NFPA 70E, including safety glasses and long sleeves.

4.2 Limitations

4.2.1 The M&TE standards are utilized to verify the accuracy of IPI identified in CP2-ER-0046.

4.2.2 Waste (Spill clean-up residues, pumps , other equipment, PPE) generated through the use of this procedure will be managed according to CP2-WM-0001, *Four Rivers Nuclear Partnership, LLC Paducah Deactivation and Remediation Project Waste Management Plan* and CP2-ER-0012, *Waste Management Plan for the Pump-and-Treat Operations at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*.

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5.0 PREREQUISITES

Obtain the following PPE as described:

- Safety Glasses with Side Shields.
- Steel toe safety boots.
- If more than incidental body contact with TCE contaminated liquid or material is expected then Tychem 5000 Apron and Sleeves or Silver Shield Apron and sleeves are required.
- PPE as specified by Radiological Work Permit and/or Radiological Protection/Industrial Hygiene.
- Respiratory Protection as specified by Industrial Hygiene/Radiological Control.
- When handling TCE contaminated pumps, piping, or liquid then wear TCE compatible gloves (as necessary) - Supreno EC Mircoflex Nitrile, Showa 730, or equivalent approved glove from Industrial Hygiene.

6.0 INSTRUCTIONS

6.1 Calibration of Measuring and Test Equipment

Calibration Technician

NOTE:

The method of calibration shall be based on the type of equipment, stability characteristics, required accuracy, intended use, and other conditions affecting performance.

Calibrate M&TE standards at prescribed intervals (for example annually) **and** whenever the accuracy of the M&TE standard is suspect in accordance with CP3-SM-0017, *Measuring and Test Equipment*.

6.2 Control of Measuring and Test Equipment

Operator

- 6.2.1** Prior to use, verify M&TE standard is **NOT** beyond its labeled calibration due date and inspect for signs of damage.
- 6.2.2** **If** M&TE standard is overdue for calibration **or** damage is discovered, **then** tag and segregate, **or** remove from service, **and DO NOT** use until it has been recalibrated, or request engineering authorization to continue use until such time as the equipment can be repaired or recalibrated.
- 6.2.3** Obtain replacement M&TE standard in accordance with CP3-SM-0017.

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6.3 Verifying Accuracy of Installed Plant Instrumentation

Operator

NOTE:

Available calibration and testing task forms for NWNPEP operations are as follows:

NEPCS First Quarter: CP2-ER-0046-F23, *NEPCS First Quarter Calibration and Testing Tasks*

NEPCS Second Quarter: CP2-ER-0046-F24, *NEPCS Second Quarter Calibration and Testing Tasks*

NEPCS Third Quarter: CP2-ER-0046-F25, *NEPCS Third Quarter Calibration and Testing Tasks*

NEPCS Fourth Quarter: CP2-ER-0046-F26, *NEPCS Fourth Quarter Calibration and Testing Tasks*

NWPGS First Quarter (Even Year): CP2-ER-0046-F30, *NWPGS First Quarter Even Year Quarterly Calibration and Testing Tasks*

NWPGS First Quarter (Odd Year): CP2-ER-0046-F34, *NWPGS First Quarter Odd Year Quarterly Calibration and Testing Tasks*

NWPGS Second Quarter (Even Year): CP2-ER-0046-F31, *NWPGS Second Quarter Even Year Quarterly Calibration and Testing Tasks*

NWPGS Second Quarter (Odd Year): CP2-ER-0046-F35, *NWPGS Second Quarter Odd Year Quarterly Calibration and Testing Tasks*

NWPGS Third Quarter (Even Year): CP2-ER-0046-F32, *NWPGS Third Quarter Even Year Quarterly Calibration and Testing Tasks*

NWPGS Third Quarter (Odd Year): CP2-ER-0046-F36, *NWPGS Third Quarter Odd Year Quarterly Calibration and Testing Tasks*

NWPGS Fourth Quarter (Even Year): CP2-ER-0046-F33, *NWPGS Fourth Quarter Even Year Quarterly Calibration and Testing Tasks*

NWPGS Fourth Quarter (Odd Year): CP2-ER-0046-F37, *NWPGS Fourth Quarter Odd Year Quarterly Calibration and Testing Tasks*

- 6.3.1** Obtain applicable Northeast Plume Containment System (NEPCS) or Northwest Plume Groundwater System (NWPGS) calibration and testing task form for the current operating quarter.

NOTE:

Inspection of the hand pneumatic pump will be conducted prior to use to ensure no damage is present.

- 6.3.2** Inspect hand pneumatic pump for damage prior to use. **If** damage to the pump is identified or pump is **NOT** functioning, **then** repair or replace the pump.
- 6.3.3** Connect the hand pneumatic pump **and** M&TE standard to the IPI device to be tested.
- 6.3.4** Pressurize the IPI device **and** M&TE standard using the hand pneumatic pump until M&TE standard reaches test pressure **and** compare the values displayed on the IPI device and M&TE standard.
- 6.3.5** Compare the results of the test to acceptable results identified on the calibration and testing forms referenced in CP2-ER-0046.

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6.3.6 Document the results on the calibration and testing forms referenced in CP2-ER-0046.

6.3.7 Document the M&TE number, serial number, calibration due date, and manufacturer of the M&TE standard, utilized during calibration and testing, in the comment section of the calibration and testing form.

NOTE:

Multiple test pressures may be required for the IPI device that is tested.

6.3.8 Repeat Steps **6.3.4** through **6.3.7** until all test points have been completed for the specific IPI device.

6.3.9 Initial **and** date the calibration and testing form referenced in CP2-ER-0046.

6.3.10 Repeat Steps **6.3.3** through **6.3.9** until all IPI devices identified on the calibration and testing form requiring the use of an M&TE standard have been completed.

6.3.11 Provide completed calibration and testing forms to supervisor for review.

6.4 Corrective Action

Operator

6.4.1 If IPI devices, tested in accordance with CP2-ER-0046, are damaged **or** found to be OOT, **then** notify supervisor of equipment status.

Performing Group Supervisor

6.4.2 Provide requisite notifications in accordance with CP3-SM-0049, *Installed Plant Instrumentation Measuring and Test Equipment* for each OOT IPI condition.

6.5 Handling and Storage of Measuring and Test Equipment

Operator

6.5.1 Properly store and handle M&TE standards to maintain accuracy in accordance with manufacturer's specifications **or** guidance provided by engineering.

6.5.2 Use M&TE standards in environments that are controlled to the extent necessary to ensure that the required accuracy and precision are maintained.

6.6 Status Indication of Installed Plant Instrumentation

Operator

Label IPI devices to indicate the calibration status **and** establish traceability to calibration records in accordance with CP3-SM-0049.

7.0 ACCEPTANCE CRITERIA

None

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8.0 POST PERFORMANCE WORK ACTIVITIES

8.1 Calibration of Measuring and Test Equipment Summary

Facility Manager

- 8.1.1** Maintain documentation showing the manufacturer, serial number, the date calibrated, calibration due date, **and** the facility performing the calibration for all M&TE utilized by Northeast and Northwest Plume Operations as required by procedure CP3-SM-0049.

NOTE:

Information submitted will include data necessary for interpretation of the calibration results and verification of compliance with applicable requirements.

- 8.1.2** Submit calibration certificates of M&TE to the Records Manager according to procedure CP3-RD-0010, *Records Management Process*.

9.0 RECORDS

9.1 Records Generated

The following records may be generated by this procedure:

- CP2-ER-0046-F23, *Northeast Plume Containment System First Quarter, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F24, *Northeast Plume Containment System Second Quarter, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F25, *Northeast Plume Containment System Third Quarter, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F26, *Northeast Plume Containment System Fourth Quarter, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F30, *Northwest Plume Containment System First Quarter Even Year, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F31, *Northwest Plume Containment System Second Quarter Even Year, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F32, *Northwest Plume Containment System Third Quarter Even Year, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F33, *Northwest Plume Containment System Fourth Quarter Even Year, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F34, *Northwest Plume Containment System First Quarter Odd Year, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F35, *Northwest Plume Containment System Second Quarter Odd Year, Quarterly Calibration and Testing Task*

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- CP2-ER-0046-F36, *Northwest Plume Containment System Third Quarter Odd Year, Quarterly Calibration and Testing Task*
- CP2-ER-0046-F37, *Northwest Plume Containment System Fourth Quarter Odd Year, Quarterly Calibration and Testing Task*

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

9.2 Records Disposition

The records are to be maintained in accordance with CP3-RD-0010.

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Appendix A – Acronyms/Definitions

ACRONYMS

IPI – Installed Plant Instrumentation

M&TE – Measuring and Test Equipment

NEPCS – Northeast Plume Containment System

NWNEP – Northwest Northeast Plumes

NWPGS – Northwest Plume Groundwater System

OOT – Out of Tolerance

PPE – Personal Protective Equipment

TCE – Trichloroethylene

DEFINITIONS

None