

WORKING COPY

VERIF. DATE: _____

INITIALS: _____

CP3-EN-0227 FRRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 1 of 12
DOCUMENT CATEGORY: Administrative		
LEVEL OF USE: Information Level		
FUNCTIONAL AREA: Engineering Programs and System Engineering		SUBJECT MATTER EXPERT: Todd Walker, Engineering Program Services
SUBJECT MATTER AREA: Trenching, Excavation, Penetration Permit		
NUCLEAR SAFETY REVIEW DOCUMENTATION: FRNP-23-0738-S		APPROVED BY/DATE (Signature on file): Karen Sizemore, Chief Engineer 10/12/2023
REQUIRED REVIEW DATE (or expiration date for temporary change): 12/5/2026		EFFECTIVE DATE: 10/16/2023

REVISION/CHANGE LOG			
Revision/Change Letter	Description of Changes	Pages Affected	Date of Revision/Change
FR0	Procedure Bluesheeted	All	09/21/2017
FR1	Non-intent revision to remove from Bluesheet	All	12/20/2017
FR2	General revision	All	04/23/2019
FR3	Added guidance for identifying non-DOE owned utilities on permit	All	12/30/2019
FR4	Revision to address CAPA #CA-002801	All	12/4/2020
FR4A	Added info for CAPA #CA-004333; changed Security signature requirement on TEP for only soil excavations inside the LA	5, 8, 10	2/22/2023
FR4B	Added note and step that allows CTR to sign TEP permit at Section 12 of the form. Reworded steps 5.4 and 6.4.5-6.4.6. Removed Utility Owner from completing portions of the TEP permit.	5, 8-10	10/12/2023
FR4C	Periodic Review has been completed with no changes identified in procedure technical content. Nonintent changes have been incorporated per CP3-NS-2001. Date for review cycle has been reset.	All	12/5/2023

TABLE OF CONTENTS

- 1.0 PURPOSE AND SCOPE 3
 - 1.1 Purpose..... 3
 - 1.2 Scope..... 3
- 2.0 REFERENCES..... 4
 - 2.1 Use References..... 4
 - 2.2 Source References 4
- 3.0 COMMITMENTS..... 5
- 4.0 RESPONSIBILITIES..... 5
- 5.0 GENERAL INFORMATION 5
- 6.0 INSTRUCTIONS..... 5
 - 6.1 Initiate TEP Permit 5
 - 6.2 Field Compliance Review 6
 - 6.3 Identify Utilities 7
 - 6.4 Incorporate TEP Permit into Work Packages..... 9
- 7.0 RECORDS..... 10
 - 7.1 Records Generated..... 10
 - 7.2 Records Disposition 10
- Appendix A – Acronyms/Definitions 11

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 3 of 12
---------------------------------------	---	---------------------

1.0 PURPOSE AND SCOPE

1.1 Purpose

The purpose of this procedure is to describe the actions and responsibilities necessary to prepare and issue the permit required to support the Deactivation & Remediation (D&R) contractor and D&R subcontractor and utility owner trenching, excavation, and/or penetration activities. The Trenching, Excavation and Penetration (TEP) permit program provides a consistent approach for TEP work designed to support worker safety and protect underground and other hidden utilities.

The TEP Permit program procedure shall remain active and in place in order to satisfy the required specification of the Land Use Control Implementation Plans (LUCIPs) and/or other land use controls required by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) documents (such as, Record of Decision, Action Memorandum).

1.2 Scope

This procedure applies to TEP work performed on U.S. Department of Energy (DOE) property at the Paducah Site.

NOTE:

The exceptions listed below do **NOT** negate requirements for the Facility Manager (FM), Planner, Supervisor or Contract Technical Representative (CTR) to contact Field Compliance regarding work in a Solid Waste Management Unit (SWMU) or other organizations such as Radiological Control, Safety & Health/Industrial Hygiene (S&H/IH), etc. regarding safety requirements (required survey, Personal Protective Equipment [PPE], other permits, etc.).

Exceptions (within DOE property boundary):

A TEP permit is **NOT** required under the following conditions:

- Earth/rock/ground/soil/roadway penetrations/excavations of 12 inches in depth or less.
- Penetrations less than 1.25 inches into any material.
- Both sides of a solid material (no thicker than 2 inches) that can be adequately examined.
- Drilling holes in valve vault lids.
- Drilling holes in roof membrane material and metal roof deck.
- Removal or replacement of an item, in the same location, and where the excavation is of no greater depth and area than the existing item (i.e. pole, post, monitoring well, piezometer, etc.).
- Grounding of an electrical pole when grounding rod is hand driven and placed no more than 2 feet from pole on opposite side of underground service line.
- Installing a valve marker post when the post is hand driven and is placed no more than 2 feet from the valve curb box on opposite side of underground service line.

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 4 of 12
---------------------------------------	---	---------------------

- Routine grading associated with roads and parking lots where the original grade is not disturbed by more than 12 inches.
- Excavations conducted in a designated stockpiled soil borrow area or temporary soil or aggregate storage piles where the original permanent grade has not been disturbed.
- Excavations in active landfill disposal cells for the purposes of waste disposition, grading or grade staking.
- Area(s) within structures/facilities declared demolition-ready.

2.0 REFERENCES

2.1 Use References

- CP3-EN-0209, *Plant Drawings*
- CP3-HS-2016, *Excavation and Penetration*
- CP3-RP-1109, *Radioactive Contamination Control and Monitoring*

2.2 Source References

- 10 CFR 851, *Worker Safety and Health Program*
- 10 CFR 1021, *National Environmental Policy Act Implementing Procedures*
- 29 CFR 1926 Subpart P, *Excavations*
- CP2-SM-1000, *Activity Level Work Planning and Control Program for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- CP3-SI-0001, *Site Interface*
- CP3-SM-1101, *Work Package Development*
- CP3-SM-1102, *Activity Level Work Execution and Closeout*
- DOE/LX/07-0365&D2/R1, D2/R1, *Record of Decision for Solid Waste Management Units 1, 211-A, 211-B, and Part of 102 Volatile Organic Compound Sources for the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- DOE/OR/07-1949&D2/R2, *Land Use Control Implementation Plan for the North-South Diversion Ditch at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- DOE/OR/07-2151&D2/R2, *Land Use Control Implementation Plan: Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- Kentucky Revised Statute (KRS) 367.4901-367.4917, *Underground Facility Damage Prevention*

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 5 of 12
---------------------------------------	---	---------------------

3.0 COMMITMENTS

None

4.0 RESPONSIBILITIES

Responsibilities are outlined in Section 6.0, *Instructions*.

5.0 GENERAL INFORMATION

5.1 This procedure is used in conjunction with CP3-HS-2016, *Excavation and Penetration*, and CP3-EN-0227-F01, *Trenching/Excavation/Penetration Permit Form*.

5.2 Engineering may use various techniques to assist in providing indications of concealed utilities at underground excavation locations, such as plant drawings and surveys (using audio and radio frequency transmitters and receivers, ground penetrating radar, electrical detection surveys, etc.).

5.3 For penetration work at walls/ceilings/floors, the work crew may use scanning equipment to determine subsurface utility interferences prior to performing penetrations.

5.4 New underground/embedded/concealed utilities installed at a work site during construction are maintained and controlled by the Subcontractor/Supervisor/work crew as necessary and as described in work control documents. Engineering may be contacted to assist with marking new utilities installed at work site during construction, as needed.

Chg
A, B

5.5 For those entities marking utility locations in the field, the CTR or Engineering, as applicable, ensures the requirements of CP3-RP-1109, *Radioactive Contamination Control and Monitoring*, are applied.

5.6 Additional land use controls defined in CERCLA decision documents (such as, Record of Decision or Action Memorandum) or LUCIPs associated with CERCLA response actions also will be subject to this procedure.

6.0 INSTRUCTIONS

6.1 Initiate TEP Permit

NOTES:

If locations are within close proximity **and** as agreed to by Engineering **and** Requestor, **then** multiple excavations and/or penetrations for the same job may be addressed by a single permit.

The requestor of the TEP permit may be the Planner, FM, Supervisor, CTR, or other person who determines the need for TEP work.

Requestor

6.1.1 Contact Engineering with the following information:

- Description of work

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 6 of 12
---------------------------------------	---	---------------------

- Location of excavation or penetration activities
- Name of the organization/crew/subcontractor who will be performing the work
- Work Package number or Contract/Project name or number
- Applicable charge code

Engineering

- 6.1.2** Assign a unique identifying number to each TEP Permit **and** record it in the Engineering TEP Log and in Section 1 of the TEP Permit form, CP3-EN-0227-F01.
- 6.1.3** Ensure the TEP log contains **at least** the following minimum information:
- Requestor name
 - Permit number
 - Type of work
 - Date of issue
 - Issued to (Person/Organization)
- 6.1.4** Enter the requesting organization and person in Section 2 of the TEP Permit form.
- 6.1.5** Enter Work Package number or Contract/Project name or number in Section 3 of the TEP Permit form.
- 6.1.6** Enter a description of the work in Section 4 of the TEP Permit form.
- 6.1.7** Enter the location where the work will be performed in Section 5 of the TEP Permit form.
- 6.1.8** Confirm depth of trenching and/or excavation.
- 6.1.9** **If** excavation would expose the soil below the level of an adjacent structure, **then** mark the Yes box **and** obtain approval/signature from Engineering Manager **or** designee in Section 6 of the TEP Permit form.
- 6.1.10** **If** the No box is marked in Section 6, **then** place “N/A” on the signature line.
- 6.1.11** Send the TEP Permit to the Field Compliance representative for review and approval.

6.2 Field Compliance Review

Field Compliance Representative

- 6.2.1** Review the TEP Permit and other appropriate documents to determine potential for environmental impacts, appropriate mitigation measures, and to ensure all environmental requirements are included.

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 7 of 12
---------------------------------------	---	---------------------

- 6.2.2** Discuss any environmental compliance aspects that would prohibit or limit proposed TEP activity with the requestor and/or Engineering.

NOTE:

If Yes is marked, **then** Kentucky state notification may be required.

- 6.2.3** Determine if planned work is in a SWMU **and** mark the Yes or No box in Section 7 of the TEP Permit form.
- 6.2.4** **If** any additional information is needed, **then** document it in Section 13 of TEP Permit form.
- 6.2.5** Sign **and** date in Section 7 of the TEP Permit form **and** return it to Engineering.

6.3 Identify Utilities

Engineering

- 6.3.1** Identify DOE owned utilities in Section 8 expected to be present in the excavation or penetration area using techniques available (such as reviewing drawings and other documents, performing underground surveys and/or scans, etc.).

NOTES:

Acceptable responses for each specific type of utility:

- **Yes** Drawings or other information show that a specific type of utility has underground, embedded, or concealed utilities known to exist at or adjacent to the excavation(s) or penetration(s).
- **No** Drawings or other information do **NOT** show any interference of a specific type of utility with the planned excavation(s) or penetration(s).

- 6.3.2** **If** a specific type of utility is **NOT** present, **then** perform the following:

- A.** Mark the No box in the appropriate line of Section 8 of the TEP Permit form.
- B.** Enter initials in the Initial column.

- 6.3.3** **If** the specific utility is present **or** thought to be present, **then** perform the following:

- A.** Mark the Yes box in Section 8 of the TEP Permit form.
- B.** Request that the appropriate Utility Supervisor or FM initial next to that utility in the Initial column to indicate concurrence.

- 6.3.4** List reference drawing numbers and additional information, as needed, in the blank spaces next to the appropriate utility name in Section 8 of the TEP Permit form.

- 6.3.5** **If** additional space is needed for information related to the DOE owned utilities in Section 8, **then** use Section 13 on page 2 of the TEP Permit form.

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 8 of 12
---------------------------------------	---	---------------------

NOTES:

To aid in the identification of DOE owned utilities, locations may be marked by Engineering on the permit reference drawings and/or in the field, as needed.

For identification of non-DOE owned utilities outside of the Limited Area, locations may be marked by entities supporting KY-811 subscribers or nonsubscribers.

6.3.6 If DOE owned utility locations are marked in the field, **then** use the following color scheme:

- Red – Electrical and Communication
- Green – Storm and Sanitary Sewer
- Blue – Potable and Non Potable Water
- Yellow – Gas

6.3.7 Attach copies of reference drawing(s) marked with approved area(s) of excavation to the TEP Permit.

6.3.8 If TEP work is performed by D&R contractor, **then** perform the following:

- A. Contact KY-811 and non-KY-811 subscribers, as necessary for the TEP work area, **and** complete information related to any non-DOE owned utilities in Section 14 of the TEP Permit form. Chg
B
- B. If work is excavation of the earth/ground/soil surface located inside the Limited Area, **then** attain Physical Security Specialist review, signature and date in Section 9 of the TEP Permit form. Chg
A
- C. Attain FM review, signature and date in Section 10 of the TEP Permit form.
- D. Sign **and** date Section 11 of the TEP Permit form.
- E. Scan a non-record copy of the TEP Permit **and** place in S:\Engineering\Field Engineering\Excavation Permits in the corresponding calendar-year folder.
- F. Deliver the TEP Permit and any attachments to the Planner.

6.3.9 If TEP work is performed by a subcontractor or a utility owner with right of way on DOE property, **then** perform the following:

- A. If work is excavation of the earth/ground/soil surface located inside the Limited Area, **then** attain Physical Security Specialist review, signature and date in Section 9 of the TEP Permit form. Chg
A
- B. Attain FM review, signature and date in Section 10 of the TEP Permit form.
- C. Sign **and** date in Section 11 of the TEP Permit form.

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 9 of 12
---------------------------------------	---	---------------------

- D. Scan a non-record copy of the TEP Permit **and** place in S:\Engineering\Field Engineering\Excavation Permits in the corresponding calendar-year folder.
- E. Deliver the TEP Permit and any attachments to the CTR/Requestor to ensure subcontractor or designee completes Section 14 of the TEP Permit form.

CTR/Requestor

- 6.3.10 Provide TEP Permit to Subcontractor Supervisor or designee for completion of Section 14 of the TEP Permit form.

Subcontractor or designee

- 6.3.11 Contact KY-811 and non-KY-811 subscribers **and** complete information related to any non-DOE owned utilities in Section 14 of the TEP Permit form.

Supervisor/Subcontractor/CTR or designee

NOTE:

The CTR may sign for the subcontractor in Section 12 of the TEP permit.

- 6.3.12 Review, sign, **and** date Section 12 of the TEP Permit form to indicate acceptance of the permit requirements.
- 6.3.13 **If** CTR signs Section 12 for subcontractor, **then** ensure Section 14 is completed correctly and that subcontractor understands the information and requirements of the TEP permit prior to signing.

6.4 Incorporate TEP Permit into Work Packages

Subcontractor or designee

- 6.4.1 Provide TEP Permit to CTR or Requestor for incorporation into the project work package documentation.

NOTE:

The TEP Permit is part of the work package documentation and is executed and closed through the work control process.

Planner

- 6.4.2 Incorporate TEP permit form and attachments into work package for D&R contractor work.

CTR/Requestor

- 6.4.3 Confirm Section 12 and Section 14 of the TEP Permit form are completed.

Chg
B

Chg
B

Chg
B

Chg
B

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 10 of 12
---------------------------------------	---	----------------------

- 6.4.4 Ensure TEP permit form and attachments are incorporated into the project work package documentation.

Supervisor/Subcontractor/Utility Owner Supervisor or designee

- 6.4.5 If new underground/embedded/concealed utilities are installed at work site during construction, **then** maintain and control those utilities as described in work package.
- 6.4.6 Contact Engineering to assist with marking new utilities installed at work site during construction, as needed.
- 6.4.7 Following completion of TEP work, redline drawings for utilities (if applicable) showing updated utility information.

Chg
A, B

Supervisor/CTR/Requestor

- 6.4.8 Provide redline drawings (if applicable) to Engineering.

Engineering

- 6.4.9 Update drawings according to CP3-EN-0209, *Plant Drawings*, to reflect any utility changes and/or the presence of previously unknown utilities or obstructions, as necessary.

7.0 RECORDS

7.1 Records Generated

The following records may be generated by this procedure:

- CP3-EN-0227-F01, *Trenching/Excavation/Penetration Permit Form*
- Trenching/Excavation/Penetration Permit Log (submitted annually)

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*.

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 11 of 12
---------------------------------------	---	----------------------

Appendix A – Acronyms/Definitions

ACRONYMS

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act

CTR – Contract Technical Representative

D&R – Deactivation & Remediation

DOE – U.S. Department of Energy

FM – Facility Manager

KRS – Kentucky Revised Statute

LUCIP – Land Use Control Implementation Plan

PGDP – Paducah Gaseous Diffusion Plant

PPE – Personal Protection Equipment

S&H/IH – Safety & Health/Industrial Hygiene

SWMU – Solid Waste Management Unit

TEP – Trenching/Excavation/Penetration

DEFINITIONS

Demolition Ready — For the purpose of TEP work, the structure/facility is isolated from all permanent and temporary sources of hazardous energy.

DOE Owned Utility — Any utility that is part of the Paducah Gaseous Diffusion Plant (PGDP) infrastructure that is owned by DOE and managed by the D&R contractor. The D&R contractor maintains the “as-built” status of DOE owned utilities on plant drawings. DOE owned utilities do not include utilities owned by other entities or managed by other DOE contractors.

Excavation — Any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

Facility Manager — Person with operating jurisdiction over utilities or facilities where the work covered by the permit is being performed.

Non-DOE Owned Utility — Any utility owned or managed by others that does not meet the definition of DOE owned utilities. Non-DOE owned utilities include KY-811 subscribers (municipal utilities) and non-KY-811 subscribers (privately owned utilities) that may be in the area of D&R contractor supported TEP work.

Penetration — Entry into a floor, wall, or other building structure component which may expose the worker to electrical or other hazards.

CP3-EN-0227 FRev. 4C	TITLE: Trenching, Excavation and Penetration Permit	Page 12 of 12
---------------------------------------	---	----------------------

Solid Waste Management Unit — Any discernible unit (location) at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. SWMUs include any area at a facility at which routine and systematic releases of hazardous wastes or hazardous constituents has occurred.

Subcontractor — Company or firm which has overall responsibility for all work associated with a purchase order or subcontract.

Subsurface Survey — Walkdown of a site where excavation activities are to be performed. The walkdown includes using a device or devices to identify the presence of concealed obstacles/utilities either underground or within walls/floors/ceilings.

Trench — A narrow underground excavation that is deeper than it is wide, and is no wider than 15 feet.

Trenching/Excavation/Penetration (TEP) Permit Form CP3-EN-0227-F01 — Permit form that identifies any requirements and precautions associated with a planned excavation/penetration. The permit's main purpose is to identify for the work crew the concealed utilities in the area of an excavation/penetration so that work can be performed safely and without damage to utilities or equipment.

Utility Owner — Company or organization that has ownership of utilities in the area of TEP work or who has right of way access on DOE property and may perform TEP work in support of DOE under a TEP permit.

Utility Supervisor — Designated personnel responsible for the following plant systems: sanitary water, recirculating water, sanitary sewer, storm drains, electrical, communications, grounding, oil, steam, acid, air, nitrogen, chilled water, raw water, gas, high pressure fire water, cathodic protection, and waste heat.