

# TEMPORARY CHANGE REQUEST

TCR NO. **TCR-ENG-024, Rev 4-001**

(e.g., TCR-ENG-021,R0-001)

The Temporary Change Request (TCR) Form is to be used to process urgent or minor changes for PPPL Policies, Organization/Mission Statements and Procedures. The TCR should be used when changes are:  
1) urgent, and can not wait the 2-4 week period for Department Head review/comment, or  
2) minor, and do not warrant Department Head review.

Person Requesting Change: William Gervasi Phone Ext: 3592

Department Name: Engineering and Infrastructure Support

Document Number: ENG-024 Revision No.: 4

Document Title: Digging Permits

**Reason for change:**

Clarify use of ground penetrating radar

**Change description:** (Summarize and attach changed pages, with changes clearly indicated)

State responsibility for GPR and what, why, when how its used. Changes were made in Step #8 of the procedure.

1. Does this TCR significantly alter the intent or scope of the document? YES:        NO: X

2. Does this TCR significantly impact ES&H? YES:        NO: X

If 1 or 2 is YES, Explain why the changes should not be routed for Department Head review:

Mike Williams  
Department/Division Head Approval

6/25/15  
Date

John DeLooper  
Head, Best Practices and Outreach/designee

6/25/15  
Date

Release/Effective date of this TCR: 6/25/15

Incorporate this TCR into next revision of this document? YES: X NO:

<b>PPPL</b>	<b>PRINCETON PLASMA PHYSICS LABORATORY</b>	<b>PROCEDURE</b>	<b>No. ENG-024 Rev 4 page 1 of 6</b>
	<b>Subject:</b>  <b>DIGGING PERMITS</b>		<b>Effective Date:</b>  October 3, 2014
		<b>Supersedes:</b> Rev. 3 dated 8/16/2004	<b>Initiated by:</b>  Associate Director, Engineering and Infrastructure
			<b>Approved:</b>  Director

Management System (Primary):	08.00 Facilities and Property Management
Management System Owner:	Associate Director for Engineering and Infrastructure
Management Process:	08.11 Facilities and Maintenance Management
Process Owner:	Associate Director for Engineering and Infrastructure
Sub-Process:	08.11.04 Excavation / Trenching / Digging
Sub-Process Owner:	Head, Facilities and Site Services
Subject Matter Experts (SMEs):	Head, Facilities and Site Services

### APPLICABILITY

This procedure defines and establishes controls for penetrations in the ground of 12-inches or deeper anywhere on the PPPL site. The procedure is applicable to work performed by PPPL as well as subcontractors who may be employed to work on existing or new installations.

### INTRODUCTION

The PPPL Facilities Division issues Digging Permits following a review of the proposed excavation, the architectural/civil drawings of the affected location(s), and NEPA and OSHA determinations. The Digging Coordinator is appointed by the Head of Facilities. The appointment is based on practical field experience, electrical knowledge and the ability to read underground utility drawings. Excavation and equipment requirements for PPPL may be found in ES-MECH-011 Special Purpose Vehicles and Equipment.

**NOTE:** A valid Digging Permit with drawings or schematics attached shall be available at the excavation site whenever work is in progress.

### ON-SITE INSPECTION

During the digging operations, the Digging Project Supervisor and/or an authorized representative of the Safety Division or ESH&S shall inspect the digging activity with the Competent Person at a minimum of daily inspections. Any changes to the conditions of the excavation require additional visits.

### JOB SPECIFICATION REQUIREMENTS

The "Requestor" of the project that requires the use of this procedure shall ensure that the project specifications used by the subcontractors responsible for designing and executing the project, include the following information and/or directions:

- All requirements set forth in ENG-006, Preparation, Review & Approval of Specifications & Statements of Work, and ES-MECH-011, Special Purpose Vehicles and Equipment, including the Checklist of Requirements for Procured Special Purpose Equipment Services.
- All requirements set forth in ES-MECH-013, Excavation Soil Erosion and Sediment Control.

- Ground water beneath some portions of the PPPL site is contaminated with volatile organic chemicals (VOCs) subject to NJDEP regulations. Therefore, if excavations are expected to occur at or below the ground water table, the Environmental Services Division (ESD) must be contacted for guidance.
- If ground water is encountered during excavation, ESD must be contacted prior to pumping or discharging any ground water from the excavation.
- Approved NEPA review per ESH-014 NEPA Review System.
- Incorporate information (Drawings etc.) to assist in determining location of buried utilities at the job site.
- State any known precautions necessary for any digging activity.
- When installing new underground utilities, provide for placement of "trace lines" & caution tape.
- Subcontractor (or PPPL Digging Coordinator if digging is done in-house) is responsible for Calling 1-800-272-1000 (NJ one call) and the final marking and layout of excavation sites, including the marking or confirming of the location of existing underground utilities.

## DEFINITIONS

**Competent Person** – The “Competent Person” is a designated individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them. In addition, for excavations, a competent person must be able to identify soil types using OSHA defined tests, or other recognized tests for each soil and rock deposit and to be able to determine the allowable sloping for the excavation.

**Digging Coordinator** – The designated person that reviews the trenching or digging plans and procedures for completeness provides ground markings indicating locations of existing underground services and prepares the job specific Digging Permit package.

**Digging Project Supervisor** – A person selected by the Head, Facilities and Site Services to supervise the excavation who has the training, experience and skills to manage this type of project and is designated as a Competent Person for excavations.

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

**NEPA** – National Environmental Policy Act, a Federal Law which, as applied by PPPL via procedure ESH-014, assures that activities are evaluated for environmental impacts at an early stage and that they follow all relevant environmental requirements.

**Requestor** – The person tasked with obtaining a valid Digging Permit.

## REFERENCES

- 29 CFR1926 OSHA Subpart P, Excavations
- 29 CFR 1926 OSHA Subpart O, Motor Vehicles, Mechanized Equipment and Marine Operations
- 29 CFR 1926 OSHA 1926.32(f) Definition of a Competent Person
- ENG-006 Preparation, Review & Approval of Specifications & Statements of Work
- ESH-014 NEPA Review System

ENG-032 Work Planning Procedure  
 ES-MECH-011 Special Purpose Vehicles and Equipment  
 NJSA 48:2-73 Underground Facilities: One-Call Damage Prevention System  
 DOE 1092-2013 DOE Handbook for Electrical Safety

**PROCEDURE**

<u>Responsibility</u>	<u>Action</u>
Requestor	<ol style="list-style-type: none"> <li>1. Provides A/E representative and/or COG with the latest relevant drawings to aid in the design process, if digging is required for the project.</li> <li>2. Completes the Digging Permit Checklist (Attachment 1) to review all activities and actions that may be required for the Dig.</li> <li>3. Completes the “Requestor” section of the Digging Permit form including the name of the assigned of a Digging Project Supervisor [sufficient details of the proposed excavation shall be included to facilitate the reviews required].</li> <li>4. Assure a completed NEPA form, per ESH-014, has been obtained for the proposed action. This may include verifying with the PPPL NEPA Compliance Manager that the action has been addressed by a certified NEPA Planning Form. Also secures the proper resume and training certificates from the “Competent Person” (subcontractor) or from PPPL Competent Person list (if PPPL CP) for the ESH&amp;S Department’s concurrence.</li> <li>5. Transmits the Digging Permit, Dig Permit Checklist, NEPA form (or number of certified NEPA form), and design drawings to the Digging Coordinator along with any other appropriate information, such as resolutions to issues described on the Digging Permit Checklist, on the proposed excavation.</li> </ol>
COG	<ol style="list-style-type: none"> <li>6. Notifies the Environmental Services Division if the dig will encounter anticipated groundwater.</li> <li>7. Has the responsibility for the trenching or excavation. Manages approvals and documentation for the digging permit and assures that excavators, PPPL and subcontractors, operate in compliance with this procedure.</li> </ol>

Facilities Digging  
Coordinator or Designee

8. Completes appropriate section of the Digging Permit form. Reviews work package against existing PPPL drawings to determine proximity of underground utilities to excavation site and include this information on the Digging Permit package.

**TCR-ENG-024,R4-001**

NOTE: The Facilities Division Head may authorize contracted ground penetrating radar (GPR) services to supplement underground utility mark-outs. The use of GPR is for informational purposes, shall not be used as a primary source of information, and generally used to support or verify written documentation. GPR shall not be relied upon in the absence of written documentation.

10. Provides ground markings at excavation site to indicate location of underground utilities and marks up the pertinent prints to specify the location of underground utility lines on the Digging Permit package from identifiable landmarks established by triangulation or use of surveying equipment. Marks the perimeter allowed by this dig permit.
11. Provides notes on the marked-up prints showing the anticipated depth, if available, of any underground utilities located at the excavation site. If necessary, writes "Cautions" and/or hand digging on marked-up prints.
12. Approves and forwards the Digging Permit package to the safety Division for review.

Safety Division

13. Reviews the Digging Permit and completes review of proposed excavation and provides the safety concerns and/or requirements for the excavation on the form or as an attachment.
14. Approves and Signs the Digging Permit form and transmits to the Facilities Digging Coordinator. Also approves the designation of the "Competent Person."

Facilities Digging  
Coordinator or Designee

15. Arranges for an independent review of the digging plan, precautions and markings with the appropriate PPPL organization/personnel (e.g., Maintenance Manager).
16. Verifies the qualifications of the individual selected as the Digging Project Supervisor.
17. Transmits a "draft" copy of the Digging Permit with attachments to the Digging Project Supervisor for preparation of excavation.
18. Conducts a job briefing with Digging Project Supervisor, subcontractor, Competent Person, equipment operator(s), and ESH&S (if required) prior to signing and dating Digging Permit for validation.

Digging Project  
Supervisor

19. Schedules a Job Hazard Analysis (JHA) briefing with the Facilities Digging Coordinator/designee and subcontractor Competent Person and ensures the equipment operators are included among attendees.
20. Assures the subcontractor's Checklist of Requirements for Procured Special Purpose Equipment Services has been received and completed within the specified time frame.
21. Performs inspections requirements and all other OSHA defined duties of the Competent Person for excavations. Halts excavation if unsafe conditions are found.
22. Halts excavation if excavation needs to be expanded beyond original permit in order to obtain a new permit covering the expanded excavation area.
23. If anticipated groundwater is encountered, execute control plan in Digging Permit. If unanticipated groundwater is encountered, halt excavation and contact ESD.

Facilities Digging  
Coordinator or Designee

24. Marks up drawings with red-line corrections, as required, to reflect as-found conditions.

Digging Project  
Supervisor

25. Assures that markers and ribbons are laid in the excavation prior to back filling and then notifies the Facilities Digging Coordinator before commencing with the backfill operation.

Facilities Digging  
Coordinator or Designee

26. Conducts on-site inspection of the excavation area before allowing the work crew to begin the backfill operation.

Digging Project  
Supervisor

27. Backfills excavation in accordance with requirements on the Digging Permit and the contract.
28. Submits as-built drawings to Facilities Digging Coordinator or designee with a cost center for PPPL Drafting.

Facilities Digging  
Coordinator or Designee

29. Reviews as-built drawings and transmit them to PPPL Drafting with the cost center provided by the Digging Project Supervisor.

Digging Project  
Supervisor

30. Sends Digging Permit to Facilities Digging Coordinator for record keeping.

**TRAINING** (section required for all procedures)

- Author 1. Specifies the appropriate training methods and means (below) and obtains concurrence of the Management System Owner and the Management Process Owner.
- A. Target Audience: Cognizant Individuals**  
 Instructor: Digging Coordinator  
 Training Method:  
 Briefing  
 Frequency:  
 Once only
- Management System Owner or Designee 2. Notifies the Human Resources Training Office of the training so that they will be aware of the training requirements and be able to provide assistance and guidance in the course development, implementation, tracking, and maintenance.

**RECORDS REQUIREMENTS SPECIFIC TO THIS PROCEDURE**

Records Custodians must assure records are maintained as follows:

Record	Record Custodian	Location	Retention Time
Digging Permit	Digging Coordinator	Digging Coordinator Files	Log sheets pertaining to special work permits in operating activities, together with work order reason sheets. Destroy 1 yr after completion of work Reference: DOE Admin 17 (15.a) Work Permit (Work Orders) Records.

**Attachment**

1. Sample PPPL Digging Permit Form and Checklist

**DIGGING PERMIT  
CHECKLIST**

Project Title: \_\_\_\_\_

Date \_\_\_\_\_

Known utilities to be encountered:

- |   |  |                                |  |
|---|--|--------------------------------|--|
| <input type="checkbox"/> Water          | <input type="checkbox"/> Heating/Cooling | <input type="checkbox"/> Sewer | <input type="checkbox"/> Communication line      |
| <input type="checkbox"/> Compressed air | <input type="checkbox"/> Electrical      | <input type="checkbox"/> Gas   | <input type="checkbox"/> High Voltage Electrical |
| <input type="checkbox"/> Other(s) _____ |  |                                |  |

Y/N	ITEM	DESCRIPTION
	Excavation shown on a current drawing	
	Traffic flow disruptions	
	Silt fencing requirements	
	Overhead obstructions	
	Excavation hazards mitigation	
	Special training requirements	
	Expected excavation depth	
	Expected soil type	
	Cave-in protection requirements	
	Soil erosion control requirements (Over 5000 SQFT)	
	Is groundwater anticipated to be in excavation	
	Excavation entry/egress requirements	
	Will excavation equipment perform lifting	
	QA Inspection(s)	
	Backfill requirements	
	Surface restoration: <input type="checkbox"/> Reseeding <input type="checkbox"/> Resodding <input type="checkbox"/> Replanting <input type="checkbox"/> Repaving	
	All required wording concerning subcontractor duties is in Statement of Work	

Comments:

---



---



---



---



---



---

<b>PPPL</b>	PRINCETON PLASMA PHYSICS LABORATORY	<b>PROCEDURE</b>	No. ENG-024 Rev 4 page 2 of 2
	<b>ENG-024 Sample Digging Permit Form and Checklist</b>		<b>Attachment 1</b>

<b>Dig Coord.</b>	<b>PPPL DIGGING PERMIT # _____ Work Order # _____</b>						
<b>To be filled in by Requestor</b>	<b>REQUESTOR: _____ DATE OF REQUEST: _____</b> <b>DEPARTMENT: _____</b>  <b>PROJECT TITLE: _____</b> <b>Description:</b> Include reason for excavation, duration of work digging method & equipment to be used, excavator (PPPL or outside contractor) location and sketch of work area, all cautions known to the initiator (attach separate sheet if needed), and NEPA Form number and Certification Date. 1. REASON – 2. DURATION – 3. METHOD & EQUIP. 4. EXCAVATOR – PPPL <input type="checkbox"/> CONTRACTOR <input type="checkbox"/> 5. LOCATION – 6. CAUTIONS – 7. EXPECTED SOIL TYPE - _____ PPPL Approval of Soil Type _____ 8. NEPA NUMBER _____ DATED: _____						
<b>QDPS</b>	Name of Qualified Digging Project Supervisor: _____ Approval by Digging Coordinator Required: _____						
<b>CP</b>	Subcontractor Competent Person (CP): (Please Print): _____ Approval by I.H. Required: _____						
<b>Dig. Coord.</b>	Drawings reviewed for issuance: _____ State of New Jersey DIG Required <input type="checkbox"/> Yes <input type="checkbox"/> No CALL 1-800-272-1000 (By Excavator) Coverage of digging by CP 100% <input type="checkbox"/> periodic inspection <input type="checkbox"/> Coverage of digging by Digging Project Supervisor 100% <input type="checkbox"/> periodic inspection <input type="checkbox"/> Backfilling Requirements: _____						
<b>I.R.</b>	Independent Review by: _____ Signature: _____ Date: _____						
<b>SAFETY</b>	OSHA Review by: _____ Date: _____ Concurrence to digging coverage by ES&H & Digging Project Supervisor: _____						
<b>Dig. Coord.</b>	<b>Permit issued by: _____ Date: _____</b>						
<b>To be filled in by Requestor</b>	<b>Start of work Date: _____ Expiration Date: _____</b> I HAVE PERSONALLY REVIEWED THIS PROJECT IN THE FIELD WITH THE ATTACHED DRAWINGS AND FULLY UNDERSTAND THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN IN THE WORK AREA AS NOTED ON DRAWINGS, THE PERCENT OF COVERATE AND THE CAUTIONS EXPLAINED. KEEP THIS PERMIT WITH ATTACHMENTS AT JOB SITE AT ALL TIMES.						
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center;">1.</td> <td>DIGGING PROJECT SUPERVISOR/CP: _____ Date: _____</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>EQUIPMENT OPERATOR(S): _____ Date: _____</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>DIGGING COORDINATOR/DESIGNEE VALIDATION (SIGNATURE &amp; DATE): _____</td> </tr> </table>	1.	DIGGING PROJECT SUPERVISOR/CP: _____ Date: _____	2.	EQUIPMENT OPERATOR(S): _____ Date: _____	3.	DIGGING COORDINATOR/DESIGNEE VALIDATION (SIGNATURE & DATE): _____
1.	DIGGING PROJECT SUPERVISOR/CP: _____ Date: _____						
2.	EQUIPMENT OPERATOR(S): _____ Date: _____						
3.	DIGGING COORDINATOR/DESIGNEE VALIDATION (SIGNATURE & DATE): _____						