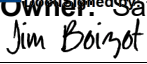
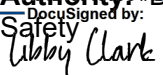
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<small>DocuSigned by:</small> Owner: Safety Manager  7/17/2019	Original Effective Date: Grandfathered	
<small>DocuSigned by:</small> Authority: Director of Human Resources and Safety  7/18/2019	Current Effective Date: 07/15/2019	
<small>6FAAF373D904473...</small> Review Frequency: Annually	Next Review Date: 07/15/2020	

Purpose:

This program has been written to ensure all employees and contractors performing excavation, trenching or underground boring on Platte River Power Authority (PRPA) property follow standard safety practices to ensure their safety and the safety of others. Any permit required excavation, trenching and boring work must be performed under the supervision and direction of a qualified competent PRPA employee. It is the intent of PRPA to follow OSHA 1926 Subpart P as minimum best practice guidelines.

Program Requirements:

This program consists of the following components:


1. Determination of application of an Excavation Permit
2. Underground Utility Locations
3. Job Briefing
4. Sloping/Benching and Ingress/Egress of excavation
5. Hazardous Atmosphere
6. General Safety Considerations

1. Determination of Application of an Excavation Permit

Excavation permits may be required for some forms of excavation on Platte River Power Authority property and/or easements. The decision regarding whether the excavation shall be permitted shall include, but not be limited to such criteria as: excavation depth, scope of intended work, soil conditions, location of excavation in relation to potential hazards, potential for hazardous atmosphere, exposure to falling loads and other pertinent information. The excavation permit and any associated drawings shall be kept at the job location until completion, with a second copy of the permit and drawings to be kept in the Health and Safety Department office.

2. Underground Utility Locations

Prior to any permit required excavation on Platte River property or easements, locations of all types of underground utilities shall be determined by Platte River Power Authority's Utility Locator or qualified

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contractor, a designated PRPA Engineer, and Utility Notification Center of Colorado (UNCC). Notice to the PRPA Utility Locator and UNCC must be given at least three business days prior to any excavation work commencing unless the project is considered emergency repair to a critical system. If the project does not involve outside contractors performing excavation work, the permit requestor shall call UNCC for utility locates. If contractors are involved in the excavation process the permit requestor shall ensure the contractor calls for UNCC utility locates **prior** to issuance of the permit and start of work so that the contractor's name is on the UNCC locate ticket.

If the excavation site is located within close proximity (18" on either side of marked utility, with consideration to depth), the exact location shall be determined using reasonable care by one or more of the following methods. This shall be done in the presence of the appropriate Platte River Representative and a representative of the appropriate utility.

- Potholing
- Pilot trenching
- Visual verification of the utility
- Use of non-mechanized excavation tools
- And other nondestructive excavation practices

At first indication of damage to any underground utility, the job supervisor shall immediately stop all work and report the damage to the proper utility owner for an evaluation. Excavation shall be halted if necessary. The job supervisor will evacuate all workers from the area if imminent danger is present, e.g. punctured gas line.

Reporting Procedures:


- For Rawhide, the Control Room and Safety should be notified immediately followed by I & E in the case of electric power, Engineering if air or water lines.
- For PRPA Headquarters, the excavation contractor who hits a tier 1 utility will need to call UNCC (811) to report the hit. The contractor will then contact PRPA's onsite construction inspector/PRPA rep and/or project manager who will contact the safety department. If a gas line has been hit, the contractor or on site PRPA representative will need to call 911 then 811.

3. Job Briefing

Any permit required excavation requires a job briefing. The briefing will be held to discuss the known hazards and locations of those hazards as well as those parties that may be involved in corrective actions. The briefing shall include a review of the permit, area to be excavated, estimated depth, exiting requirements, sloping requirements and/or use of a trench box, if a hazardous atmosphere is present, and if a traffic control plan is necessary.

For Rawhide, if applicable the briefing should include the permit requestor, contractors (if involved) or excavating staff/PRPA operator, designated Engineering representative, CAD technician, Safety, I & E, Operations, and the Competent Person assigned to the permit.

For all other PRPA facilities the required representatives will be the construction inspector and/or project manager, and Safety.

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4. Sloping/Benching and Access/Egress

Employees entering excavations 5 feet or more in depth must be protected by an adequate protective system or approved sloping and/or benching. Employees entering excavations less than 5 feet in depth or where the excavation may engulf the employee must be protected by an adequate protective system or approved sloping and/or benching. Equipment operators shall be trained and qualified on the equipment being operated, in addition to being familiar with excavation terminology such as sloping and benching. No person shall be permitted to be under suspended loads or digging equipment.

A registered professional engineer shall design protection systems for excavations greater than 20 feet deep. For excavations 20 feet deep or less, excavations shall be sloped one and one-half horizontal to one vertical (34 degrees measured from the horizontal). All soil on Platte River property or easements is classified as Type C unless a competent person approves a different classification.

A stairway, ladder, ramp, or other safe means of egress shall be placed in excavations that are 4 feet or more in depth. Lateral travel distance to an exit shall be no more than 25 feet lateral travel. Ladders must extend 36 inches above the point of support at the top of the excavation.

5. Hazardous Atmosphere

The competent person is responsible for determining the need for atmospheric testing. If a hazardous atmosphere exists or could be reasonably expected to exist, continuous air monitoring will be required. Other adequate precautions shall be taken such as providing ventilation or providing emergency rescue equipment.


6. General Safety Considerations

While the excavation is open underground utilities shall be protected, supported, or removed to safeguard employees. All surface objects that may present a hazard to employees by rolling or falling into the excavation shall be removed or supported and spoil piles shall not be allowed within two feet of the excavation in any direction.

When the open excavation creates exposure to vehicle traffic, traffic control must be in place. If the open excavation creates an exposure to pedestrian traffic, barriers and warnings must be in place.

Implementing Parties and Assigned Responsibilities:

The PRPA Safety Department has the overall responsibility of ensuring that PRPA has a current program to manage the hazards associated with excavations. This program applies to all individuals, both PRPA employees and outside contractors, who perform excavations in the performance of their jobs. It establishes the minimum requirements for safe working conditions with excavations.

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PRPA Health and Safety Department is responsible for:


- Assessing the hazards of excavations in coordination with the assigned competent person.
- Issuing permits in accordance with this procedure.
- Provide and organize training to employees as needed.
- Maintaining excavation permits on file for two years plus current.

The Project Manager or Lead (permit requestor) is responsible for:

- The excavation permit requestor should have all underground as-builts, drawings, or maps of the excavation **prior** to issuance of the permit and the locate process.
- Requesting locates with the PRPA Utility Locator with minimum 72 hours notice, unless the project is considered repairs to a critical system. If the project does not involve outside contractors, the permit requestor shall call UNCC for utility locates at the time the PRPA Utility Locator is contacted. If Contractors are involved in the excavation process the permit requestor shall ensure the contractor calls for UNCC utility locates **prior** to issuance of the permit and start of work so that their name is on the UNCC locate ticket.
- Conducting a job briefing prior to the start of work. The briefing will be held to discuss the known hazards and locations of those hazards as well as those parties that may be involved in corrective actions. The briefing shall include a review of the permit, area to be excavated, estimated depth, exiting requirements, sloping requirements and/or use of a trench box, if a hazardous atmosphere is present, and if a traffic control plan is necessary.
For Rawhide, if applicable the briefing should include the permit requestor, contractors (if involved) or excavating staff/PRPA operator, designated Engineering representative, CAD technician, Safety, I & E, Operations, and the Competent Person assigned to the permit.
For all other PRPA facilities the required representatives will be the construction inspector and/or project manager, and Safety.
- Obtaining and completing the Excavation Permit prior to the start of the work on the excavation.
- Communicating with the System Engineering or Engineering Services Manager if any unidentified utilities, whether live or abandoned power or piping, are found during the locate or digging process. The Engineering Manager will determine the criteria for consideration to updating Adept prints that will help to identify previously unmarked utilities found during the excavation.
- Upon completion of the permitted excavation work all forms, associated drawings, and the excavation permit shall be signed and returned to the appropriate Health and Safety Office (Rawhide or HQ) by the permit requestor for filing and recordkeeping.

Managers and Supervisors are responsible for:

- The safety of their employees and the prevention of accidents. It is their responsibility to lead by example and ensure that employees understand and comply with all applicable Health & Safety policies and procedures.

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The Excavation Competent person is responsible for:

- Determining adequate protective systems (sloping, shoring, or shielding) for employee protection.
- Ensuring excavations are protected from vehicular traffic by means of substantial barricades.
- Removing employees when evidence indicates a possible cave in, failure of protective systems, hazardous atmosphere, or other hazardous conditions.
- May stop work operations when unsafe conditions exist.
- Completing the Excavation Inspection Checklist daily, when employees or contractors may be working in the excavation.
- Inspecting conditions after every rainstorm or other hazard-increasing occurrence.
- Ensuring that proper water removal equipment is used to control the accumulation of water in a trench. If water accumulation cannot be controlled, then the work shall be suspended.
- Ensuring all employees wear personal protective equipment as required.
- Keeping hard copy of permit on the job site.
- Ensuring the exact location of marked utilities is determined. If the excavation site is located in close proximity (18" on either side) of marked utilities, the exact location shall be determined using reasonable care by one or more of the following methods: potholing, visual verification of the utility, use of non-mechanized excavation tools, or any other nondestructive excavation practices.

PRPA Employees working in excavations are responsible for:

- Reviewing Excavation Inspection Checklist
- Understanding the hazards associated while working in excavations.


Definitions and Acronyms:

Benching--A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal steps, usually with vertical or near-vertical surfaces between levels.

Competent Person--A person, as defined by OSHA, as anyone capable of identifying existing and predictable hazards in the work environment and one who has the authority to correct such hazards. A competent person is also knowledgeable of all requirements and aspects of excavation work and one who has completed safety training or a competent person course.

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

Permit Requestor—The PRPA employee who is requesting the excavation permit. The requestor may be any one of the following: the project manager, the designated competent person, PRPA construction inspector, project lead, department supervisor or manager.

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Permit Required Excavation--Any excavation for which a Health and Safety representative has determined that conditions warrant the use of a Excavation Permit.

Potholing--The practice of digging a test hole to expose underground utilities to ascertain the horizontal and vertical location of the utility. Potholing can be accomplished by any of the following methods; hand digging, backhoe with spotter, and vacuum excavation.

Protective System--A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

Shield--A structure that is able to withstand the forces imposed upon it by a cave-in and thereby protect employees within the structure. Shields may be permanent structures or can be designed to be portable and moved along as work progresses. Shields may either be pre-manufactured or job-built in accordance with 29 CFR 1926.652(c)(3) or (c)(4).

Sloping--A method of protecting employees from cave-ins by excavating the walls of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

Type C Soils--are cohesive soils with an unconfined compressive strength of 0.5 tsf or less. Granulated soils such as gravel, sandy, sandy loam soil.

Trench--A narrow excavation, in relation to its length, made below the surface of the ground.

Trench boxes—Structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structures.

Associated Documents:

Appendix A - Excavation Permit

Appendix B - Excavation Inspection Checklist

Confined Space Entry Procedure

Colorado Revised Statutes Title 9 – Article 1.5, as amended

PRPA Pipeline Operations & Maintenance manual, Procedure 10 (Reference 49 CFR 192 Section 605) pertaining to gas pipeline excavation practices.

Utility Notification Center of Colorado, <http://colorado811.org>

Appendix A: Excavation Permit



EXCAVATION PERMIT

No **00001**

PRPA REQUESTOR:	LOCATION:	DATE ISSUED:
ASSIGNED COMPETENT PERSON:	UTILITY LOCATOR/S:	PLANNED DATE OF EXCAVATION:
EXCAVATING CONTRACTOR or PRPA DEPARTMENT PERFORMING EXCAVATION:		DATE EXPIRES:

JOB DESCRIPTION:

PRE-EXCAVATION CHECKLIST:

ASSIGNED COMPETENT PERSON IS RESPONSIBLE FOR THE FOLLOWING:

- DOCUMENTATION OF UTILITY LOCATES COMPLETED PRIOR TO EXCAVATION DATE RECEIVED: _____
ATTACH SUPPORTING DOCUMENTS: LOCATE REPORTS, DETAILED DRAWINGS, PHOTOS, NOTES AS NEEDED.
- EXPOSURE TO VEHICULAR TRAFFIC? YES NO IF YES, TRAFFIC CONTROL MUST BE IN PLACE
- EXPOSURE TO PEDESTRIAN TRAFFIC? YES NO IF YES, BARRIERS AND WARNINGS MUST BE IN PLACE
- EMERGENCY CONTACT INFORMATION HAS BEEN REVIEWED
- HOLD DAILY JOB SITE BRIEFING

IF PERSONNEL WILL BE ENTERING THE EXCAVATION, COMPLETE THE FOLLOWING:

- PERFORM DAILY INSPECTION OF EXCAVATION
- SOIL TYPE: PRPA CONSIDERS ALL SOIL TO BE TYPE C
- SLOPING OR SHORING REQUIRED: YES NO (> 5 ft DEPTH)
NOTE: REQUIRED WHEN TRENCH OVER 5FT DEEP IN SOIL TYPE C OR WHEN TRENCH IS OVER WORKERS' HEAD
(EXAMPLE: WORKER BENT OVER WHILE TUNNELING IN A 3FT TRENCH)
MAXIMUM ALLOWABLE SLOPE FOR TYPE C SOIL IS 1.5 : 1 (H:V) (34 degrees max.)
- ACCESS/EGRESS: STAIRWAYS, RAMPS, LADDERS POSITIONED WITHIN 25ft. OF ALL WORKERS (>4 ft DEPTH)
LADDERS MUST BE EXTENDED 36" ABOVE THE EXCAVATION
- PERFORM INSPECTION OF EXCAVATIONS AFTER EVERY RAINSTORM OR ANY CHANGE IN CONDITION
- ENSURE PROPER WATER REMOVAL EQUIPMENT TO CONTROL ACCUMULATION OF WATER
- DO NOT ENTER ANY EXCAVATION SHOWING SIGNS OF SOIL DISTRESS. - CONTACT SAFETY

VOID UNLESS SIGNED BY ALL PERSONS LISTED BELOW

Project Manager or Excavation Permit Requestor: _____

Safety Rep : _____

PERMIT SIGNED AND RETURNED TO SAFETY AFTER JOB COMPLETED

Date and time excavation completed: _____

Job completion verified by (Permit Requestor): _____



Appendix B: Excavation Inspection Checklist

PRPA DAILY EXCAVATION CHECKLIST

Competent Person: _____ Date: _____

Project Location: _____ Time: _____

Job Description: _____

Instructions: Complete the items in the checklist by checking the appropriate response and noting descriptive conditions in the comment column.

Description of Inspection Items:	Yes	No	NA	Comments/Corrective Actions if Required
1. Have all utilities been located?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Is proper traffic control in place?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Are all employees protected from cave-ins by a protective system or by sloping or benching?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If yes, benching, sloping or what type of system is being used
4. Have hazards around the excavation been removed or mitigated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Are employees protected from loose materials or tools which could fall into the trench?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Is all spoil maintained at least 2 feet back from the edge of the excavation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Are ladders needed for access and egress? If so, are they installed correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ladders will need to be placed on level footing and extend 3 feet above edge.
8. Is there evidence of fissures or cracks in the face of the trench wall?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remove employees when evidence indicates a possible cave in or failure of protective systems.
9. Is there evidence of sloughing of soil from the trench face?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remove employees when evidence indicates a possible cave in or failure of protective systems.
10. Does the excavation/trench contain standing or seeping water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remove employees when water accumulation cannot be controlled.
11. Does the excavation contain a hazardous atmosphere or have the potential for a hazardous atmosphere? (e.g. : CO from gas powered pumps or nearby vehicle traffic)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remove employees when a hazardous atmosphere exists.
12. Any other safety concerns?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Sign the form to attest that the indicated items were reviewed during the inspection.

Competent Person Signature: _____ Date: _____