



Revision 0 – August 14, 2018

To Whom It May Concern,

In response to Violation of Oregon Utility Notification Center Rules DOJ File No. 860140-GB291 – 18/Docket No. NC 383, and to fully comply with the direction of the OPUC, Portland General Electric has completed a review of our current Damage Prevention Program. The purpose of the policy and our commitment is to ensure our program effectively protects the safety of our public, our employees, underground infrastructure and to reduce missed locates per the intentions of the OUNC and the rules and regulations of the OUNC.

PGE was instructed to submit an improvement plan to avoid future failures to properly locate our facilities. In response, PGE management supported creation of a written Line Locating Procedure to document the responsibilities of all PGE stakeholders involved in the location of our underground facilities through the OUNC. PGE management is committed to overseeing the attached Line Locating Procedure as a living document driven by ongoing performance assessments of the program.

The Damage Prevention Program will be administered through a single department in conjunction with Stakeholder Management. An annual assessment review of the Line Locating Policy and Procedures will be presented to PGE T&D Operations at the executive level to provide program transparency and drive accountability of our stakeholders.

Program stakeholders include but is not limited to; PGE's Transmission and Distribution Management, Management of our partnering Line Locating contractors and the individual contributors doing the work associated with effectively locating PGE's underground facilities.

Performance reviews will be established to measure the program effectiveness to meet the overall requirements of the Oregon Dig Law i.e. response time, accuracy, damage response and damage assessments.

Thank you for your direction and partnership in our ongoing commitment to damage prevention and public safety.

Sincerely,

Larry Melzer, Supervisor

A handwritten signature in black ink, appearing to read "Larry Melzer", written in a cursive style.

Contract Services and Inspections

Portland General Electric

## PGE LINE LOCATING IMPROVEMENTS

In response to OAR 952-001-0070(7)(a), the purpose of this document is to show improvements to PGE’s work practices and policies/procedures, both internally and externally. After reviewing PGE’s and PGE’s contractor policies and procedures, PGE has made significant improvements. For the purposes of these documents, “PGE Contractor” refers to the contractor PGE hires to perform underground locates. The following steps have been taken:

- GIS Dept – Mapping updates to both OUNC and PGE Contractor have been reduced to a frequency from quarterly to bi-monthly for OUNC, and from monthly to bi-weekly for PGE Contractor.
- Special Testers - Substation polygons are being created to shift requested locates that would normally go to PGE Contractor, now to be located by PGE Special Testers. The polygons for substations (and some critical facilities such as Marquam 115KV) will be created with a 50ft buffer zone outside the fence of the subs. Inside substation polygons, locates are required for all excavation work and are performed by PGE Special Testers.
- Special Testers are now painting locate marks with white paint and a red dot in the white mark. This previously had caused confusion when a special tester put “red” marks on the ground, as PGE Contractor also puts red marks on the ground for power.
- Repair/PSLD – (See Attachment A - Repair/PSLD Policy for Facility Damage Calls) Policy to be implemented that puts responsibility on Repair/PSLD to notify PGE Contractor within 15min of PGE crew that has responded to a dig-in arriving on-site. Notification to CS&I email mailbox to follow, including simultaneous notification to PGE Contractor by CS&I and an acknowledgement receipt from PGE Contractor. This action will reduce the chance of a PGE Contractor investigation supervisor from arriving after the repaired conductor location has been backfilled, which will assist with a higher accuracy on determining cause.
- Pre-Req Coordinators – PGE design sketches will be attached to all locate requests. This will allow PGE Contractor locaters to have access to a PGE design sketch without having to request it prior to leaving for the field or while in the field.
- Standards – PGE Standards department to research options for installing tracer wire in conduit/vaults, moving to conduit with built-in tracer wire, and/or modifications to existing vaults/lids with external ground lug and the use of marker balls.
- PGE Contractor – Implement performance measurements for PGE Contractor on a quarterly/monthly basis (i.e.: # of damages/total # of locate requests, QA locator report)



Monthly report recently implemented for damage ratio, number of locate requests to number of damages

- PGE Claims Dept to add a new investigator for more detailed fact finding on unresolved damage claims

## LINE LOCATING PROCEDURES FOR PGE CONTRACTOR

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### 1. IDENTIFY THE WORK AREA

NOTE: The order of these steps listed below are recommended but may be performed in any order as deemed appropriate by the PGE Contractor.

#### 1.1 ONE CALL REQUEST FOR LOCATION OF UNDERGROUND FACILITIES (OUNC 811)

- Refer to OPUC Chapter 860 Division 24 Safety Standards - [https://secure.sos.state.or.us/oard/viewSingleRule.action;JSESSIONID\\_OARD=g50z5J3eaMA6LQjqPtWlrj8utz4lsO0Ou52mivqif8YEYmH9HW0s!2024649768?ruleVrsnRsn=221254](https://secure.sos.state.or.us/oard/viewSingleRule.action;JSESSIONID_OARD=g50z5J3eaMA6LQjqPtWlrj8utz4lsO0Ou52mivqif8YEYmH9HW0s!2024649768?ruleVrsnRsn=221254)

#### 1.2 PGE CONTRACTOR REVIEW OF THE TICKET

- 1.2.1 Confirm the date, time and using the Company's maps and records, determine if a visual examination is required. Determine completion deadlines for the following ticket types:
- Regular 48-hour notification – Contractor to complete within 48hrs
  - Design locate notification – Within 10 business days after a designer notifies the Oregon Utility Notification Center (OUNC) of a proposed project, the operator of the underground facility shall mark with reasonable accuracy all its locatable underground facilities.
  - Emergency notification or less than 48 business day hour notice – Contractor, during normal business hours, shall make a best effort to perform locates within 2 hours.
- 1.2.2 When the Company supplied maps, records or instructions indicate a visual examination is required, visit the excavation site and locate the Company's facilities as required.





- 1.2.3 If visual examination is not required, provide positive response notification to the excavator. Contractor is responsible for the method and adequacy of excavator notification.
- 1.2.4 Verify that the work area matches the description of the ticket.
- 1.2.5 The description is required to include the date, location, type of work and contact information for the excavator or designer.

### 1.3 QUALITY ASSURANCE BY CONTRACTOR

- 1.3.1 FieldCheck Audit Process – Contractors Quality Assurance Program is focused on creating a culture that drives exceptional behaviors and performance and consists of an internal quality audit process detailed below. Audit Process: The documentation created through pre-excavation photos is immediately delivered electronically to the quality audit process, which uses FieldCheck software. The documentation is then received by FieldCheck Auditors who review the photos and other supporting documentation. An audit consists of a review of the work completed comparing facility records with the photos to ensure that all known facilities are properly accounted for. If quality failures are noted during the audit process, a field quality auditor or supervisor is immediately dispatched back to the job site for corrective action. The electronic audit process is supplemented by field auditors performing worksite visits where they review and validate the locate quality. Through the audit process, Contractor uses a focused approach, rather than the traditional random audit. With this approach we can target technicians based on FieldCheck results and experience levels as well as the facility type where we focus on high profile locations to enhance quality performance and reduce damages. The results and findings from completed audits are summarized and reviewed weekly by Contractors management through a quality review board process (QRB). These review board sessions are conducted with the technician, supervisor and manager reviewing the details of the findings, identifying the root cause and taking required corrective actions. Quality errors resulting in damages are reviewed by senior management with local field management on a weekly basis.



The review process is focused on eliminating damages by determining the root cause and taking corrective actions.

- 1.3.2 Field Audit Process – The electronic audit process is supplemented by field quality auditors performing worksite visits where they review and validate the locate quality and accuracy. Through our audit process, we use a focused approach, rather than the traditional random audit. With this approach we target technicians based on FieldCheck results and experience levels as well as the facility type focusing on high risk locations to enhance quality performance and reduce damages. The results and findings from completed audits are summarized and reviewed weekly by Contractors management through a quality review board (QRB) process. These review board sessions are conducted with the technician, supervisor and manager reviewing the details of the findings, identifying the root cause and taking required corrective actions. Quality errors resulting in damages are reviewed by senior management with local field management on a weekly basis. The review process is focused on eliminating damages by determining the root cause and taking corrective actions.
- 1.3.3 Technical Proficiency Reviews (TPR) – Upon graduating from training, or anytime corrective action is deemed necessary due to questionable quality, a TPR may be performed on a technician. Designed to observe and document the employee’s technical capabilities, these reviews cover all aspects of the National Utility Locating Contractors Association (NULCA) and Contractors training programs/documentation and are designed to enable coaching and skill gap training to improve performance.
- 1.3.4 Job Safety Observations (JSO) – Contractor also employs a JSO application to ensure that employees are working in a safe and efficient manner. All employees are required to receive a JSO at least once each 30 calendar days. Inspection of their work vehicle, tools, and work habits is tied to both safety and quality assurance.

#### 1.4 WHITE PAINT

- 1.4.1 Verify that white paint was used by the PGE representative to delineate work area.



- 1.4.2 White paint is not required to delineate work area if the operator can determine precisely the direction, length and location of the proposed work by referring to a locate ticket or;
- 1.4.3 When needed, before beginning the work the PGE representative and operator meet at the work site to exchange information that delineates work area.

#### 1.5 NO FACILITIES IN WORK AREA

- 1.5.1 If there are no facilities in the work area, one of the following must take place:
  - 1.5.1.1 Locate ticket is commented “No PGE facilities”
  - 1.5.1.2 Locator paints inside or near the work area “No PGE”

### 2. DIAGNOSTIC CHECK OF THE LINE LOCATE EQUIPMENT

#### 2.1 CHECK THE EQUIPMENT

- 2.1.1 A diagnostic test is required to be performed prior to use daily.
- 2.1.2 The steps for this process may vary by type of line locating equipment. Supervisor inspects monthly

### 3. PERFORM LINE LOCATING

#### 3.1 LINE LOCATING METHODS

- 3.1.1 Perform line locations by using visual keys (risers, valve boxes, regulator stations, vent points, etc.) when present and both of the following methods:
  - Electronic line locators or acoustic pipe tracers
  - Documentation
  - When facilities cannot be identified by documentation, visual keys are to be used as the second method. In areas where documentation cannot be referenced with existing landmarks, electronic equipment may be used independently. If the facility cannot be located electronically, it must be potholed by the excavator.
- 3.1.2 facility must be potholed.





- 3.1.3 Anytime lines are potholed, take accurate measurements and initiate the appropriate documentation to correct any discrepancies.
- 3.1.4 Once completed, the Unusual Operating Condition (UOC) documentation or electronic equivalent will then be forwarded to PGE Engineering for updating of the map(s).
- 3.1.5 Estimated facility depths will not be provided to contractors or customers with paint markings.

**4. UNDERGROUND FACILITIES WILL BE MARKED WITH THE FOLLOWING INFORMATION:**

(As per OAR 952-001-0070 (7))

<u>Color</u>	<u>To Indicate:</u>
<b>RED</b>	Electric power lines, cables or conduit, and lighting cables
<b>YELLOW</b>	Gas, oil, steam, petroleum, or other hazardous liquid or gaseous materials
<b>ORANGE</b>	Communications, cable TV, alarm or signal lines, cables or conduits
<b>BLUE</b>	Water and irrigation lines
<b>GREEN</b>	Sewers, drainage facilities or other drain lines
<b>WHITE</b>	Pre-marking of the outer limits of the proposed excavation or marking the centerline and width of proposed lineal installations of buried facilities
<b>PINK</b>	Temporary Survey Markings
<b>PURPLE</b>	Slurry and reclaimed

(As per this procedure)

<u>Color</u>	<u>To Indicate:</u>
<b>WHITE WITH RED DOT</b>	PGE Special Testers

- 4.1.1 Line Markings:
  - At a minimum, place markings within the proposed area and extend the markings 2 feet outside the area.



- NOTE: Placing markings 2 feet outside the area may not always be practical due to accessibility. If accessibility is impractical, the excavator must be informed that there are facilities that extend outside the proposed work area and the additional 2 feet will be marked if specifically requested. This must be documented on a form or electronic equivalent. When possible, this information will be sent to the excavator by fax or electronically. Place markings directly over the facility when practical.
- Should be approximately 18 inches long and 1 inch wide
- Do not exceed 50 feet spacing
- For service lines on private property, use 2-inch painted dots, with a maximum of 10 feet spacing on hard surface only
- At street crossings, place markings on each side of the street, with at least one mark in the middle of the street, provide additional marks as necessary
- “Offset” markings/staking should clearly indicate the direction, distance and path of the facility
- Communications/electric facility markings must contain the lettering of the utility to distinguish Company facilities from other utilities
- Facilities installed in a casing/sleeve must be identified as such, if known
- Mark substructures such as vaults, pits, etc., that are physically larger than the obvious surface indication to define the parameters of the structure.
- Critical PGE facilities, as identified by GIS, are located by PGE Special Testers such as...Substation getaways, critical feeders, outside substations.
- In certain situations where locators cannot locate a primary or secondary conductor, the locator will contact the area supervisor who will then contact PGE and request a special tester to assist.

4.1.2 Approved marking materials:

- In paved areas – approved paint
- In unpaved areas – approved paint, stakes, flags, whiskers





NOTE: Site conditions such as wet surfaces and overgrown vegetation should be considered. Appropriate markings materials shall be used for visibility.

#### 4.2 INACCURATE LINE MARKINGS

4.2.1 When inaccurate line markings are found at a job site, remove or paint over. When appropriate, use these colors for these surface areas:

Black spray paint for asphalt

#### 4.3 TROUBLE LOCATE INVESTIGATION

##### 4.3.1 Notification

4.3.1.1 When the facility has been determined as unlocatable, the following reporting process will be used.

4.3.1.2 Company/contractor will notify the PGE representative that a trouble locate exists with PGE facilities that may conflict with the excavator's work area.

4.3.1.3 A trouble locate request will be submitted to PGE's Power Quality Specialists as soon as practical to minimize wait time and job delay. This creates a work order for a PGE Special Tester.

4.3.1.4 At a minimum, the company will comply with all state laws and regulations prior to potholing.

##### 4.3.2 Investigation

4.3.2.1 Trouble locates will be investigated as soon as possible by the Contractor's supervisor and locate technician.

##### 4.3.3 Removal of marks

4.3.3.1 Remove and/or cover over inaccurate line markings with black paint, dots, or any markings laced to determine trouble locate area to avoid confusion from approved markings.

### 5. LOCATING DEVICES

#### 5.1 CONTRACTOR USES RADIODETECTION RD7100 PRECISION UNDERGROUND SERVICE AND UTILITIES LOCATOR



## 5.2 MARKER BALLS USED BY PGE

- 5.2.1 Marker balls are small self-contained transmitters that can be located by a compatible locator receiver.
- 5.2.2 The marker balls mode shall be selected on the approved compatible locator receiver utilizing a manufacture approved frequency (HZ).
- 5.2.3 Marker ball mode uses antenna in a “peak” configuration.
- 5.2.4 Prior to utilizing the marker ball, verify the unit is operational by turning it on and utilizing the appropriate receiver to test for signal strength.
- 5.2.5 Always use operator approved marking procedures to identify the location when utilizing a marker ball to locate pipe, fittings, squeezes, etc.

## 6. PROVISION OF INFORMATION PRIOR TO MAPPING

### 6.1 UNMAPPED SERVICES

- 6.1.1 The intent of this procedure is to provide visual and written information to Line Locating personnel in cases where a service line has been installed but the information has not yet been entered into the GIS mapping system.
- 6.1.2 Symbols are provided in FieldCheck software that can provide additional facility location information. These symbols can mean facilities have been installed, replaced, retired, and provide additional information. The Work Request (WR) box, under layers, must be selected to view these symbols. The WR can also be used to view additional facility documentation.
- 6.1.3 For residential locations, options include but are not limited to:
  - Marking paint, whiskers, curb markers, etc.

## 7. LINE LOCATION DAMAGE PREVENTION – SEE ATTACHED PGE LINE LOCATING POLICY/PROCEDURE



## **8. CRITICAL FACILITY PROCEDURE**

### **8.1 EXCAVATION AROUND CRITICAL FACILITIES**

8.1.1 If the requested work area crosses critical facilities

8.1.1.1 Critical facilities for PGE are inside of substations and outside of substations with a 50ft buffer zone.

- OUNC after receiving the locate request, verifies polygons in their mapping system and if a polygon exists within these parameters, rejects the ticket, which then notifies PGE to proceed with sending a PGE special tester to complete the locate request.

## **9. DOCUMENTATION & RECORD RETENTION**

### **9.1 DOCUMENTATION**

9.1.1 In cases where the One-Call Center is closed or not available, PGE locates their own facilities for emergency locates. 48hr locate requests can be generated 24hrs/day, 7 days/week. Upon receipt, each locate request will be recorded and each locate will be performed within the required time frame. This process may also be used if the facility has not been located within the time specified by law and the excavator wishes to contact PGE directly to help resolve the issue.

### **9.2 RECORD RETENTION**

9.2.1 Record retention is 6 years.





## **ATTACHMENT A - REPAIR/PSLD POLICY FOR FACILITY DAMAGE CALLS**

Portland General Electric (PGE) Repair Dispatch and PSLD are accountable for notifying PGE Contractor immediately when a damage call is received. This policy is put into place to prevent discrepancies on “who’s at fault” and to have a PGE Contractor damage investigator on site prior to the repair being made and the damaged location backfilled. Safety and PGE’s commitment to reduce the number of disputes on dig-ins are the drivers of this policy. PGE has an obligation to the PUC to act on reducing damage to PGE underground conductors and to increase the accuracy of PGE Contractor markings in the field.

### **Procedures**

When a PGE underground conductor is damaged in the field, the call comes into Repair Dispatch (or PSLD) and the following procedures take place:

- An outage record is created, and a crew/eagle is dispatched
- Once onsite, the damaged conductor or facility is identified and verified that it is a PGE conductor or facility
- The eagle/crew calls repair dispatch to request a crew and equipment needed
- Repair Dispatch or PSLD requests an emergency locate through the OUNC system (One Call)
- Within 15 minutes of receiving the call from the PGE first responder (confirming that it is a PGE facility), repair dispatch calls PGE Contractor with the locate ticket number, nearest address, and requests a PGE Contractor damage investigation
- Repair Dispatch makes a log comment detailing the locate ticket number, time of the call and specific details on the damaged conductor
- Repair Dispatch takes a screen shot of the outage and sends via email to the CS&I Damage Prevention mailbox (*CSI.Damageprevention@pgn.com*)