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## Excavation/Fill/Soil Disturbance

### 1.0 PURPOSE

The Laboratory's Excavation/Fill/Soil Disturbance document contains requirements for all workers, supervisors, and managers who perform excavation-related tasks within the boundaries of the Los Alamos National Laboratory (LANL or the Laboratory). The purpose of this procedural document is to define the process that when implemented provides for a safer work environment that protects employees, the public, and the environment.

**Note:** For further detailed guidance, reference [Excavation/Fill/Soil Disturbance Tier-3 document](#).

### 2.0 AUTHORITY AND APPLICABILITY

#### 2.1 Authority

This document is issued under the authority of the Laboratory Director to direct the management and operation of the Laboratory, as delegated to the Associate Director for Environment, Safety, Health (ADESH), as provided in the [Prime Contract](#). This document derives from the Laboratory [Governing Policies](#), particularly the section on Safety, [10 Code of Federal Regulations \(CFR\) 851](#), *Worker Safety and Health Program*, [29 CFR 1926](#), *Safety and Health Regulations for Construction*, Subpart P, *Excavations*, [29 CFR 1910](#), *Occupational Safety and Health Standards, General Industry*, and [LANL Master Specification, Section 31-2000](#), *Earth Moving*.

- Issuing Authority (IA): Associate Director for Environment, Safety, and Health (ADESH)
- Responsible Manager (RM): Occupational Safety and Health (OSH) Division Leader
- Responsible Office (RO): Occupational Safety and Health–Industrial Safety and Hygiene Group (OSH-ISH)

#### 2.2 Applicability

This document applies to all Laboratory employees, support services subcontractors, and subcontractors who perform excavations, fills, or any soil disturbance on Laboratory property, or within known Potential Release Sites (PRSs) on Los Alamos County property.

Excavation/fill/soil disturbance activities external to Laboratory property (and not within a known PRS) must comply with the off-site jurisdictional policies (federal, state, or local) and will not require a Laboratory Excavation/Fill/Soil Disturbance Permit.

**Note 1:** Excavations/fills/soil disturbances within a PRS, whether on Laboratory or Los Alamos County property, must comply with the stipulations of this document.

**Note 2:** Any fill or material transfer project requires two Excavation/Fill/Soil Disturbance Permits, one for the point of origin and one for the destination (if on Laboratory property or a PRS).

### 3.0 PROCEDURE DESCRIPTION

#### 3.1 Process for Completing Excavation/Fill/Soil Disturbance Permits

1. The Excavation Permit Requester, designated Person In Charge (PIC), Alternate PIC, and Subcontract Technical Representative (STR) must successfully complete [Course #31419, Excavation/Fill/Soil Disturbance Self-Study](#), before submitting a request for review.

**Note:** Refresher training is required on an annual basis.

2. The Excavation Permit Requester submits an Excavation/Fill/Soil Disturbance Permit Request by completing an electronic review request on the [OSH-ISH Excavation/Fill/Soil Disturbance Permit Review Request website](#).

**Note:** This website is designed for use with Microsoft Internet Explorer only.

**Note:** When a project crosses Technical Area (TA) boundaries, one excavation permit per TA must be submitted, unless approved by OSH-ISH.

**Guidance:** Changes to the original request/map may only be made before review request approval. However, requesting a change in scope may reset the review due date.

3. The OSH-ISH Excavation Review Subject Matter Expert (SME) receives and processes the review request and an e-mail is sent notifying the SMEs/Reviewers, the Engineering Services-Utilities and Infrastructure/Utilities Mapping and Locating Team (ES-UI/UMAP), and the Facility Operations Director (FOD) of work being planned within their designated areas.
4. ES-UI/UMAP conducts secondary utility drawings research.
5. SMEs conduct reviews and submit comments to OSH-ISH.
6. The STR, PIC, and/or Alternate PIC are responsible for maintaining field boundary markings to ensure they remain visible throughout the excavation. The STR/PIC/Alternate PIC must ensure that everyone involved in the excavation understands the excavation boundary markings and limits.
7. The Excavation Permit Requester, STR, PIC, or Alternate PIC request utility locates from ES-UI/UMAP.
8. ES-UI/UMAP locators are responsible for field marking the excavation boundary using white paint, flags, or whisksers. ES-UI/UMAP locators and any affected organizations locate all known utilities, complete their portion of the Excavation/Fill/Soil Disturbance Permit, then generate, sketch, and sign an AutoCAD map of the area.
9. If any utilities are found, the **closest utility shut-off point must be identified and located before excavation** according to [LANL Master Specification, Section 31-2000, Earth Moving](#), Section 1.2.D, and potholing must be performed.

**Note:** Extreme caution must be practiced when using digging bars because of the potential adjacency of nearby utilities, such as direct buried electric cable. Personnel must wear appropriate dielectric Personal Protective Equipment (PPE).

**Note:** Vacuum truck potholing within known Potential Release Sites (PRs) may be allowed on a case by case basis, and must be evaluated through the Excavation Permitting Review Process.

**Note:** Pneumatic or electric-powered tools may be used to remove asphalt or concrete overlay only the necessary depth to expose the underlying soil for a pothole. (See [P101-22](#), *Penetration Operations*.)

10. The ES-UI/UMAP Utility Review Coordinator ensures all utility organizations have located and signed off on the permit package. The ES-UI/UMAP Department Coordinator/Excavation Permit Coordinator then makes a copy of the coversheet and sketches to keep with the UMAP copy of the permit. The original permit package is taken to/picked up by OSH-ISH.
11. OSH-ISH performs a quality assurance check on the excavation permit package and reviews all SME comments with the PIC or Alternate PIC.
12. If ES-UI/UMAP signature, forms, sketches, and required documentation are present, the OSH-ISH Excavation Review SME signs, approves and issues an Excavation/Fill/Soil Disturbance Permit.

**Note:** Final review and approval of the permit will be conducted only when all required SME comments have been submitted and addressed.

**For a detailed flow diagram of the Excavation/Fill/Soil Disturbance Permit process, see the Attachment A, *Excavation/Fill/Soil Disturbance Permit Process*, flowchart.**

A copy of the Excavation/Fill/Soil Disturbance Permit, original request form and map, all SME comments, AutoCAD utility map and sketch of the area, and any other forms/approvals, detailed maps/sketches, SME comments, and appropriate permits must be maintained on-site in a readily accessible protective container or within the work package during any excavation activity.

**Note 1:** All locating organizations affected will provide a sketch of the utility locates and boundary area to the PIC, all of which must be attached to the excavation work package.

**Note 2:** An Excavation/Fill/Soil Disturbance Permit does not replace the reviews required under the Permits and Requirements Identification (PRID) process. No excavation, soil disturbance, or fill project on Laboratory property will begin until an Excavation/Fill/Soil Disturbance Permit is issued by OSH-ISH, regardless of who (the Laboratory, ES-UI/UMAP, outside contractors, etc.) is doing the work.

**Note 3:** A penetration through concrete or asphalt slabs where the soil beneath the pad is disturbed also requires an Excavation/Fill/Soil Disturbance Permit. Ground Penetrating Radar should also be scheduled in accordance with [P101-22](#), *Penetration Operations*.

### 3.2 Precautions and Limitations

This section covers work conducted in PRs that includes Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs).

The following requirements must be addressed, where applicable, when excavation/fill/soil disturbance projects are conducted within the boundary of a PRS:

- a site-specific health and safety plan,

**Note:** Only as applicable under [29 CFR 1910.120](#), *Hazardous Waste Operations and Emergency Response*, or [29 CFR 1926.65](#), *Hazardous Waste Operations and Emergency Response*.

- Occupational Safety and Health Administration (OSHA) worker training,
- soil disposal constraints,
- limited site access,
- industrial hygiene monitoring,
- PPE,
- radiological surveillance,
- enrollment in a medical surveillance program will be required if one or more of the criteria listed below is identified or as required by health hazard evaluation performed by a qualified Industrial Hygienist:
  - **1910.120(f)(2)(i)**  
All employees who are or may be exposed to hazardous substances or health hazards at or above the established permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year;
  - **1910.120(f)(2)(ii)**  
All employees who wear a respirator for 30 days or more a year or as required by 1910.134;
  - **1910.120(f)(2)(iii)**  
All employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation; and
  - **1910.120(f)(2)(iv)**  
Members of HAZMAT teams.
- excavated soil that must be managed within the boundary of the PRS and returned to the excavation upon completion of the project, and
- any soil removed from a PRS that is not returned to the excavation along with any other material (e.g., concrete, asphalt, and drainpipe) and that must be managed, characterized, and disposed of in accordance with all applicable Laboratory waste management policies and procedures.

### 3.3 Soil Transfer and Fill Material Management

**Note:** Any fill project requires [Excavation/Fill/Soil Disturbance Permit Review Requests](#) both at the point of origin and the destination (if on Laboratory property or within a PRS).

**Note:** For further soil transfer and fill material controls, reference the [Excavation/Fill/Soil Disturbance Tier-3 document](#).

### 3.4 Excavation/Fill/Soil Permit Request Priorities

#### 3.4.1 Routine Priority

A routine priority request requires an Excavation/Fill/Soil Disturbance review by a team of designated SMEs in order to identify and provide guidance for proposed work activities located within possible AOCs that may affect the environment and worker health and safety. A routine priority:

- allows for a 7-day review period, and
- allows for a one-time six-month extension provided the scope, location, and depth have not changed.

#### 3.4.2 Emergency Measures

If an emergency occurs during off-hours, it must be reported by calling the Security and Emergency Operations-Emergency Management (SEO-EM) at 667-6211, or the 911 Emergency System.

If a major failure or break in a utility system occurs, contact ES-UI/UMAP to perform emergency utility locates, and the excavation/fill/soil disturbance activity required to create a safe working environment may begin without the Excavation/Fill/Soil Disturbance Permit. Once emergency utility locates are performed, ES-UI/UMAP will e-mail OSH-ISH ([excavation@lanl.gov](mailto:excavation@lanl.gov)) the utility locate information, which includes the following: date, Excavation Permit Requester, scope, and location.

The emergency work must be completed to create a safe working environment, and an Excavation/Fill/Soil Disturbance Permit Request must be submitted the next working day to determine the site characteristics and the necessary action to complete the job.

- The review for an emergency permit request will be completed within two business days.

**Note 1:** For excavation/fill/soil disturbances that must be accomplished immediately, contact ES-UI/UMAP at 665-1051 for emergency utility locates. After normal working hours, contact ES-UI/UMAP Utility Locators directly through the Facility Supervisors at 665-4763.

**Note 2:** All emergency repair work will be conducted as if the excavation boundary area were a PRS and will comply with the following:

- No excavated material may be removed from the immediate site, until the Excavation/Fill/Soil Disturbance Review has been completed, and any requirements from the SME comments are met.
- Provide erosion and/or sediment controls during the emergency work to prevent the migration of soil, sediment, mud, etc.
- Worker training must be in accordance with [29 CFR 1910.120](#), *General Industry*, and appropriate worker protection must be provided.
- Excavated soil must be managed within the boundary of the PRS (within the immediate area, if the PRS boundary is unknown) and returned to the excavation upon completion of the project. Retain documentation of the final disposition of any soil or material that is removed from the excavation location.

- Any soil removed that is not returned to the excavation must be managed, characterized, and disposed of in accordance with all applicable Laboratory waste management procedures, unless it can be demonstrated to be free of contamination.
- An Emergency Permit is valid for two weeks.
- If an unforeseeable circumstance arises and excavated soil cannot be returned to the excavation within the two-week period, a one-time 30-day extension may be requested by contacting OSH-ISH at [excavation@lanl.gov](mailto:excavation@lanl.gov), or (665-SOIL).

### 3.4.3 Conditional Exclusion

A Conditional Exclusion request will require an expedited Excavation/Fill/Soil Disturbance Permit review to determine the possibility of working within a known PRS. ES-UI/UMAP is required to conduct a utility locate within two business days from the date the request is submitted for the commencement of activities that are on the list of approved conditional exclusions found in the [Excavation/Fill/Soil Disturbance Tier-3 document](#).

**Note:** A conditional exclusion request is allowed a one-time six-month extension provided the scope, location, and depth have not changed.

### 3.4.4 Unconditional Exclusion

Unconditional Exclusions will not require an Excavation/Fill/Soil Disturbance Permit review request or ES-UI/UMAP to conduct a utility locate before the commencement of activities that meet the following criteria:

- Unconditional exclusions are only for those areas **outside** known PRS boundaries, Treatment, Storage, and/or Disposal (TSD) units, watercourses, and/or any other environmental concerns, as verified by OSH-ISH, using the Unconditional Exclusion Pre-assessment Tool on the [OSH-ISH Excavation/Fill/Soil Disturbance Permit Review Request website](#).

**Note:** For a complete list of approved unconditional exclusions, reference the [Excavation/Fill/Soil Disturbance Tier-3 document](#), Section 7.2.

**Note:** In areas where the proposed exclusion activities are **within** a known PRS site, TSD unit, watercourse, or other environmental concern, a Routine Excavation/Fill/Soil Disturbance Permit Review must be requested, and the appropriate excavation/fill/soil disturbance process followed.

## 3.5 Permit Expiration

Any Routine or Conditional Exclusion Excavation/Fill/Soil Disturbance Permit expires six months from the OSH-ISH review completion date. It is the Excavation Permit Requester's/PIC's responsibility to maintain the expiration date of the excavation permit. If the work has not been completed within the six months the Excavation Permit Requester may request an extension from OSH-ISH before the expiration date of the original request. If the scope, location, or depth have not changed, and no new work will be performed, then OSH-ISH may grant a one-time, six-month extension.

**Note 1:** An emergency excavation permit is only valid for the two weeks following the OSH-ISH review date. No extension may be granted for an emergency excavation permit except in unique circumstances where soil cannot be returned to the excavation within the two week period. A one-time 30-day extension may be granted by contacting OSH-ISH at (665-SOIL).

**Note 2:** Only one six-month extension may be granted for any excavation permit other than an emergency excavation permit. No excavation permit will be valid for longer than one year.

**Note 3:** The request for an extension must come before the original expiration date. Otherwise, a new excavation permit review request is required.

### 3.6 Scope of Activity/Location

The Excavation Permit Requester must complete the fields in the [OSH-ISH Excavation/Fill/Soil Disturbance Permit Review Request website](#), clearly describing in detail all proposed activities to take place within the defined boundary. The Excavation Permit Requester must provide a detailed map, using the website's mapping system, that indicates the excavation/fill/soil disturbance boundary.

This electronically created map will be the only map referenced during the excavation review unless otherwise allowed by OSH-ISH. The location description must indicate the exact location, noting the nearest structure or landmark for a point of reference, and the maximum depth of excavation.

**Note:** The excavation/fill/soil disturbance map must be generated using the on-line mapping system supplied by the [OSH-ISH Excavation/Fill/Soil Disturbance Permit Review Request website](#) unless otherwise approved by OSH-ISH. Maps that incorrectly define the excavation boundaries will be disapproved by OSH-ISH and must be resubmitted for review.

**Guidance:** If the mapping program does not function properly for any reason, or to change the excavation boundary map after it has been submitted but not approved, e-mail [excavation@lanl.gov](mailto:excavation@lanl.gov) or call the help line at 665-7645 to request a one-time password for map correction. Review due date will be reset from the day the map change was submitted to allow required SMEs time to provide an additional review of the proposed change.

### 3.7 Changes in Scope of Activity/Location

A new [Excavation/Fill/Soil Disturbance Permit Request](#) must be submitted if any of the following original approved data have changed during the performance of the work:

- scope of the excavation/fill/soil disturbance activity,
- length, width, or
- location.

**Note:** If the review request has not yet been approved, a scope change may be requested by calling the Soil Disturbance Review Team helpline at 665-7645, and the review due date will be reset from the day the scope change was requested to allow required SMEs time to provide an additional review of the proposed change.

### 3.8 Revalidation

The Excavation/Fill/Soil Disturbance Permit must be revalidated (call 665-1051) before excavation may proceed if any of the following conditions occur:

- the utility field marking is no longer in place or is obliterated;
- the PIC has changed;
- a depth increase is requested, but the scope has not changed;

- 30 days have elapsed from the date the utility locate markings were made;
- ten working days have elapsed from the date of New Mexico One Call (NMOC) locates (if NMOC locates are required for area being excavated). ES-UI/UMAP will be contacted eight days before the “markings good until” date to call on the locates. No sketch is issued by ES-UI/UMAP or NMOC. ES-UI/UMAP provides an e-mail with the NMOC confirmation number to the Excavation Permit Requester; and
- if an underground utility is unexpectedly found during an excavation or an underground structure is found to have been marked in the wrong location, stop work at once until the site can be reexamined by ES-UI/UMAP (665-1051).

**Note:** For an increase in approved depth, the PIC must contact OSH-ISH at 665-7645, who will coordinate with ES-UI/UMAP to determine if depth increase can be approved. If so, an e-mail will be sent to the PIC and a copy of the e-mail will be kept with both the PIC and ES-UI/UMAP copies of excavation permit.

**Note:** The PIC must contact ES-UI/UMAP for verification, refreshing of utility markings, and revalidation of the permit. The PIC will be responsible for the maintenance and inspection of the locate marks within the 30-day period and must contact the ES-UI/UMAP in order to refresh the utility markings as deemed necessary.

### 3.9 Revalidation Exemptions

**Note:** Revalidation and Revalidation Exemptions refer only to Utility Locate Activities, which are coordinated by ES-UI/UMAP.

**Note:** For a complete listing of approved revalidation exemptions reference the [Excavation/Fill/Soil Disturbance Tier-3 document](#).

## 4.0 RESPONSIBILITIES

Responsibilities under this document are functional responsibilities and do not represent job titles. They include the following:

### 4.1 Facility Operations Director (FOD)/Designee

- Ensures that workers involved in the excavation/fill/soil disturbance work meet the requirements of this document.
- Uses all means available to help verify the location of the existing secondary utilities within the excavation area, including record drawings, as-built maps, historical construction plans, and files.

### 4.2 Person-In-Charge (PIC), Alternate Person In Charge (PIC) and/or Subcontract Technical Representative (STR) (Subcontractors must comply with the conditions of their contract)

- Successfully complete the Excavation/Fill/Soil Disturbance Training using [Course #31419, Excavation/Soil Disturbance Self-Study](#). This course requires an annual refresher.
- Ensure that all personnel physically participating in excavation activities have also successfully completed the excavation training and the expiration date has not lapsed.
- Conduct the pre-job briefing to include the Excavation/Fill/Soil Disturbance Permit process, along with all SME-identified requirements and concerns, with affected personnel.
- Address all SME comments identified on the Excavation/Fill/Soil Disturbance Permit, SME comments in the Integrated Work Document (IWD), and pre-job briefing, according to the procedure listed in [P300, Integrated Work Management](#).

- Ensure that all SME stipulations identified in the issued Excavation/Fill/Soil Disturbance Permit and those specified herein are met.
- Ensure that all OSHA stipulations of [29 CFR 1926](#), *Safety and Health Regulations for Construction*, Subpart P, *Excavations*, and [29 CFR 1910](#), *Occupational Safety and Health Standards, General Industry*, are met.
- When the PIC changes, ensures that necessary information is transferred effectively to the incoming PIC and that all workers are informed.
- Must sign the Excavation/Fill/Soil Disturbance Permit Request as the signatory to whom the permit is issued, and retain a copy of the request and comments, as well as an original map, with utility locates marked by ES-UI/UMAP.

**Note:** The excavation permit package cover sheet containing valid signatures from the designated PIC, ES-UI/UMAP, and OSH-ISH as well as SME comments, maps, and utility locates must be readily accessible while project activities are in progress.

- If utilities are found within the excavation area boundary, the closest utility shutoff point(s) must be identified and located before excavation, according to [LANL Master Specification, Section 31-2000](#), *Earth Moving*, Section 1.2.D, and potholing must be performed.

**Note:** Vacuum truck potholing within known Potential Release Sites (PRSs) may be allowed on a case by case basis, and must be evaluated through the Excavation Permitting Review Process.

When utility locates have been performed, and the upper portion of the permit is completed by ES-UI/UMAP, the PIC is required to meet with OSH-ISH for verification, review, approval, and issuance of the permit.

**Note:** **ONLY** the PIC or designated Alternate PIC may sign for the Excavation/Fill/Soil Disturbance Permit. OSH-ISH will review and approve the permit **ONLY** with one of those two, unless otherwise allowed.

- Notify the OSH-ISH Construction Safety Inspector of all "dig-ins."
- Mark and maintain the excavation area boundary with paint, tape, flagging, or equivalent with white spray paint. Ensure that all utility markings, PRS boundary markings, and archaeological site markings are maintained. Also ensure that barricades and postings for trenches and excavated sites are erected and maintained, and notify the PIC if revalidation and relocates are required, as a result of any discrepancies.
- Control the management of fill material and/or soil from the extraction process in accordance with the Precautions and Limitations of this document.
- Contact ES-UI/UMAP at least 48 hours before backfilling the excavation. Do not cover new or exposed existing utilities until ES-UI/UMAP has verified that utility locations have been documented in compliance with the Laboratory standard reference system.
- Provide as-built maps of primary and secondary utilities for all new construction projects to ES-UI/UMAP.
- Ensure that appropriate utility-specific PPE is worn for each hand-excavated utility.

#### 4.2.1 Stop Work

- Work activities should be stopped immediately on a specific excavation activity in the event that unidentified or unexpected utilities, material, contamination, or equipment are located during excavation. Contact the designated STR, OSH-ISH at 665-SOIL, and ES-UI/UMAP.
- If archaeological deposits or human remains are encountered, stop work and immediately contact Environmental Stewardship Services (ENV-ES) Cultural Resources Team at 665-8855.
- Notify the Acquisition Services Management (ASM) Contract Administrator of any work stoppage.

#### 4.2.2 Restart

- The restart of activities will depend on the identification of the findings, determination of required protection, and the concurrence or authorization by the ASM contract administrator.

#### 4.3 Excavation Permit Requester

- Successfully completes the Excavation/Fill/Soil Disturbance training using [Course #31419, Excavation/Soil Disturbance Self-Study](#), on an annual basis.

Requests an Excavation/Fill/Soil Disturbance Permit using the [IHS-CS Excavation/Fill/Soil Disturbance Permit Review Request website](#).

**Note:** All sections must be completed and an excavation area map provided, or the request will not be processed.

**Guidance:** The Excavation Permit Requester may also be the PIC or Alternate PIC. Subcontractors must comply with the conditions of their contract.

#### 4.4 Work Execution Superintendent

**Note:** This role is specific to the [SD350, Project Management for Capital Asset Acquisition and Construction](#) sections on Construction Management. See the [Excavation/Fill/Soil Disturbance Tier-3 document](#).

#### 4.5 Engineering Services-Utilities and Infrastructure/Utilities Mapping and Locating Team (ES-UI/UMAP)

- Schedules/coordinates utility locates with all affected utility locating organizations when requested.
- Performs secondary utility research with all available data, as appropriate.
- Prints the Excavation/Fill/Soil Disturbance Permit and the approved review request from the [OSH-ISH Excavation/Fill/Soil Disturbance Permit Request Index](#), including all SME comments.
- Performs utility locates as requested, providing a sketch of all utility locates and markings within the boundary, and completing the utility portion of the Excavation/Fill/Soil Disturbance Permit.
- Issues completed permit, including review request and map, all SME comments, and the AutoCAD utility sketch to the OSH-ISH Excavation/Fill/Soil Disturbance Team for issuance.
- Keeps one copy of the permit coversheet and documentation for ES-UI/UMAP files.

- If the PIC/Excavation Permit Requester requests revalidation of the Excavation/Fill/Soil Disturbance Permit, schedules/coordinates revalidation with all affected locating organizations.
- Inspects the open excavation and verifies that primary and secondary utilities have been appropriately documented in compliance with the standard reference system, including elevation. Documents any discrepancies in existing known utilities, then signs and dates inspection to acknowledge approval.
- If the Excavation Permit Requester/PIC requests a revalidation for the purpose of depth increase, coordinates with OSH-ISH and ensures contact is made with Environmental Remediation (ER) Program for possible PRS impact, and Radiation Protection Programs (RP-PROG)-Radioactive Liquid Waste (RLW) for any RLW lines that may be affected by a depth increase. Includes any comments provided by either organization.

**Note:** Additional roles and responsibilities for SMEs and external entities can be found in the [Excavation/Fill/Soil Disturbance Tier-3 document](#).

To reference additional responsibilities, see the following Tier-3 hyperlinks:

- [Locating and Marking Underground Utilities](#)
- [LANL Master Specification, Section 31-2000, Earth Moving](#)

## 5.0 IMPLEMENTATION

The requirements in this document are effective on the issue date.

## 6.0 TRAINING

### 6.1 Required Training

The Excavation Permit Requester, designated PIC, Alternate PIC, and STR must successfully complete [Course #31419, Excavation/Fill/Soil Disturbance Self-Study](#), before submitting a request for review.

- Any other personnel physically involved in excavation/fill/soil disturbance activities on Laboratory-designated property must have successfully completed [Course #31419](#) before the commencement of excavation/fill/soil disturbance activities.

**Note:** Refresher training is required on an annual basis.

### 6.2 Training Validation

- OSH-ISH will enter the successful employee's name/Z number into the Excavation Training Database. Information is obtained daily from [UTrain](#).
- OSH-ISH will verify training completion at the time of permit issuance.
- OSH-ISH will conduct field verifications.
- Employee signs the validation section in the IWD, Part 3.

## 7.0 EXCEPTION OR VARIANCE

To obtain an exception or variance to this document, see the following instructions:

- Managers may request an exception or variance from the IA through the RM.

- At the IA's request, the RM will provide a recommendation or supporting information.
- The IA or designee will provide the requester with a written response and copy the RM.

The requesting organization must maintain an official copy of record of the approved correspondence granting the exception or variance.

## **8.0 DOCUMENTS AND RECORDS**

### **8.1 Documents**

The Excavation/Fill/Soil Disturbance Permit review documentation will include:

- A map clearly indicating the proposed area of excavation/fill/soil disturbance, using the online Geographic Information System (GIS) mapping system provided.
- A well-defined description of the proposed excavation/fill/soil disturbance activity, including
  - the structure number;
  - the location in relation to other buildings/structures;
  - the priority, and reason for priority, if other than routine;
  - the special access requirements;
  - the work procedures; and
  - the field contact numbers.
- One (or as many as the Excavation Permit Requester/Originator can supply) identification number (in order of preference) of the following:
  - Computerized Maintenance Management System (CMMS) Work Order Number (mandatory);
  - Project Identification Number;
  - PRID or contract number; and
  - Other related Excavation/Fill/Soil Disturbance Permit(s).

### **8.2 Records**

OSH-ISH maintains a copy of all Excavation/Fill/Soil Disturbance Permit reviews, which includes the following:

- a copy of the submitted Excavation/Fill/Soil Disturbance Permit request;
- a location map of the proposed activity;
- documentation of all SME comments and concerns;
- original copy of the completed/approved Excavation/Fill/Soil Disturbance Permit; and
- customer satisfaction survey.

Records are maintained at OSH-ISH for a period of three years.

ES-UI/UMAP maintains a copy of each located excavation permit package, which includes the following:

- signed permit coversheet,

- autoCAD sketches,
- permit boundary map,
- excavation permit request,
- excavation reviewer comments,
- secondary research drawings, and
- all permit revalidation sketches.

## 9.0 DEFINITIONS AND ACRONYMS

### 9.1 Definitions

See LANL [Definition of Terms](#).

**Clean Fill**—Broken concrete, brick, rock, stone, glass, reclaimed asphalt pavement, or uncontaminated soil generated from construction and demolition activities. Reinforcement materials that are an integral part, such as rebar, are included. Clean fill must be free of other solid waste or hazardous waste, and demonstrated to be free of contamination.

**Conditional Exclusion**—An expedited review conducted within two business days from the date the request for the exclusion is submitted, that meets specific criteria referenced in the [Excavation/Fill/Soil Disturbance Tier-3 document](#), Section 7.2.

**Cultural Resources**—Archaeological sites, deposits, historical buildings, and structures.

**Detailed Map**—A map created on the [OSH-ISH Excavation/Fill/Soil Disturbance Permit Review Request website](#) mapping system, identifying the location (length/width) of the proposed excavation activity. The map must show the nearest identifying landmark/structure.

**Emergency Excavation/Fill/Soil Disturbance Request**—A priority excavation/fill/soil disturbance permit request that must be started as quickly as possible, in order to being repair on a major failure or break in a utility system or to avoid life threatening, environmental release, or property damage situations.

**Excavation**—Any soil penetration, disturbance, or ground breaking, including penetrations through slabs (where the soil will be disturbed), using powered equipment or hand tools within Laboratory-owned property.

**Excavation Permit Requester**—Any individual who has successfully completed [Course #31419, Excavation/Soil Disturbance Self-Study](#), and who has the technical knowledge and detailed understanding of work to be performed in order to meet all applicable requirements of the excavation activities. Subcontractors must comply with the conditions of their contract.

**Excavation Review SME**—The main point of contact assigned the responsibility for the coordination, dissemination, review and final issuance authority of the permit review process.

**Facility Operations Director (FOD)**—The Responsible Associate Director's principle agent for operations, responsible for executing non-programmatic work and accountable for the safety of all work activities within his/her designated facilities.

**Fill**—The placement of any dirt or other material (e.g., base course, asphalt, or concrete) on top of an existing grade.

**Person In Charge (PIC)**—The individual with responsibility, authority, and accountability for coordination and execution of the work activity.

**Potential Release Site (PRS)**—Any discernible unit defined by LANL at which solid waste has been placed at any time, and from which there may be a risk of release of hazardous waste or hazardous waste constituents, whether or not the unit was intended for management of solid or hazardous waste. Such units include any area at which solid wastes have been routinely and systematically released; they do not include one-time spills.

**Potholing**—The practice of digging a test hole to expose underground utilities to ascertain the horizontal and vertical location of the utility. Potholes must be executed with handheld excavation tools (no pneumatic or electric powered tools) or vacuum potholing trucks.

**Primary Utilities**—Water, natural gas, sanitary sewage, primary electric (electrical lines 600 volts and above), steam, and condensate lines.

**Project Coordinator**—Person responsible for scheduling, coordinating, and/or direct oversight of a project involving excavation.

**Revalidation**—Re-verification of the utility locates for a project area.

**Routine Excavation/Fill/Soil Disturbance Request**—An excavation fill/soil/disturbance permit review request priority that can be completed and reviewed under normal working conditions and does not meet the emergency or conditional exclusion excavation/fill/soil disturbance criteria.

**Secondary Utilities**—Any utility systems that are not classified as “primary,” including secondary electric (less than 600 volts), cooling water, industrial water, storm drain, security lighting, street lighting, control wiring, compressed air, fire alarm, and security lines.

**Spotter**—A person who looks for, locates, and reports any possible problem during the excavation process. A spotter observes the excavation process and communicates to the backhoe operator when a buried utility is sighted to prevent injury to personnel or the utility.

**Subcontract Technical Representative (STR)**—The individual with responsibility for the successful performance, oversight, and execution of subcontract work activity.

**Unconditional Exclusion**—An exclusion that does not require ES-UI/UMAP to conduct utility locates or OSH-ISH to issue an Excavation/Fill/Soil Disturbance Permit. Unconditional exclusions are only for those areas outside known PRS boundaries, TSD units, watercourses, and/or any other environmental impacts, as verified by OSH-ISH.

**Utility**—Any active pipe, conduit, wire, etc., that can supply a utility service or any related structure (e.g., electrical vault, manhole, valve). Any inactive or abandoned-in-place utility and related structure.

**Utility Review Coordinator**—ES-UI/UMAP Utility Location Section Lead, who is assigned the responsibility for verifying permit cost codes through CMMS and the coordination and direct management of the utility research, utility locating, and all excavation permit documentation.

## 9.2 Acronyms

See LANL [Acronym Master List](#).

|            |   |
|------------|---|
| ADESH      | Associate Director for Environment, Safety, and Health                                |
| AOC        | Area of Concern   |
| ASM        | Acquisition Services Management   |
| CFR        | Code of Federal Regulations   |
| CMMS       | Computerized Maintenance Management System  |
| ENV-ES     | Environmental Stewardship Services  |
| ER         | Environmental Remediation   |
| ES-UI/UMAP | Engineering Services-Utilities and Infrastructure/Utilities Mapping and Locating Team |
| FOD        | Facility Operations Director  |
| GIS        | Geographic Information System   |
| IA         | Issuing Authority   |
| IWD        | Integrated Work Document  |
| LANL       | Los Alamos National Laboratory  |
| NMOC       | New Mexico One Call   |
| OSH        | Occupational Safety and Health  |
| OSHA       | Occupational Safety and Health Administration   |
| OSH-ISH    | Occupational Safety and Health-Industrial Safety and Hygiene                          |
| PIC        | Person in Charge  |
| PPE        | Personal Protective Equipment   |
| PRID       | Permits and Requirements Identification   |
| PRS        | Potential Release Site  |
| RLW        | Radioactive Liquid Waste  |
| RM         | Responsible Manager   |
| RO         | Responsible Office  |
| RP-PROG    | Radiation Protection Programs   |
| SEO-EM     | Security and Emergency Operations-Emergency Management                                |
| SME        | Subject Matter Expert   |
| STR        | Subcontract Technical Representative  |
| SWMU       | Solid Waste Management Unit   |
| TA         | Technical Area  |
| TSD        | Treatment, Storage, and/or Disposal   |
| USI        | Unreviewed Safety Issue   |
| USQ        | Unreviewed Safety Question  |

## 10.0 HISTORY

| Revision History |                 |   |
|------------------|-----------------|---|
| 08/20/08         | P101-17, Rev. 0 | Initial Issue. This document cancels and replaces Implementation Support Document (ISD) 101-17 <i>Excavation/Fill/Soil Disturbance Permit Process</i> . |

| Revision History |                 |   |
|------------------|-----------------|---|
| 10/03/11         | P101-17, Rev. 1 | <p>Performed three-year review in accordance with <a href="#">PD311</a>, <i>Requirements System and Hierarchy</i>.</p> <p>Removed requirement for Facility Operations Director (FOD) signature on excavation permits.</p> <p>Reduced Subject Matter Expert (SME) review turnaround time for a routine excavation permit (from 10 working days to 7 working days).</p> <p>Added one-time, 30-day extension on emergency permits, granted by Industrial Hygiene and Safety-Central Services (IHS-CS) on a case-by-case basis, as long as the scope, depth, or locations remain unchanged.</p> <p>Updated links, titles, and acronyms.</p> <p>This Quick Change does not require an Unreviewed Safety Question/Unreviewed Safety Issue (USQ/USI) review.</p> |
| 04/06/15         | P101-17, Rev. 2 | <p>Performed three-year review in accordance with <a href="#">PD311</a>, <i>Requirements System and Hierarchy</i>.</p> <p>Sections 3.1 and 4.2: Updated language in <i>Note</i> "Vacuum truck potholing within known Potential Release Sites (PRs) may be allowed on a case by case basis, and must be evaluated through the Excavation Permitting Review Process."</p> <p>Updated links, titles, and acronyms.</p>   |
| 04/15/15         | P101-17, Rev. 2 | <p>Administrative Change:</p> <p>Updated Waste and Environmental Services (WES) to Environmental Remediation (ER) and deleted reference to the WES flowchart.</p>   |

## 11.0 REFERENCES

### [Prime Contract:](#)

- [29 CFR 1910](#), *Occupational Safety and Health Standards, General Industry*

## 11.1 Other References

- [Excavation/Fill/Soil Disturbance Tier-3 document](#)
- [10 CFR 851](#), *Worker Safety and Health Program*
- [LANL Master Specification, Section 31-2000](#), *Earth Moving*
- [29 CFR 1926](#), *Safety and Health Regulations for Construction*, Subpart P, *Excavations*
- [OSH-ISH Excavation/Fill/Soil Disturbance Permit Review Request website](#)
- [AP 50-12-001](#), *Ground Penetrating Radar*
- [P101-22](#), *Penetration Operations*
- [29 CFR 1910.120](#), *Hazardous Waste Operations and Emergency Response*
- [29 CFR 1926.65](#), *Hazardous Waste Operations and Emergency Response*
- [P300](#), *Integrated Work Management*

- [SD350](#), *Project Management for Capital Asset Acquisition and Construction*
- [IHS-CS Excavation/Fill/Soil Disturbance Permit Request Index](#)
- [Locating and Marking Underground Utilities](#)
- [P313](#), *Roles, Responsibilities, Authorities, and Accountability*
- [PD311](#), *Requirements System and Hierarchy*

## 12.0 FORMS

There are no forms associated with this document.

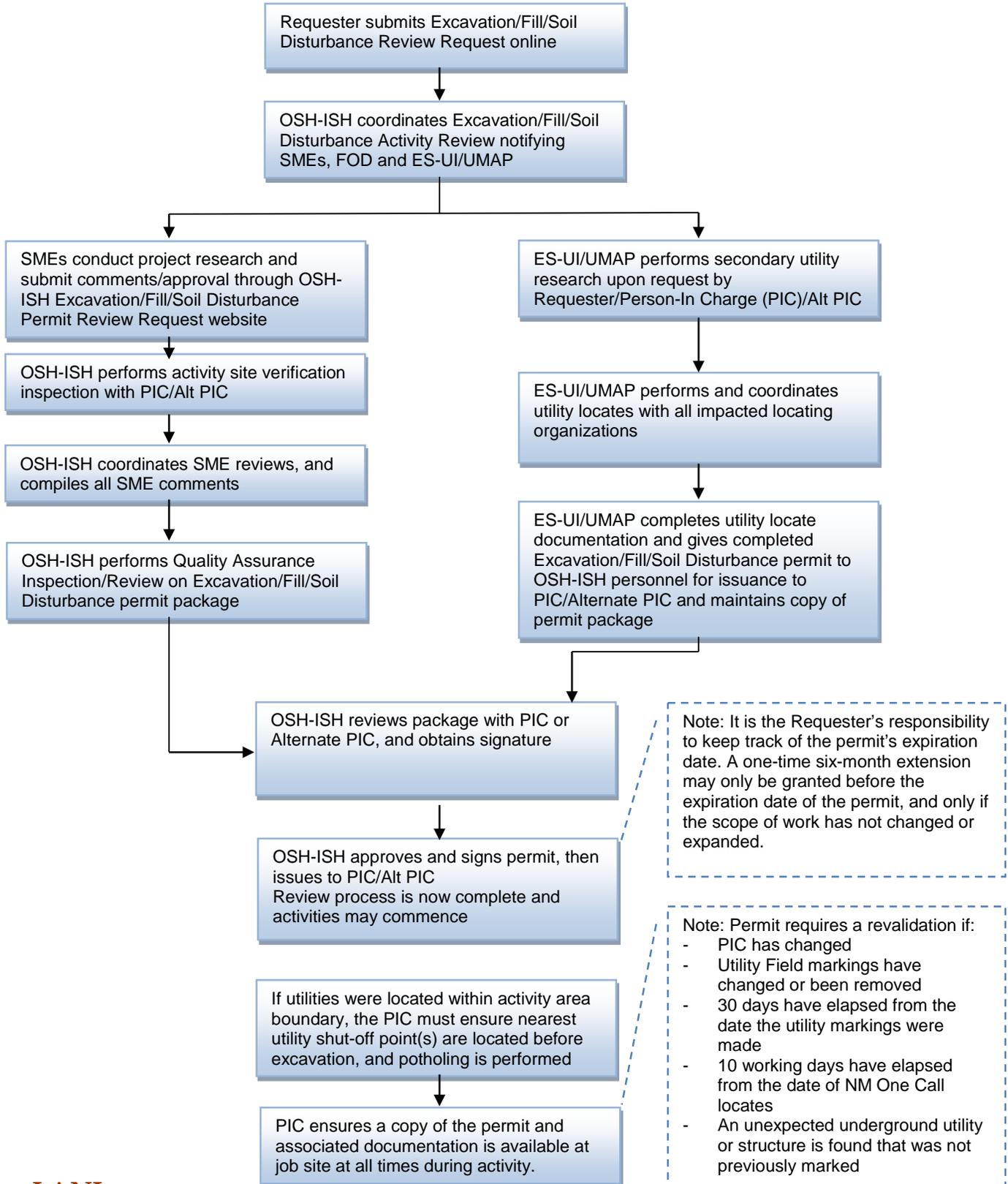
## 13.0 ATTACHMENTS

Attachment A. *Excavation/Fill/Soil Disturbance Permit Process*

## 14.0 CONTACT

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**No: P101-17 Excavation/Fill/Soil Disturbance**  
**Attachment A. Excavation/Fill/Soil Disturbance Permit Process (Page 1 of 1)**



## IMPORTANT

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