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**IMPLEMENTATION OF DOE-0344,
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1.0 PURPOSE AND SCOPE
(5.1.1)

This Standard describes the Tank Operations Contractor (TOC) organizational roles and responsibilities for implementing DOE-0344, Hanford Site Excavating, Trenching and Shoring. DOE-0344 provides the requirements for all Hanford Site excavation, trenching and shoring activities. In addition, this Standard provides specific methods for implementing portions of DOE-0344. As such, this standard supplements but does not replace or supersede DOE-0344.

2.0 IMPLEMENTATION

This standard is effective on the date shown in the header.

3.0 STANDARD**3.1 Roles and Responsibilities**

This section provides an overview of roles and responsibilities in the implementation of DOE-0344. Prior to conducting excavation activities, all requirements applicable to the scope of work as described in DOE-0344 shall be reviewed to ensure that appropriate requirements are implemented.

3.1.1 Work Control Program Manager

The Work Control Program Manager is responsible for the following:

- Appoints a WRPS Company Excavation Coordinator to assist excavation permit originators with the permit process and ensure excavation permit consistency.
- Ensures that cultural/ecological resources and associated values are protected during the permitting of excavations.

3.1.2 Company Excavation Coordinator

The Excavation Coordinator is the person assigned by the Work Control Program Manger to oversee WRPS excavation activities.

The Company Excavation Coordinator performs the following duties:

- Works with the permit originator to find the appropriate information and contacts to assemble the excavation permit and provide information related to the permit process
- Ensures that the appropriate site, building, or waste site owners of known or suspected underground interferences (structures and utilities) are properly identified and contacted. Verifies ownership with appropriate site utilities or manager of nearby facilities. Individual signature blocks may be marked not applicable if approved by the responsible signatory.

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- Ensures inclusion of Waste Information Data System (WIDS) or other relevant and current data sources, and permit reviewers' special instructions
- Returns assembled draft permit to Permit Originator for final comments and signatures (usually WRPS Engineering, Facility Owner and Responsible Manager)
- Ensures the excavation permit procedure has been followed and the permit is complete
- Enters the "Latest Start Date," i.e., no more than 90 calendar days from the date of the last signature, in the upper right corner of the Hanford Site Excavation Permit (A-7400-373)
- Supplies copies (preferably electronic) of issued excavation permits to the Hanford Site Coordinator periodically.

3.1.3 Permit Originator/Planner

The permit originator/planner is the person initiating and/or incorporating the Excavation Permit into work planning documents. The Permit Originator/Planner performs the following duties:

- Contacts the Company Excavation Coordinator to determine if an excavation permit is required and what information is needed to initiate and eventually complete the excavation permit.
- Ensures a pre-scan planning meeting is held with the Excavation Engineer and geophysical evaluator/scanning organization to discuss scan parameters such as excavation/scan boundaries, scan grid intervals, known underground systems, structures and components (SSCs), scanning equipment limitations, etc.
- Ensures that after the permit is initiated, the remaining information needed to complete the permit is supplied promptly:
 - Known facilities, services, utilities, groundwater wells and WIDS sites in the near proximity of the excavation; accurate drawings; and/or maps
 - NEPA determination has been completed, including any required ecological and/or cultural resources reviews
 - Environmental Representative is consulted to evaluate Environmental impacts
 - Proofreading of the draft permit for review
 - Geophysical investigation with engineering review.

NOTE: The performance of a geophysical evaluation/scan may be waived, if a scan is available from a previous job that shows the same excavation area and hazards. This shall only be used when no changes have been made to that scanned area since the scan was

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performed. The Facility Owner and Engineer will provide the justification as outlined in DOE-0344 section 5.2.5.

- Walkdown documentation
- Work package number and changes in dates, boundaries, work description, and/or personnel
- Ensures the composite sketch is maintained up-to-date as it evolves throughout the excavation permitting process, which begins as a sketch or collection of data or drawings showing the location of the excavation area and ending as a sketch showing the location with all nearby interferences (utilities, wells, waste sites, etc.).
- Ensures that a job hazard analysis of the excavation work scope and all associated activities is in development.
- Ensures the excavation permit procedure has been followed and the permit is complete
- Ensures inclusion of Waste Information Data System (WIDS) or other relevant and current data sources, and permit reviewers' special instructions are included in the work document.
- If the "Latest Start Date" is exceeded or there is another period of inactivity exceeding 90 days, then the permit originator (or other person designated by the Responsible Manager) must ensure the permit is reapproved by the Facility Owner, at a minimum.

3.1.4 Permit Reviewers

Individuals identified to review will conduct their review for WRPS per DOE-0344, Section 5.3.4, Actions, steps 10-16. This will include the Excavation Engineer, Environmental, Radiological, Electrical Engineer, Facility Owner, and Responsible Manager.

NOTE: The use of electronic approval is an equivalent methodology of reviewer's signing or signatures designating reviewer concurrence for safe excavation determination.

3.1.5 Radiological Control

Radiological Control is the person assigned to assess radiological concerns for work activities at specific WRPS facilities.

Radiological Control performs the following duties:

- Reviews all proposed WRPS excavations to evaluate the radiological conditions and the need for radiological controls during excavation activities
- Checks WIDS data for nearby sites and note precautions.

3.1.6 Competent Persons for Excavations

A Competent Person is an individual that has completed the Training Completion Record, WRPS Competent Person-Excavation, A-6005-804, in accordance with TFC-ESHQ-S-STD-29.

A Competent Person shall be assigned when an excavation activity is 4 feet or greater in depth. If conditions warrant, Competent Person involvement may be assigned at depths less than 4 feet.

Competent Persons will perform the following duties:

- Complete the Training Completion Record, WRPS Competent Person-Excavation, A-6005-804, in accordance with TFC-ESHQ-S-STD-29.
- Conduct documented inspections of excavations each day of work, prior to entry and after every rainstorm or other hazard increasing occurrence. Maintains inspection log.
- Determine whether the proposed excavation requires a design/approval by a registered professional engineer (i.e., excavation depth is expected to exceed 20 ft.). If applicable, a stamped copy of the excavation design must be approved and a copy must be included in the work record.
- Ensure any mobile crane setbacks comply with Chapter 14, DOE/RL-92-36, "Hanford Site Hoisting and Rigging Manual."
- Determine and direct the installation of protective system methods (benching, sloping, shoring, and shielding) where the excavation depth is planned to exceed 5 feet or if the potential for cave-in otherwise exists at lesser depths.

3.1.7 Registered Professional Engineer

The Registered Professional Engineer is a professional engineer with specific training and expertise in soil and structures interactions related to excavations. WRPS will subcontract this position as required.

The Registered Professional Engineer performs the following duties:

- Provides stamped and sealed design for excavations, when required. The engineer shall determine protective measures to prevent collapse of excavations, i.e., sloping, design of portable trench boxes and shields, or shoring.
- Ensures the stability of adjoining buildings, vehicle crossings of trenches, walls or other structures which may be affected by the excavation.

3.1.8 Facility Owner

For WRPS tank farm facilities the Facility Owner is the applicable Area Team Manager. For non-tank farm facilities the Facility Owner is the assigned Facility manager.

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The Facility Owner performs the following duties:

- Reviews and signs the Hanford Site Excavation Permit for when excavations are performed within or adjacent to an active or deactivated facility or waste site. The person responsible for the facility shall review excavation permit for completeness and ensure safe work is achievable within or adjacent to the facility.
- Performs the review and concurrence for the Hanford Site Excavation Permit in signature block 23, ensuring that the permit has been completed satisfactorily and that safe work is achievable. If the Facility Owner does not represent WRPS, then the WRPS Responsible Manager provides final review and concurrence.
- If the “Last Permitted Start Date” is exceeded or there is any 90-day period with no excavation activity, verifies whether there may have been configuration changes. If the Facility Owner has maintained configuration control and concurs, he/she re-signs and re-dates block 23. If not, the subject matter experts of the affected utilities, and the Facility Owner and Responsible Manager must review the permit again before work resumes.
- Ensures projects that extend beyond 12 months require an annual review of the excavation permit, and revisions as necessary; if at any point, a scope change becomes evident, the permit must be re-reviewed by all reviewers and re-dated, re-assigned, or re-initialed (DOE-0344).
- Ensures that cultural/ecological resources and associated values are protected during excavations.

If a scan is not required or an existing scan is used, the Facility Owner and Engineer will provide the justification as outlined in DOE-0344 section 5.2.5.

3.1.9 Responsible/Project Manager

The Responsible/Project Manager is the person assigned to manage the task or project.

The Responsible Manager performs the following duties:

- Ensures the appropriate subject matter experts have approved the excavation permit.
- Reviews and concurs for the Hanford Site Excavation Permit in signature block 25, after all the other signatures have been obtained. PER DOE-0344, this signature indicates the excavation permit has been properly completed and approved prior to performing any excavation
- Designates the person or people who will be the planning team, permit originator walkdown organizer, and monitor for: (1) the 90-day inactivity limit and (2) time to renew the excavation permit.
- Ensures that a competent person has been assigned to the excavation activity, as applicable.

3.1.10 Excavation Engineer

The WRPS Excavation Engineer fills the role of Design Authority/Technical Representative for WRPS excavations. For tank farm areas (areas within the Tank Farm boundaries), the WRPS Excavation Engineer is identified on the Engineering Subject Matter Experts list located in the Engineering Tool Box website. The Project Engineer or Facility Manager shall assign a WRPS Excavation Engineer for non-tank farm areas (areas outside Tank Farm boundaries).

- Reviews the excavation permit and signs block 10 in the capacity of “Design Authority/Technical Representative.”
- Review scans data for inconsistencies with configuration drawings. The engineer will update configuration documentation with as-found and as-installed excavation information as required.
- Prepare a composite sketch (with line-crossing list referencing facility drawings as applicable) of the intended excavation area, including excavation boundaries, identifying existing buried utilities/systems within a given area. Identify the location and ownership of utilities (e.g., electrical, water, sewer, etc.), WIDS sites, or other underground installations that may be encountered during excavation work. Coordinate sketch with scan/field walkdown for verification of hazards. The crossing list will consist of applicable current drawings, including ECNs, of underground utilities and structures in the excavation area. The line crossing list will cross reference with the composite sketch for feature identification.
- Provide Scanners with a plan of the scan area and line crossing list of utilities/structures likely to be detected during scan activities.
- Ensure the excavation boundary is within the scan area or is scanned on both sides (if possible) if the excavation area cannot be scanned due to obstructions (e.g., metal cover plates, concrete slab, etc.).
- If a scan is not required or an existing scan is used the Facility Owner and Engineer will provide the justification as outlined in DOE-0344 section 5.2.5.
- Ensures complete and most current drawings (including outstanding ECNs) are reviewed for identifying potential jobsite hazards. Drawings obtained for review should include civil plans, conduit and cable run schedules, and/or single line drawings.
- Ensures the composite sketch is maintained up-to-date as it evolves throughout the excavation permitting process, which begins as a sketch or collection of data or drawings showing the location of the excavation area and ending as a sketch showing the location with all nearby interferences (utilities, wells, waste sites, etc.).
- Ensure any drawings, schedules, and/or civil plans attached to the excavation permit or part of the composite sketch are complete (i.e., not cropped) and the most current revision to include pertinent information from outstanding ECNs.

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3.1.11 Electrical Engineer

The Electrical Engineer is the WRPS electrical engineer for the Tank Farm facility or non-tank farm area assigned by WRPS Engineering Management.

The Electrical Engineer performs the following duties:

- Assists the Excavation Engineer in preparation of the Line Crossing List. Reference to power source should be included for electrical systems within the excavation area.
- Reviews scan data and composite sketch to assure identification of electrical systems in area of excavation.
- Ensures complete and most current drawings (including outstanding ECNs) are reviewed for identifying potential jobsite hazards. Drawings obtained for review should include civil plans, conduit and cable run schedules, and/or single line drawings.
- Reviews the excavation permit and signs block 14b in the capacity of Facility Electrical Systems (Secondary).

3.1.12 Engineering Discipline Lead (EDL)

An EDL is a Professional Engineer that is listed as an Engineering Discipline Lead and as an Excavation Engineer.

The EDL performs the following duties:

- Review all excavations greater than 4 feet in depth for proper methods of protective systems (i.e. shoring, sloping, and trench boxes).
- Ensures that selection of protective systems is in accordance with manufacturer's instructions, engineered designs, or in accordance with 29 CFR 1926.652, "Requirements for Protective Systems," and signs block 24 of the excavation permit.

3.1.13 Safety Professional

The Safety Professional is responsible for staying cognizant of excavation activities in assigned areas by providing oversight to ensure compliance with DOE-0344.

3.1.14 Environmental Representative

The Environmental Representative performs the following duties:

- Verifies NEPA determination has been completed and approved in accordance with TFC-ESHQ-ENV_PP-C-07, and ensures all required and relevant field flow down requirements from the NEPA determination and TFC-ESHQ-ENV_PP-C-09 have been appropriately accounted for.
- Reviews permit for environmental impacts and applicable requirements

- Signs Environmental approval per block 11 in the capacity of “Environmental Reviewer.”

3.1.15 Shift Manager

The Shift Manger is the person responsible for coordinating field activities and assuring tasks are within facility controls.

The Shift Manager performs the following duties:

- The Shift Manager releases field work for excavation activities.
- The Shift Manager may direct emergency excavations activities.

3.1.16 Field Work Supervisor

The Field Work Supervisor is the individual directing the excavation activities.

- Ensures utility demarcation lines are clearly visible before excavation activities begin.

3.1.17 Scanning Services

The Scanning Services is the company providing geophysical scan data to WRPS.

The Scanning Services performs the following duties:

- Performs geophysical ground scans as requested by WRPS to locate buried utilities and structures and provide scan/map overlay.
- Provides ground scan data in accordance with the requirements of TFC-ENG-STD-39, Section 3.7.

3.1.18 Equipment Operator

The person(s) performing the physical excavation activity.

3.2 General Information

The following information is to be used by all reviewers and preparers of the excavation permit.

3.2.1 Composite Sketches

Throughout the permitting process, all reviewers and preparers should be referring to, or adding to, the composite sketch for correct locations of the excavation and interferences. The composite sketch is included in the permit and work planning document.

DOE-0344 defines a composite sketch as “a collection of data or drawings that depict the excavation area identified or potential excavation interferences. This may include drawing research, interviews, aerial photographs, and scan data. The composite sketch evolves throughout the excavation permitting process, beginning as a sketch showing the location of the excavation,

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and ending as a sketch showing the location with all nearby interferences (utilities, wells, waste sites, etc.).”

Composite sketches do not have to be a single document; they can be a collection as long as they clearly show the excavation area, as well as any other potential or identified excavation interferences. The composite sketch also needs to identify which applicable civil/plan drawings were used to create the composite sketch.

This composite sketch should use the most current verified configuration drawings. Engineers, planners and others should not rely on excerpts of drawings contained in other support documents that are not designed for excavation hazard identification.

3.3 Procedure

The following are clarifications and a crosswalk of position title differences between the DOE procedure and WRPS organization structure; it is intended to aid in ensuring that no confusion exists regarding who within WRPS is responsible for various excavation related activities.

Activity/Step	DOE-0344 Actionee	WRPS Actionee
5.1.1	Responsible Person	Shift Manager
5.1.2	Responsible Person	Shift Manager
5.1.3	Facility/System Owner	Shift Manager
5.1.4	Responsible Person	Shift Manager
5.1.5	Responsible Person	Shift Manager
5.1.6	Responsible Person	Shift Manager
5.1.7	Responsible Person	Shift Manager
5.1.8	Facility/System Owner	Shift Manager
5.1.9	Responsible Person	Field Work Supervisor
5.1.10	Facility/System Owner	Engineer
5.2.1	Responsible Person	Planner
5.2.2	Responsible Person	Planner
5.2.3	Responsible Person	Planner
5.2.4	Responsible Person	Planner
5.2.5	Responsible Person	Planner
5.2.6	Scanning Services	Scanning Services
5.3.2	Facility/System Owner, or Technical Representative	Facility Owner/Area Team Manager
5.3.3.1	Excavation Coordinator	Excavation Coordinator
5.3.3.2	Excavation Coordinator	Excavation Coordinator
5.3.3.3	Excavation Coordinator	Excavation Coordinator
5.3.3.4	Permit Originator/Responsible Person	Planner/Company Excavation Coordinator
5.3.3.5	Permit Originator/Responsible Person	Excavation Engineer

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Activity/Step	DOE-0344 Actionee	WRPS Actionee
5.3.4.1	Responsible Person	Planner
5.3.4.2	Responsible Person	Excavation Engineer
5.3.4.3	Responsible Person	Planner
5.3.4.4	Responsible Person	Excavation Engineer and Planner
5.3.4.5	Responsible Person	Planner
5.3.4.6	Responsible Person	Excavation Coordinator
5.3.4.7	Responsible Person	Planner
5.3.4.8	Responsible Person	Planner
5.3.4.9	Responsible Person	Excavation Coordinator
5.3.4.10	Permit Reviewers	Excavation Engineer
5.3.4.11	Permit Reviewers	Excavation Engineer/ Planner
5.3.4.12	Permit Reviewers	Excavation Engineer/ Electrical Engineer
5.3.4.13	Permit Reviewers	Permit Reviewers
5.3.4.14	Permit Reviewers	Permit Reviewers
5.3.4.15	Permit Reviewers	Excavation Engineer
5.3.4.16	Permit Reviewers	Excavation Engineer
5.3.4.17	Permit Originator/Responsible Person	Planner/Excavation Coordinator
5.3.4.18	Permit Originator/Responsible Person	Facility Owner/Project Manager
5.3.4.19	Facility/System Owner or Responsible Person	Facility Owner
5.3.4.20	Responsible Manager	Responsible/Project Manager
5.3.4.21	Responsible Person	Excavation Coordinator
5.3.4.22	Responsible Person	Excavation Coordinator
5.4.1.1	Responsible Person	Field Work Supervisor
5.4.1.2	Responsible Person	Field Work Supervisor
5.4.1.3	Responsible Person	Field Work Supervisor
5.4.1.4	Responsible Person	Field Work Supervisor
5.4.1.5	Responsible Person	Field Work Supervisor
5.4.2.1-4	Facility Owner or Responsible Manager	Shift Manager
5.4.3.1-3	Responsible Person	Field Work Supervisor
5.4.3.4	Responsible Person	Responsible/Project Manager
5.4.3.5	Competent Person	Competent Person
5.4.3.8	Competent Person	Competent Person/EDL

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Activity/Step	DOE-0344 Actionee	WRPS Actionee
5.4.3.9-10	Responsible Person	Field Work Supervisor/ Planner
5.4.3.11-20	Responsible Person	Field Work Supervisor
5.4.3.21	Equipment Operator	Equipment Operator
5.4.4.1-5	Technical Representative	Field Work Supervisor/Engineer
5.4.4.6	Permit Reviewers or Facility/System Owner	Excavation Engineer
5.4.4.7	Excavation Coordinator	Planner

NOTE: The use of electronic approval is an equivalent methodology of reviewer's signing or signatures designating reviewer concurrence for safe excavation determination.

3.4 Records

The following records will be generated during the performance of this standard: (in conjunction with DOE-0344) and are maintained within the Work Package:

- Hanford Site Excavation Permit (A-7400-373) and attachments
- Daily Excavation/Trenches Safety Inspection Log (A-6001-937).

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.

4.0 DEFINITIONS

Terminology used in this procedure is defined in DOE-0344, Appendix B.

5.0 SOURCES**5.1 Requirements**

1. RPP-13033, "Tank Farms Documented Safety Analysis."

5.2 References

1. DOE-0344, "Hanford Site Excavating, Trenching and Shoring Procedure," current revision, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
2. TFC-ENG-STD-39, "Civil Survey For Tank Farm Facilities."
3. TFC-BSM-IRM_DC-C-02, "Records Management."
4. TFC-ESHQ-ENV_PP-C-07, "NEPA, SEPA, Ecological, and Cultural Reviews."
5. TFC-ESHQ-ENV_PP-C-09, "Ecological, Cultural, and Biological Controls."

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6. TFC-ESHQ-S-STD-29, "Qualified/Competent Persons."
7. TFC-OPS-MAINT-C-01, "Tank Operations Contractor Work Control."
8. TFC-OPS-MAINT-C-02, "Pre-Job Briefings and Post-Job Reviews."
9. TFC-PLN-100, "Tank Operations Contractor Requirements Basis Document."
10. Training Completion Record, WRPS Competent Person-Excavation, A-6005-804.