



Designation: E1990 – 22

Standard Guide for Performing Evaluations of Underground Storage Tank Systems for Operational Conformance with 40 CFR, Part 280 Regulations¹

This standard is issued under the fixed designation E1990; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers information for evaluating tank systems for operational conformance with the Federal technical standards (including the financial responsibility requirements) for underground storage tanks (USTs) found at 40 Code of Federal Register (CFR) Part 280.

1.2 This guide does not address the corrective action requirements of 40 CFR Part 280.

1.3 To the extent that a tank system is excluded or deferred from the federal regulations under Subpart A of 40 CFR Part 280, it is not covered by this guide.

1.4 Local regulations may be more stringent than federal regulation and the reader should refer to the implementing agency to determine compliance.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 Federal Standards:²

Title 40 Code of Federal Regulations (CFR), Environmental Protection Agency, Part 280, Technical Standards and Corrective Action Requirements for Owners and Opera-

tors of Underground Storage Tanks (UST)

Title 40 Code of Federal Regulations (CFR), Environmental Protection Agency, Part 302, Designation, Reportable Quantities, and Notification

2.2 United States Environmental Protection Agency (US EPA) Standards:³

510-B-00-003 Financial Responsibility for Underground Storage Tanks: A Reference Manual (EPA). January 2000.

510-K-15-001 Musts for USTs: A Summary of the Federal Regulations for Underground Storage Tank Systems. November 2015.

510-K-20-001 UST System Compatibility with Biofuels. July 2020.

510-K-20-002 Release Detection for Underground Storage Tanks and Piping: Straight Talk on Tanks. August 2020.

510-K-18-001 Dollars and Sense: Financial Responsibility Requirements for Underground Storage Tanks. July 2018.

510-B-19-002 through 510-B19-006 Standard Test Procedures for Evaluating Various Leak Detection Methods. May 2019.

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *airport hydrant system, n*—an UST system which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants (fill stands).

3.1.1.1 *Discussion*—The airport hydrant system begins where fuel enters one or more tanks from an external source such as a pipeline, barge, rail car, or other motor fuel carrier.

3.1.2 *corrosion protection, v*—to prevent the degradation of a material due to a reaction between the material and its environment.

3.1.3 *field-constructed tank, n*—a tank constructed in the field.

3.1.3.1 *Discussion*—For example, a tank constructed of

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² Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.

³ Available from United States Environmental Protection Agency (EPA), William Jefferson Clinton Bldg., 1200 Pennsylvania Ave., NW, Washington, DC 20460, <http://www.epa.gov>.

concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field is considered field-constructed.

3.1.4 *implementing agency, n*—Environmental Protection Agency (EPA), or, in the case of a State with program approval (or pursuant to a memorandum of agreement with EPA), the designated State or Local agency responsible for carrying out the UST program.

3.1.5 *overflow, n*—exceeding the capacity of the tank.

3.1.6 *overflow protection, n*—a device used to prevent a tank from being overfilled when product is being added to the tank.

3.1.7 *release detection, n*—a method to determine whether a release of a regulated substance has occurred from the UST system into the environment or into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

3.1.8 *replaced tank, n*—to remove a tank and install another tank.

3.1.9 *replaced piping, n*—this means to remove 50 percent or more of piping excluding connectors, and install other piping, connected to a single tank.

3.1.9.1 *Discussion*—For tanks with multiple piping runs, replaced piping applies independently to each piping run.

3.1.10 *secondary containment or secondarily contained, n*—a release prevention and release detection system for a tank or piping utilizing an inner and outer barrier with an interstitial space that is monitored for leaks.

3.1.10.1 *Discussion*—This term includes containment sumps when used for interstitial monitoring of piping.

3.1.11 *spill, n*—a release of a regulated substance which results during the filling, placement, removal, or transfer of regulated substances to, or from, a UST system.

3.1.12 *spill prevention, n*—a device used to prevent or contain a spill associated with removing the fill hose from the tank fill pipe.

3.1.13 *suspected release, n*—released product discovered at or near the UST site, observed unusual operating conditions, such as apparent loss of product; or results from a release detection method that indicates a release.

3.1.13.1 *Discussion*—Suspected release does not include situations where a method or equipment is found to be defective, is immediately corrected, and then indicates no release.

3.1.14 *underground storage tank (UST), n*—any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including connected underground piping) is 10 % or more beneath the surface of the ground.

3.1.15 *upgrade, v*—the addition or retrofit of the UST system or some system components such as release detection, corrosion protection, spill prevention, or overflow protection to improve the ability of an UST system to prevent the release of product and meet the requirements of 40 CFR Part 280.

3.1.15.1 *Discussion*—Steel tanks not upgraded by October 13, 2015 to be protected in accordance with 5.3, must be

permanently closed except previously deferred UST systems with field-constructed tanks, airport hydrant systems, or where an upgrade is determined appropriate by the implementing agency.

3.1.16 *UST system, n*—an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.

3.2 *Additional Terminology*—The following definitions and discussions, taken directly from the publication “Form and Style for ASTM Standards” shall be included in full in every standard guide or practice produced and passed by Committee E-50 or any of its technical subcommittees, approved April 16, 1997.

3.2.1 *guide, n*—a compendium of information or series of options or instructions that do not recommend a specific course of action.

3.2.1.1 *Discussion*—Whereas a practice prescribes a general usage principle, a guide only suggest an approach. The purpose of a guide is to offer guidance, based on a consensus of viewpoints, but not to establish a fixed procedure. A guide is intended to increase the awareness of the user to available techniques in a given subject area and to provide information from which subsequent evaluation and standardization can be derived.

3.2.2 *practice, n*—a definitive set of instructions procedure for performing one or more specific operations or functions that does not produce a test result.

3.2.2.1 *Discussion*—A practice is not a downgraded test method. Examples of practices include procedures of interlaboratory testing programs or other statistical procedures; for writing statements on sampling or precision and accuracy; and for selection, preparation, application, inspection, and necessary precautions for the use, disposal, installation, maintenance, and operation of testing equipment. Further examples of practices include but are not limited to: application, assessment, cleaning, collection, decontamination, inspection, installation, preparation, sampling, screening, and training.

3.2.3 *standard, n*—as used in ASTM International, a nominative document that has been developed and established within the consensus principles of the Society and that meets the approval requirements of ASTM procedures and regulations.

3.2.3.1 *Discussion*—The term “standard” serves in ASTM International as a nominative in the title of documents such as test methods or specifications, to connote specified consensus and approval. The various types of standard documents are based on the needs and usages as prescribed by the technical committees of the Society.

4. Significance and Use

4.1 This guide is an educational tool for tank owners, operators, and other users and is not intended for use in certifying compliance with the Federal technical standards for underground storage tanks.

4.2 The intent of this guide is to provide an overview of the general requirements. This guide is intended for users who are