

**Study Guide for**  
**West Virginia Department of Environmental**  
**Protection**  
**Underground Storage Tank System**  
**Repair Technician Certification**

This document has been prepared in conjunction with the West Virginia Department of  
Environmental Protection and Marshall University

February 2013 (updated June 2018)

REVISED by WVDEP December 2021

## **Suggestions for using this study guide**

This study guide is intended to help you prepare for West Virginia's Underground Storage Tank System Repair Technician Exam. The study guide consists of an extensive list of questions together with the documents in which the answers to the questions can be found. All of the questions from a specific document are grouped together in the study guide. The process of reading the question, finding the answer, and writing the answer in your study guide will help you learn and remember the information you need to know to pass the certification examination.

The actual certification exam will include only the material covered in these study questions. The only difference is that the exam will be in multiple choice format. The exam will be open book. During the examination, you may refer to this study guide and any other reference materials that you wish. You are cautioned, however, that you will not have sufficient time to look up the answers to all of the exam questions. You should be thoroughly familiar with the materials in this study guide before you take the examination.

The study guide is based on a number of industry publications and manufacturers' literature. The use of these documents does not constitute endorsement of specific products by the West Virginia Department of Environmental Protection. These documents are used here as representative, authoritative sources of information regarding proper procedures for making repairs on underground storage systems.

**Suggested Study Guide Documents for the West Virginia Underground  
Storage Tank System Repair Technician Exam  
(Class F Worker Certification)**

**Study Documents**

PEI/RP1200-12 – “Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities”

PEI/RP100-11 – “Recommended Practices for Installation of Underground Liquid Storage Systems”

NFPA – “Code for Motor Fuel Dispensing Facilities and Repair Garages”, Chapters 5 and 6 (2012 Edition) NFPA 30A

NIOSH – Working in Confined Spaces (Publication 80-106)

OSHA – Permit Required Confined Spaces, 29 CFR 1910.146, Subpart J

OSHA – Lockout / Tagout 29 CFR 1910.147

USEPA – Federal Underground Storage Tank Regulations (40 CFR 280)

WVDEP – “Miscellaneous Testing Report Form” – Revised 7/19/2010

It is highly recommended that you obtain a copy of each of the study materials to review prior to taking the examination. Some of the study materials are free publications and are being provided as a courtesy to you by the WVDEP. For study materials that must be purchased, we have included information on where they can be obtained. Please note that information on purchasing study guide materials may change at any time. For this reason, the purchasing information provided may not be correct. **It is the sole responsibility of the applicant to obtain the necessary study guide materials to prepare for this exam.**

**“Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities”**

**(PEI/RP-1200-12, Petroleum Equipment Institute, 2012)**

*Study Guide Questions for West Virginia Underground Storage System Repair Technician Exam*

According to PEI/RP1200-12, at what elevation are shear valves, also known as emergency shut-off valves, crash valves or impact valves, to be located inside each dispenser?

Per PEI/RP1200-12 guidance, what is the “pass” criteria when inspecting a ball float valve used for overfill prevention?

PEI/RP1200-12 cautions, in the event motor fuels are swallowed, what is the correct procedure to follow?

PEI/RP1200-12 indicates which of the following is not disconnected by the emergency stop switch (also called the emergency shutoff switch)?

PEI/RP1200-12 cautions that UST system containment sumps may be large enough to present hazards associated with what OSHA standard?

According to PEI/RP1200-12, safety precautions should be observed when working in any area where fuel vapors may be present, including elimination of sparks. What types of equipment is specified for use in these situations to reduce spark potential?

According to PEI/RP1200-12, what OSHA standard must qualified persons understand and comply with when servicing electrical equipment?

PEI/RP1200-12 states, when testing a product shear valve, also called a crash valve, it must be properly anchored to the dispenser box frame or dispenser island. Which of the following are additional criteria that must be met in order for the shear valve to pass testing?

When working on an UST system with vehicle traffic nearby, PEI/RP1200-12 suggests workers should wear what type of garment?

According to PEI/RP1200-12, what actions should be taken if motor fuel comes in contact with eye tissue?

Spill cleanup materials are to be used in the event a spill occurs at an UST site. PEI/RP1200-12 states contaminated materials used for spill cleanup should not be stored at what location?

According to PEI/RP1200-12, what type of equipment should be worn to minimize the risk of exposure to potentially toxic chemicals in petroleum products?

According to PEI/RP1200-12, what is the "pass" criteria when testing an overfill alarm device used for overfill prevention?

Spills may occur during maintenance, testing or repair activities on an UST system. What does PEI/RP1200-12 recommend to be readily available at the facility in the event of a spill?

**“Recommended Practices for Installation of  
Underground Liquid Storage Systems”  
(PEI/RP100-11, Petroleum Equipment Institute, 2011)**

*Study Guide Questions for West Virginia Underground Storage  
System Repair Technician Exam*

According to PEI/RP100-11, where should a liquid sensor in a dispenser sump used for leak detection be located?

PEI/RP100-11 indicates flex connectors can be installed at what locations?

PEI/RP100-11 states that flexible connectors installed in dispensers or intermediate sumps should be listed for what type of environment?

PEI/RP100-11 warns that vent-restriction devices, also called ball float valves, must not be used under specific conditions, including which of the following?

Fill-pipe risers (drop tubes), submersible pumps and suction stubs, per PEI/RP100-11 guidelines, are to be installed with how much clearance from the tank bottom?

When does PEI/RP100-11 recommend installing piping unions on metallic piping underground?

According to PEI/RP100-11, galvanized pipe should not be used on tank systems storing what types of petroleum products?

According to PEI/RP100-11, what is the name of the sumps used for reason of extending existing piping systems and creating branches in piping?

Satellite dispensers are typically installed at truck fueling facilities so that both saddle tanks on a truck can be fueled simultaneously with a single sales transaction. According to PEI/RP100-11, what must the product piping linking the master and satellite dispenser that has been routed underground be monitored for?

**“Working in Confined Spaces”**  
**(National Institute for Occupational Safety and Health {NIOSH},**  
**December 1979, Publication 80-106)**

*Study Guide Questions for West Virginia Underground Storage  
System Repair Technician Exam*

According to NIOSH, which of the following is not a condition used to define a confined space?

According to NIOSH, for which classes of confined space must there always be someone readily available who is currently trained in cardio-pulmonary resuscitation (CPR) and basic first aid procedures?

According to NIOSH, for which class of confined space work is atmospheric testing required before the space is entered?

According to NIOSH, which of the following are physiologic (physical) effects of breathing in an atmosphere that contains 17% oxygen?

According to NIOSH, below what lower flammable limit (LFL) percentage is an atmosphere rated as Class C?

According to NIOSH, for what length of time is a confined space entry permit valid?

According to NIOSH, for which classes of confined space entry is a trained standby person, with fully charged, positive pressure SCBA equipment, always required?



According to NIOSH regarding confined spaces, what is the definition of a "Class C" confined space?

What is the NIOSH definition of "lower flammable limit"?

According to NIOSH, between what percentages is an atmosphere rated as Class C?

According to NIOSH, below what percent of oxygen in a confined space must approved respiratory equipment be used?

According to NIOSH, before entering a confined space, which of the following tests must be made to ensure that the atmosphere is safe?

According to NIOSH, for which classes of confined space is training of personnel required before performing confined space entry work?

According to NIOSH, for which classes of confined space work is a permit from a qualified person required before the space is entered?

According to NIOSH, what is the normal percentage of oxygen in air at sea level?

According to NIOSH regarding confined spaces, what is the definition of a "Class B" confined space?

**Occupational Safety and Health Standards (OSHA), Subpart J –  
General Environmental Controls, “Permit Required Confined Spaces”  
(OSHA Standard Number 1910.146)**

*Study Guide Questions for West Virginia Underground Storage  
System Repair Technician Exam*

According to OSHA regarding confined spaces, when using forced air ventilation in a confined space, how long must air ventilation continue?

Under OSHA guidelines for entry of confined spaces, when is an “attendant” required?

According to OSHA regarding confined spaces, in the event a hazardous atmosphere is detected in a confined space while occupied by an employee, what must the employee in the confined space immediately do?

According to OSHA regarding confined spaces, when is a written permit confined space program required?

According to OSHA 1910.146 regarding confined spaces, when can entry permits be cancelled by the entry supervisor?

According to OSHA regarding confined spaces, when are mechanical devices designed to retrieve personnel required?

**Occupational Safety and Health Standards (OSHA), Subpart J –  
General Environmental Controls,  
“The Control of Hazardous Energy (Lockout/Tagout)”  
(OSHA Standard Number 1910.147)**

*Study Guide Questions for West Virginia Underground Storage  
System Repair Technician Exam*

According to OSHA 1910.147 regulations, an “Energy Control Procedure” must be inspected how often to ensure procedures and requirements of the standard are being followed?

According to OSHA 1910.147 regulations, when can a tagout device attached to an energy isolation device be bypassed or ignored?

According to OSHA 1910.147 regulations, when are outside servicing personnel (like sub-contractors), required to follow the procedures contained within this standard?

According to OSHA 1910.147 regulations, on newly installed machines and equipment, energy isolating devices must be designed to accept what type of device?

**National Fire Protection Association – “Code for Motor Fuel Dispensing Facilities and Repair Garages” (Chapter 5 – Piping for Liquids, Chapter 6 – Fuel Dispensing Systems), NFPA 30A 2012 Edition**

*Study Guide Questions for West Virginia Underground Storage System Repair Technician Exam*

According to NFPA 30A, a listed emergency breakaway device designed to retain liquid on both sides of the breakaway point shall be installed on each hose dispensing what types of liquids?

According to NFPA 30A, flexible piping connections must be provided at what locations within the piping system?

According to NFPA 30A, fiberglass-reinforced plastic (FRP) piping does not require flexible joints if which of the following conditions exist?

According to NFPA 30A, fuel dispensing hoses at automotive fuel dispensing facilities are not to exceed what length?

According to NFPA 30A, emergency shut off switches be positioned in approved locations within what minimum and maximum distances from the fuel dispensing devices that they serve?

# **Code of Federal Regulations 40 CFR Part 280 “Technical Standards and Corrective Requirements for Owners and Operators of Underground Storage Tanks (UST)”**

## *Study Guide Questions for West Virginia Underground Storage System Repair Technician Exam*

According to 40 CFR 280, automatic line leak detectors are to be tested how often?

According to 40 CFR 280, overfill prevention equipment that automatically shuts off flow into the UST must shut off when the tank is no more than how full?

According to 40 CFR 280, automatic line leak detectors must be able to detect leaks of \_\_\_\_ gallons per hour at 10 psi line pressure within 1 hour.

According to 40 CFR 280 regulations, what must take place when a metal pipe section or associated fitting that has released product as a result of corrosion or other damage has occurred?

According to 40 CFR 280, when a tank and/or piping component has been repaired, what generally must occur within 30 days of the repair completion date?

According to 40 CFR 280, how long must written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site be maintained after service work is complete?

According to 40 CFR 280, if an UST owner or operator suspects a release has occurred from an UST system, how soon must the WVDEP be notified?

According to 40 CFR 280, overfill prevention equipment that alerts the transfer operator by restricting the flow into the UST must restrict the flow when the tank is no more than how full?

According to 40 CFR 280, in order to verify that secondary containment systems meet required criteria, testing of system sumps and interstices are required at installation, and how often thereafter?

According to 40 CFR 280, automatic line leak detectors must be able to detect leaks of \_\_\_\_ gallons per hour at 10 psi line pressure within 1 hour.

**West Virginia Department of Environmental Protection  
"Miscellaneous Testing Report Form" – Revised 7/19/2010**

*Study Guide Questions for West Virginia Underground Storage  
System Repair Technician Exam*

According to the WVDEP's Miscellaneous Testing Report Form, how often are routine testing of sumps and under-dispenser containment required?

According to the WVDEP's Miscellaneous Testing Report Form, when testing sumps and under-dispenser containment, if not using one of the test methods listed on the form, containment sumps being hydrostatically tested must be filled at least 6 inches above the highest penetration, fitting or joint and allowed to stand at least what length of time before beginning the test?

According to the WVDEP's Miscellaneous Testing Report Form, what action must occur if product is delivered to a system with a ball float, and a tight fill cannot be achieved or there is a pressure drop on the system?

According to the WVDEP's Miscellaneous Testing Report Form, how often are routine testing of interstitial spaces required?

According to the WVDEP's Miscellaneous Testing Report Form, applicable portions of the form must be completed and provided to the facility owner / operator within \_\_\_\_ of the test date. 25.

According to 40 CFR 280, automatic line leak detectors are to be tested how often?