

Guidance on the determination of causes and sources of releases at petroleum storage tank system facilities

The Petroleum Storage Tank Bureau (Bureau) is required to report the number, sources and causes of petroleum releases from petroleum storage tanks in order to implement the Public Records provision of the Energy Policy Act. This guidance is prepared to instruct the incident reporter to identify release source and cause information that will be compiled as part of the Bureau's public record report.

The Bureau has changed the existing Initial Incident Report Form in order to accurately identify sources and cause information that will help in gathering this data. The two categories of data, causes and sources, are divided into smaller different categories which are addressed below. The Report Form now includes a section the incident reporter must complete in order to provide a short but thorough description of the cause and the source of a release. Use your best judgment as to what part of the system is the most likely candidate for the source and what condition or factor is most likely the cause. Two common ways for determining causes and sources of releases are from visual observations and testing. Testing of a tank system can include tightness testing of the tank and piping and hydrostatic testing of sumps. The reported sources and causes provide information to identify where the release entered the environment

I. **Sources of a Release** – Identify the source of the release. Possible sources include the following:

A. Tank – This term means the tank that stores the product and is part of the petroleum storage tank system. When deciding whether the tank is the source of a release, it should be determined that the tank is the most likely candidate for the conditions found at the facility. A tank with holes in it is an obvious source of a release.

B. Piping – This means the pipe and connectors which connect the tank to the dispensers and is used to transfer a regulated substance between them. Piping doesn't mean vent, vapor recovery, or fill lines. Obvious indications that piping is the source includes finding contaminated soil around loose joints and unions along the piping run, or the piping failed a tightness test, or holes were found in the piping.

C. Flex Connector – A flex connector attaches the piping either to the shear valve underneath the dispenser or connects piping to the turbine pump.

D. Dispenser – The dispenser includes equipment used to meter and transfer fuel from the tank system and to connect the dispenser to the product piping.

E. Submersible Turbine Pump Area – This category includes the pump head, which is typically located in the turbine tank sump, the line leak detector, and the piping that connects the submersible turbine pump to the tank, as well as the sump itself.

G. Delivery Problem – A delivery problem identifies releases that occur during the delivery of a regulated substance to the tank. Typical causes associated with this source are spills and overfills.

F. Other – Use this option when the source of the release does not fit into any of the above categories. Examples of sources that fit within this category are as follows:

1. **Vent lines.** Regulated substances may enter the vent lines and either due to physical damage or corrosion a release occurs.

2. **Fill Lines.** Fill lines may have been compromised by corrosion, physical damage, or improper installation.

3. **Multiple sources** – A source for a release may originate from a tank or piping however, the secondary containment could be physically damaged or improperly installed and fails to contain a release. Therefore, any part of the tank system within the secondary containment that fails to contain a regulated substance will be a co-source of a release into the environment.

4. **Vapor Recovery Lines.** This is mentioned in the Grant Guidelines but not likely to be a source of releases in New Mexico.

II. **Causes of a Release** – May include the following:

A. **Spills** – Use this cause when a spill occurs, such as during a delivery to the tank system or when fuel is being transferred out of the tank system.

B. **Overfill** – An overfill of a tank occurs when too much fuel is transferred to a storage tank during a delivery.

C. **Physical or Mechanical Damage or Failure** – Include this cause for all types of physical and mechanical damage found in a storage tank system excluding damage or failure from corrosion. Examples of this category can be cracked valves, punctured pipe, and swollen or elongated flexible piping.

D. **Corrosion** – Use this cause when the integrity of metal components, including the tank and piping, of a storage tank system has been compromised by corrosion. Corrosion damage is a subset of observed problems where a root cause is from physical or mechanical damage.

E. **Installation Problem** – Use this cause when it is found that the storage tank system was not installed properly.

F. **Other** – Use this option when the cause does not fit into any of the above categories.

G. **Unknown** – Use this option only when the cause is unknown.