Ignition Hazards and Safe Work Practices for Abrasive Blasting of Atmospheric Storage Tanks in Hydrocarbon Service

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1.1 General

This recommended practice (RP) provides safe work practices for the prevention and control of vapor, ignition, and other potential hazards during abrasive blasting of aboveground storage tanks in liquid hydrocarbon service at atmospheric pressure. It is generally recognized in the petroleum industry that the preferable method is to empty, vapor-free, and clean aboveground petroleum storage tanks before starting abrasive blasting work. However, this may not be practical or even possible and may increase the risk of an undesirable hazard or incident in some situations. It is, therefore, necessary to understand the potential ignition and safety hazards when planning abrasive blasting and to implement the appropriate safeguards before starting this work.

This RP helps employers in developing operating procedures that provide for hazard recognition to significantly reduce ignition risks during abrasive blasting of hydrocarbon storage tanks in service that may contain or have the potential to develop a flammable atmosphere in the vapor space.

This RP does not cover all the precautions that may be required to safely perform abrasive blasting. Owner/operators and contractors shall conduct a thorough hazard analysis and pre-job start-up safety and health review for each specific abrasive blasting job to ensure that all necessary precautions and safeguards have been identified and implemented prior to beginning work.

1.2 Applicability

This RP applies to safe work practices required for abrasive blasting of exterior shells and exterior roofs of all aboveground atmospheric storage tanks in liquid hydrocarbon service. It also applies to safe work practices for abrasive blasting conducted on the roofs and inner portions of the exposed surfaces of shells (that portion of the shell above the roof level) on open-top (external) floating roof tanks.

1.3 Ignition Sources

This RP also covers recognition and control of ignition hazards that are specific to and may be present during abrasive blasting of aboveground storage tanks in liquid hydrocarbon service at atmospheric pressure. The ignition sources covered in this RP include static electricity, internal combustion engines, electric motors, friction sparks, hot metal surfaces, and external-to-the-work ignition sources.

1.4 Non-applicability

This RP does not apply to the abrasive blasting of the following types of tanks or vessels:

— pressure vessels and low-pressure tanks;

— cryogenic or refrigerated vessels or tanks;

— vacuum vessels;

— process vessels;

— underground storage tanks; or

— storage tanks containing heated hydrocarbons.