



## Your Reliable Guide for Power Solutions

To fulfill our commitment to be the leading supplier in the power generation industry, the Buckeye Power Sales team ensures we are always up-to-date with the current power industry standards, as well as, industry trends. As a service, our **Information Sheets** are circulated on a regular basis to existing and potential power customers to maintain their awareness of changes and developments in standards, codes and technology within the power industry.

### Installation of a Flammable & Combustible Aboveground Storage Tank (AST)

#### 1.0 Introduction

An Aboveground Storage Tank (AST) is a critical component of the fuel system for a standby generator. There are many things to consider when selecting and installing an AST. One must know the applicable codes, apply for the proper permit, determine the requirements for the tank and installation, and get approval from the appropriate inspector. It is important that the designer and installer of the system be familiar with each of these areas.

*This Information Sheet discusses NFPA 30 pertaining to Flammable and Combustible Liquid Codes and the State of Ohio requirements for installation of a flammable and combustible Above Ground Storage Tank (AST) in a non-dispensing, emergency generator, industrial application.*

#### 2.0 NFPA 30 Overview

The National Fire Protection Association (NFPA) maintains several standards covering standby generators and automatic transfer switches (ATS). NFPA 30 covers the storage of diesel (combustible liquid). NFPA 110 (Chapter 6) covers the generator and automatic transfer switch. **It is required that designers review the complete NFPA 30 and NFPA 110 document (s) to determine exact requirements.**

Adopted by most states and enforceable under Ohio Fire Code, *NFPA 30: Flammable and Combustible Liquids Code* presents the latest and most complete guidance on the safe storage, handling and use of these volatile substances. It provides the criteria you need to design facilities for better protection, comply with requirements and use safe operating practices.

#### 3.0 Aboveground Storage Tank (AST) Regulation

Aboveground storage tanks (ASTs) in Ohio are regulated under the Ohio Fire Code, which is based on the 2009 International Fire Code (I-Codes).

Federal regulations also apply to ASTs. Because Ohio has not published its own oil pollution prevention regulations, facilities in the state are subject to the Spill Prevention Control and Countermeasure (SPCC) requirements and must comply with federal regulations (40 CFR part 112). The SPCC program was set forth under federal regulations by U.S. EPA and applies to non-transportation facilities that store oil and/or oil products.

#### 4.0 Permits

A permit is required from the State Fire Marshal to install, remove, repair or modify any ASTs used for the storage of flammable or combustible liquids, only when the local fire code official does not issue the permit. Any ASTs that are no longer in use must be removed in an approved manner after a permit is obtained. OAC 1301:7-7-34(A)4 (OFC 3401.4) - OAC 1301:7-7-01(E)(A)(a) (OFC 105.1.1). Applications are available at: [www.com.ohio.gov/fire/onestoptankshop.aspx](http://www.com.ohio.gov/fire/onestoptankshop.aspx).

## 5.0 Tank Requirements

The tank should be listed for aboveground use for containing flammable and combustible liquids and be designed and constructed in accordance with recognized standards or approved equivalents. NFPA 30 (2008 edition), Section 21.4.2. A cut sheet from the manufacturer showing the tank and its appurtenances are approved for the intended use shall be submitted with the permit application.

Spill control is required for the tank. A double wall tank / secondary containment tank would be acceptable for meeting this code requirement.

Overfill prevention needs to be provided. An alarm that sounds at 90% tank capacity when filling and an overfill prevention device capable of stopping the flow of the product into the tank at 95% capacity is also required. OAC 1301:7-7-34(D)(2)(v)(h); OFC 3404.2.5.8. The exception to this requirement is tanks of 1300 gallons or less.

A spill container having a capacity of not less than 5 gallons is required for each fill connection. (OFC 34)

## 6.0 Installation Requirements

A) Tanks must be installed in accordance with the Ohio Fire Code Chapter 34 and the requirements specified in NFPA-30 (2008 edition)

B) Depending upon the size of the tank and the tank type, distances to buildings, property lines and public ways need to be met in accordance with 2011 Ohio Fire Code Chapter 34 and NFPA 30 (2008 edition).

C) The public must be safeguarded from access to or unauthorized entry to the storage area. The tank can be enclosed in a chain link fence, no less than six (6) feet in height and no less than three (3) feet out from the tank on all sides unless the property has a perimeter security fence to prohibit public access to the storage tank area.

D) The vehicular barrier protection (bollards, guardrail, bumper posts) shall be located on all sides of the tank subject to vehicle damage. These are required to be no less than three (3) feet from the tank and four (4) feet on center. Minimum height is required to be no less than 36 inches.

E) Any underground piping shall be listed and labeled for its use and shall be installed in accordance with the manufacturer's instructions and protected from corrosion. Any aboveground piping must be listed and labeled for its use and shall be protected from vehicles and corrosion and supported properly. (NFPA 30, Chapter 5)

F) Normal vent lines are required to be located 12 feet above the adjacent ground level and shall be unobstructed and outside of any enclosure, such as those tanks utilized as sub-base generator tanks.

## 7.0 Approval

Prior to final approval, the inspector will need to see approval from the building official having jurisdiction for the tank foundation and electrical work. Contact the appropriate authorized building department for approval of these issues.

(Ohio Building Code, Sections 101.2, 1801.1 and 2701.1).



This summary is not intended to include all requirements set forth in the Ohio Fire Code, the Ohio Building Code or NFPA 30. This information is to assist you with the beginning stages of your design process.



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