CGA

Compressed Gas Association

The Standard For Safety Since 1913

ANSI/CGA P-18—2020

STANDARD FOR BULK INERT GAS SYSTEMS

FIFTH EDITION

Approved American National Standard

ANSI

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Work Item 18-009
Bulk Distribution Equipment and Standards

NOTE—Due to the extensive changes in this document, technical changes from the previous edition are not identified.

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FOURTH EDITION: 2013
THIRD EDITION: 2006
SECOND EDITION: 2005

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1 Introduction

This standard contains minimum requirements for locating/siting, selecting equipment, installing, starting up, maintaining, and removing bulk inert gas supply systems.

2 Scope

A bulk inert gas supply system is one that contains greater than 20 000 scf (566 m^3) of inert gas. Requirements of this standard are limited to systems operating up to 15 000 psi (103.4 MPa).

Two types of bulk inert gas supply systems are covered in this standard: liquid and gaseous.

A liquid system is one where the inert gas is delivered to the supply system and stored on-site in liquid form. The inert gas is supplied in either liquid or gaseous form to the customer's requirement. When required, pumps are used to increase the gas pressure before it is supplied to the customer. When required, coded vessels are used to store the gas before it is supplied to the customer. The system is a bulk liquid system instead of a bulk gaseous system because the gas is delivered from the supplier to the storage of the system in liquid form.

A gaseous system is one where an inert gas is delivered to the supply system, stored, and is supplied to the customer's requirement in gaseous form.

This standard applies to inert gas supply systems containing any of the following equipment. Not all inert gas systems include all the equipment listed.

Inert gas supply systems include:

- cryogenic storage tank;
- gas storage vessels (receivers);
- vaporizers;
- valves including manual and automatic shutoff valves and check valves;
- pressure control equipment including regulators and control valves;
- piping (pipe and tubing);
- cryogenic pumps;
- snubbers and pulsation dampeners; and
- monitoring and control systems including electrical and instrumentation.

The bulk inert supply system terminates at the source valve where the gas or liquid supply first enters the supply line.

This standard does not apply to carbon dioxide systems. For additional requirements on bulk inert gas systems at health care facilities, see CGA M-1, *Standard for Medical Gas Supply Systems at Health Care Facilities (an American National Standard),* NFPA 55, *Compressed Gases and Cryogenic Fluids Code,* and NFPA 99, *Health Care Facilities Code* [1, 2, 3].[1] Bulk carbon dioxide system requirements are found in NFPA 55 and CGA G-6.1, *Standard for Insulated Liquid Carbon Dioxide Systems at Consumer Sites* [2, 4].

[1] References are shown by bracketed numbers and are listed in order of appearance in the reference section.