Compressed Gas Association
The Standard For Safety Since 1913

CGA P-8.6—2022

UNMANNED AIR GAS PLANTS: DESIGN AND OPERATION

THIRD EDITION

PREFACE

As part of a program of harmonization of industry standards, the Compressed Gas Association (CGA) has issued CGA P-8.6, *Unmanned Air Gas Plants—Design and Operation*, jointly produced by members of the International Harmonization Council and originally published by the European Industrial Gases Association (EIGA) as EIGA Doc 132, *Unmanned Air Gas Plants—Design and Operation*.

This publication is intended as an international harmonized standard for the worldwide use and application of all members of the Asia Industrial Gases Association (AIGA), Compressed Gas Association (CGA), European Industrial Gases Association (EIGA), and Japan Industrial and Medical Gases Association (JIMGA). Each association's technical content is identical, except for regional regulatory requirements and minor changes in formatting and spelling.

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This document is subject to periodic review, and users are cautioned to obtain the latest edition. The Association invites comments and suggestions for consideration. In connection with such review, any such comments or suggestions will be fully reviewed by the Association after giving the party, upon request, a reasonable opportunity to be heard. Proposed changes may be submitted via the Internet at our web site, www.cganet.com.

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NOTE—Technical changes from the previous edition are underlined.

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1 Introduction

This publication has been written to address issues relating to the increasing number of air gas production facilities that are run unmanned or remotely operated.

There are many similarities in the operation of manned, unmanned, and remotely operated plants; however, there are some differences. These differences are not only in how the plant is operated and maintained but also how the plant is designed. In particular, designing new unmanned plants or converting existing plants from manned to unmanned or remote operation requires specific design considerations to ensure an equivalent level of safety to that of a manned operated plant.

2 Scope and purpose

The purpose of this publication is to provide guidelines for the design, operation, and maintenance of a plant that has unmanned or remote operations.

Unmanned or remotely operated plant functionality can range from a plant with full remote functionality i.e., satellite plant controlled by a remote operating center (ROC) to a plant with autonomous operation.

The installations that are included in this publication are:

- cryogenic air separation plants;
- cryogenic nitrogen generators;
- noncryogenic plants (pressure swing absorption, vacuum pressure swing absorption, membrane, etc.,) for oxygen and nitrogen;
- pipeline compression stations;
- compressed dry air facilities; and
- back-up systems and site storage, if existing and integrated with the production unit.

Specifically excluded are product supply tanks installed at a customer's premises, home care units (for example, concentrators), and noncryogenic plants with a capacity of 5 ton (5 000 kg) per day or less. For noncryogenic plants from 5 ton to 20 ton (5 000 kg to 20 000 kg) per day, a risk assessment shall be carried out to identify which requirements of this publication apply.

3 Definitions

For the purpose of this publication, the following definitions apply.

3.1 Publication terminology

3.1.1 Shall
Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should
Indicates that a procedure is recommended.

3.1.3 May
Indicates that the procedure is optional.

3.1.4 Will
Is used only to indicate the future, not a degree of requirement.

3.1.5 Can
Indicates a possibility or ability.