Compressed Gas Association
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GUIDELINE FOR PERIODIC SERVICE PROGRAM FOR INDUSTRIAL GAS REGULATORS

THIRD EDITION

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Work Item 22-023
Industrial Gases Apparatus Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—No technical information has been changed from the 2017 edition. This reaffirmed edition may include minor editorial changes.

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1 Introduction

Regulators have a finite service life that is a function of several variables, and consequently, they require regular inspection and periodic maintenance to be kept in service.

Materials used in regulators, particularly elastomeric or rubber materials, will deteriorate over time. Aged elastomeric materials can exhibit hardening, stress cracking, and other physical property degradation. Regulator components such as diaphragms, relief valves, seat assemblies, and gauges can be dramatically affected by material aging.

When regulators are manufactured, they should meet strict industry standards for cleanliness. Over time, regulators can become contaminated with dust, grease, and organic substances. Because oxygen can react violently with these substances, this contamination can be dangerous since it increases the potential for oxygen fires. Particles can be generated from continual connecting and disconnecting to and from cylinder valve. Particulates can lead to particle impact, which in the presence of high pressure oxygen increases the potential for oxygen fires. Contamination and/or particulates can also cause internal components to fail or malfunction, which can lead to leakage of flammable, asphyxiant, or other hazardous gases from the regulator and/or parts being expelled from the regulator.

It is not uncommon to see regulators for sale at flea markets, garage sales, auctions, e-commerce, or other places where used industrial equipment can be bought and sold. Typically, these regulators have not been properly maintained, creating a variety of safety hazards for the user. If the service history of a previously used industrial regulator that is acquired is unknown, then it is strongly suggested that it not be placed into service. Because the general public is often unaware of the potential danger(s) of using old, ill-repaired, or contaminated regulators, incidents involving these regulators have resulted in serious injuries and deaths.

2 Scope

This publication establishes a program for marking a service date on compressed gas regulators intended for use in welding, cutting, and allied processes. It also informs end users and the regulator service repair industry of actions they should take to properly mark and maintain regulators. This program can be applied to regulators used in other applications such as specialty gas, etc.

Customer-specified regulators, original equipment manufacturer (OEM), and special application regulators may be excluded as agreed upon by the manufacturer and the customer.

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.