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GUIDELINE FOR DEVALVING CYLINDERS

FOURTH EDITION

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1 Introduction

Cylinders are devalved for many purposes such as inspection, requalification, cylinder cleaning, change of service, installation of a new valve, or preparation for filling. Near misses, injuries, and fatalities have occurred during the devalving of cylinders that were pressurized. Uncontrolled release of gases to the environment, worker health and safety concerns from gas exposure, fires, and the catastrophic sudden release of energy have all been associated with devalving operations.

2 Scope

This publication identifies devalving hazards and provides guidance to prevent incidents.

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.

4 Hazards

Whether processing single or multiple cylinders for devalving, workers can incorrectly assume a cylinder with a valve in the open position is no longer under pressure and proceed to remove the valve. The primary risk in this situation is the possibility that the valve is broken or blocked and, although the valve appears to be in the open position, the cylinder contents are still under pressure.

Pressure gauges should not be relied upon to determine if a cylinder is empty prior to devalving. A false indication of the cylinder's pressure can result from reading gauges that are broken, damaged, out of calibration, or are otherwise defective. Even a properly functioning, high pressure gauge can give a false indication that the cylinder is empty. Such false information will lead operators to believe the cylinder has no pressure and can be safely devalved. In addition, positive residual pressure valves will continue to contain pressure in the cylinders unless the residual pressure is properly discharged. Devalving a cylinder under these circumstances can lead to injury, fire hazards, stored energy releases, and environmental hazards.

5 Devalving guidelines

It is recommended that all organizations, groups, and individuals responsible for devalving operations prepare, implement, and audit procedures for devalving operations. The following procedures have been split into two sections, the first for cylinders in non-acetylene service (5.1) and the second for cylinders in acetylene service (5.2), should address each cylinder and valve design, type of gas/service, unique hazards, and the type of devalving equipment used (manual or automated).