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Foreword

The purpose of this guide is to provide information concerning the proper use of carbon monoxide (CO) alarms and detectors. The guide covers the major technologies used for the detection of CO, the differences between CO alarms and CO detectors, combination devices and CO device reliability, effectiveness and limited life.

The guide was developed by NEMA’s Signaling Protection and Communications Section (3-SB). Some of the material contained in the guide was extracted from NFPA 720, Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment. NEMA extends its thanks to the National Fire Protection Association (NFPA) for granting permission to extract this material.

About the NEMA Signaling Protection and Communications Section (3SB):

The objective of the Signaling Protection and Communications Section is to be the principal source of technical, training, and educational materials essential for the specification, application and manufacture of reliable life safety products, including their installation, performance and inspection.

The Section currently represents 18 manufacturers in support of the automatic fire detection and alarm industry and the health care communications industry. Fire detection and alarm products include life safety/fire alarm systems and devices that provide early warning of an impending or actual fire or gaseous hazard. The products detect, notify, and initiate control functions in case of hazard to life or property. For more information on life safety, go to www.lifesafetysolutionsonline.com.

About the Association Electrical and Medical Imaging Equipment Manufacturers (NEMA):

NEMA is the association of electrical and medical imaging equipment manufacturers. Founded in 1926 and headquartered near Washington, D.C., its approximately 450 member companies manufacture products used in the generation, transmission and distribution, control, and end use of electricity. These products are used in utility, industrial, commercial, institutional, and residential applications. The association’s Medical Imaging & Technology Alliance (MITA) Division represents manufacturers of cutting-edge medical diagnostic imaging equipment including MRI, CT, x-ray, and ultrasound products. Worldwide sales of NEMA-scope products exceed $120 billion. In addition to its headquarters in Rosslyn, Virginia, NEMA also has offices in Beijing and Mexico City.

Proposed or recommended revisions should be submitted to:

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1 Scope and Purpose

1.1 Scope

This document covers carbon monoxide (CO) detection devices including single and multiple station CO alarms and system-connected CO detectors and sensors connected to a control unit. CO detection devices used in ventilated spaces, such as enclosed parking garages, are not included under the scope of this document but are addressed by the Occupational Safety and Health Administration and the Environment Protection Agency.

1.2 Purpose

The purpose of this document is to provide guidance on the proper application, installation, location, performance, inspection, testing, and maintenance of CO detection devices. It outlines basic principles, which should be considered in the application of early warning CO detection devices. Operating characteristics of devices and environmental factors, which may aid, deter, or prevent their operation, are identified.

Fire protection engineers, mechanical and electrical engineers, fire service personnel, building code officials, fire alarm designers, and installers will find the contents educational.

The document is based on industry expertise and many years of experience, and it is intended to be used only as a technical guide. Applicable codes and standards as well as directives of the Authorities Having Jurisdiction must be followed.

2 Referenced Standards

2.1 Installation Standards

National Fire Protection Association (NFPA):

NFPA 720-2009, Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment: The standard covers the proper application, installation, and maintenance of CO detection. The 2009 edition of The Standard is primarily concerned with life safety, not with protection of property, public health or worker safety. It covers the selection, design, application, installation, location, performance, inspection, testing, and maintenance of CO detection and warning equipment in buildings and structures.

NFPA 72-2010, National Fire Alarm and Signaling Code: The standard covers the application, installation, location, performance, inspection, testing, and maintenance of fire alarm systems, supervising station alarm systems, public emergency alarm reporting systems, fire warning equipment and emergency communications systems (ECS), and their components.

2.2 Product Standards

The following American National Standards Institute (ANSI) and Underwriters Laboratories (UL) ANSI/UL standards apply to CO alarms and CO detectors: