

*Hazardous Material Response Handbook*, by M.F. Henry, National Fire Protection Association, Quincy, MA, 1989, ISBN 0-87765-358-5, 561 pp., \$ 49.50.

This handbook is essentially a publication of the complete texts of the recently revised National Fire Protection Association's (NFPA) newly issued hazardous materials documents:

- Standards for the Professional Competency of Responders to Hazardous Materials Incident (NFPA 472)
- Recommended Practices for Responding to Hazardous Materials Incidents (NFPA 471)

Based on the above introduction, one might expect a dull recitation of detailed standards. Such is not the case. The editor and his team have given voluminous explanatory commentary following each paragraph of standards on the meaning, importance and application of the material in the paragraph. In addition the commentary is most excellent.

The first section, as noted, defines standards for levels of competence of responders to Hazardous Material (HM) incidents. Three competency levels and what each person specified for that level should know are specified by using questions. Not only are the specific capabilities and requirements for Hazardous Materials response given, but also the answers.

Question: describe at least six ways hazardous materials are harmful to people, at a hazardous material incident:

- First Responders
- Hazardous Material Technicians
- Hazardous Material Specialists

Answer: The six ways are thermal, radioactive, asphyxiation, chemical, etiologic and mechanical. There may also be psychological harm.

Commentary: The ways listed are not always a threat at every hazardous materials incident. The responder may be exposed to only one of the threats at a given emergency, or there may be a combination of several. Psychological harm might be considered as an ever-present phenomenon for the responder.

The second section of the book uses their standard format of details of the regulations followed by the commentary. In this section, the topic is NFPA Guide 471, *Responding to Hazardous Materials Incidents*. Covered are:

- Incident response planning
- Site safety
- Personal protective equipment
- Incident mitigation
- Decontamination

The third section (this section actually comprises more than one half of the book) is called a 'supplementary section' and brings together diverse real-life reports such as:

- How to start a hazardous materials team

- Sacramento (California) protocol for response to hazardous material incidents
- Beginning of the hazardous analysis process
- Canadian Association of Fire Chiefs decontamination guide
- Chemical compatibility for protective clothing
- National Response Team's hazardous material emergency planning guide

In summary, I found this to be one of the most useful, from a practical point of view, books on hazardous materials planning and response that I have read in a long time. It will be of great value to me as I assist in writing our local county plan for response to hazardous material incidents.

GARY F. BENNETT

*Handbook of Compressed Gases*, by Compressed Gas Association, Chapman and Hall, London, 1990, 3rd edn., ISBN 0-442-21381-8, 657 pp.

This book focuses on the properties and accepted means of transportation, strategies and handling of compressed gases. Its goal (which I think has been realized) is to provide engineers and scientists (including those without detailed technical training) a basic understanding of the properties, safety considerations and regulatory requirements concerning compressed gas and compressed gas equipment. To accomplish the goal, the book has been divided into four parts. Each is described below.

Part One presents basic information on compressed gas and cryogenic liquids. The introductory presentation gives an overview of the uses to which these materials are put, the regulatory framework involved in their shipping and handling, and the scientific bases for understanding the behavior of gas. The type of containers used in containing these materials and basic guidelines for their safe handling are also discussed.

Of interest to me was their definition of compressed gas:

“Any material or mixture having in the container an absolute pressure exceeding 40 psi at 70°F (275.8 kPa at 21.1°C) or regardless of pressure at 70°F having an absolute pressure exceeding 104 psi at 130°F (717 kPa at 54.4°C) or any liquid material having a vapor pressure exceeding 40 psi absolute at 100°F (37.8°C) as determined by ASTM test D-323.”

Part Two addresses several specific areas of significant concern for equipment used in conjunction with compressed gases. The main topic is the bulk shipment of liquified compressed gas by car or cargo tank, which is an important means of distributing gases produced in a relatively large amounts.

The five chapters of the section are titled:

- Handling bulk shipments of liquified compressed gases
- Pressure relief and safety devices
- Cylinder valve, cylinder ancillary equipment, and bulk transfer connections