

Preface

The sixth edition of *Industrial Safety and Health Management* continues the tradition of earlier editions in providing common sense rationales for safety and health standards and work practices along with new developments in the field. This edition also has more case studies, examples, exercises, and illustrations to add realism to the learning process.

Much progress has been made in the field of industrial safety and health management, but the job is not done. Cranes continue to fall in dramatic, recent accidents in downtown metropolitan areas, killing workers and the public as well. New health concerns are shifting the focus to tinier concentrations of contaminants and even tinier nanoparticles that have the potential of bringing about new hazards from dangerous fibers. In the economic climate of the deep recession of 2008 to 2009, safety and health managers need analysis tools to support their cause with top management. There is little doubt that safety and health managers are facing new challenges and need effective tools for dealing with them.

Recent developments in technology impact the field of industrial safety and health, and the sixth edition has new sections devoted to robotics, nanotechnology, heat processes, and controlling indoor air quality by carbon dioxide monitoring and the use of variable air volume (VAV) ventilation systems.

The chapter on ergonomics has been completely reworked and places more emphasis on workplace musculoskeletal disorders (WMSDs). More illustrations are used, and a case study demonstrates the revised NIOSH lifting equation. A focus has been given to explaining the factors responsible for WMSDs and the actions that can be taken for their remedy.

Other added topics in this edition include systems safety, fishbone diagrams, Swiss cheese theory, safety “from the ground up,” the mechanics of fire, metalworking fluids, chip removal, arc flash, and controlled decking zones.

In recent developments of the twenty-first century, national security has become a priority, and the issue of workplace security has risen with it. The Department of Homeland Security represents one of the largest reorganizations of the federal government in history, and the department becomes the third largest cabinet-level agency in the government. The presidential administration of Barack Obama and the Democratic sweep of both houses of Congress introduce a new political climate that is bound to affect OSHA and the field of industrial safety and health. This edition

addresses new political developments including national crisis management, immigrant workers, international standards, and workplace security.

Green engineering, the challenge of global warming, the reduction of the carbon footprint, and energy consumption and management are bringing about change to work methods and impact safety and health, too. The sixth edition recognizes these new challenges to the function of Industrial Safety and Health Management.

OSHA policies, procedures, and inspection priorities have changed, and this edition explains DART, TRC, and DAFWII inspection criteria and keys to the NAICS system that is replacing the SIC system of classification of industries. Added to OSHA benchmarks for health standards are NIOSH Recommended Exposure Levels (RELs).

The book's Companion Website at <http://int.prenhall.com/asfahl> provides access to the latest available electronic database of detailed national inspection statistics, including numbers of standards citations, average penalty levels, numbers of serious citations, and statistics on contested citations. This database is proprietary and does not appear on the OSHA website. The database provides information at the OSHA citation level of detail at the individual paragraph level. The latest edition includes construction inspection statistics as well as general industry data. End-of-chapter exercises provide opportunities for students to practice research with the database. Also on the Companion Website are answers to selected end-of-chapter exercises.

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WHAT'S NEW IN THIS EDITION?

For easy reference, the authors have summarized the new features of this edition as follows:

- New section on Workplace Security
- Inclusion of voluntary standards for Illumination
- Expanded chapter on Ergonomics, including the revised NIOSH Lifting Equation, Ergonomic Risk Analysis, and Sources of Ergonomics Hazards
- New section on Nanotechnology
- New section on the Mechanics of Fire
- New section on Heat Processes
- New section on Industrial Robots
- New section on Arc Flash
- Coverage of such topics as Systems Safety, Fishbone Diagrams, Swiss-Cheese Theory, Safety from the Ground Up, Metalworking Fluids, Chip Removal, Controlled Decking Zones, and Variable Air Volume Ventilation Systems
- Introduction to Global Warming and Green Engineering as they affect Safety and Health Management

- Coverage of current political developments, such as immigrant workers, international standards, and national crisis management
- Changes to the OSHA system of statistical recordkeeping, including the DART and DAFWII incidence rates, and the replacement of the SIC system by the NAICS system of classification of industries
- Updated database of detailed statistics on nationwide OSHA enforcement statistics, including expansion to include the OSHA Construction standards, accessible on the book's Companion Website
- Expanded exercises, case studies, and vivid graphic illustrations of concepts

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C. RAY ASFAHL
DAVID W. RIESKE