Foreword

Public health is on the minds of nearly everyone in today's society. As our geographic boundaries no longer limit us as we engage in manufacturing and commerce throughout the world, we have to worry more about health risks associated with toxic, flammable, reactive, and biological exposures than we did just one generation ago. There were fewer health risks to the general population associated with travel because people travelled less. Although exposure reduction methods have improved over that generation, practices such as deep well and deep water drilling for gas and oil and the associated fracturing of the oil and gas bearing rock, have increased; expansion and growth of industries in China, a resurging nuclear industry, and a much larger and complex transportation network have introduced significantly more and more complex exposure potential. The potential for exposure to nuclear, chemical, and biological hazards continues to increase. At the time of this writing, the public and social media have been actively talking about the Ebola virus and the flu like never before. As material science advances in the face of demand for lighter and stronger materials, and our chemical and energy needs increase, effective solvents, cheaper fuel, and more resilient coatings continue to be increasingly explored and manufactured. As the pharmaceutical industry is challenged to come up with newer and better drugs every day, our ability to protect our industrial and public health will be increasingly challenged and tested. It is the intent of this book to help provide safety, environmental, and health professionals with the information that will help them to take on this ever-increasing challenge.

With this collection of chapters from the ASSE's The Safety Professionals Handbook, this book concentrates on the information necessary to address occupational and environmental health through the practices and the principles that have proven to help our authors address, in their practices, the very challenges of which we speak and of which are noted above. The book begins with two chapters addressing the overarching practices of management and risk assessment as these apply to the reduction of any hazard. These chapters represent the some of the foundational material that would allow us to begin to integrate occupational and environmental health management elements into our overall management systems. This is important, as the International Standards Organization is nearing delivery of a management system document on safety and health (ISO 45001) to supplement and complement their environmental management standard (ISO 14000).

The chapters of the next section address the best practices, approaches, and principles of reducing the risks posed by the more traditional air, water, and solid and hazardous waste hazards associated with industrial operations. These chapters are not only written as best practices chapters, but they are written much more comprehensively. They address all aspects of managing the many and complex hazards of the potential pollution of air, water, and land. Our authors do address the many technical aspects of understanding the identification, assessment, and the control of the exposure-based risks posed to workers, the public, and the environment by contaminants found in today's industrial processes. But they also address administrative and economic elements required of this safety, health, and environmental business as well. You will find treatment of the regulatory drivers, evaluation of the cost of contamination, the prevention of the release of those hazards, or at least the control and management of the risks, as well as covering the response to release of the contaminant. The authors also discuss the important aspects of
measuring effectiveness of implementing the best practices that you will find in these pages. The coverage is quite comprehensive and, while this landscape is constantly and rapidly changing, much of what is addressed here is timeless.

There is much more to gain as you progress through the book and find the practices, principles, and approaches to industrial hygiene, hazard communications, ergonomics, and safety and health training written by leading authors and practitioners in these fields. It is recognized that the regulations that govern these areas do not necessarily change often; however, the expanding body of knowledge of the science does, in fact, drive significant changes to both the recognition and the control of these hazards. It is for this reason that one should keep current by reading the pages of these chapters, as they are written by some of the most notable practitioners and scientists in the occupational and environmental health fields. Fleet safety is of paramount importance given that roadway fatalities account for over 20 percent of all occupational fatalities. Also, the transport of hazardous, flammable, or reactive materials has a strong bearing on the potential exposure to those who live and travel along transportation routes.

While the chapter on personal protective equipment (PPE) has a conspicuous place in the effort to protect occupational and environmental health of our workers and the public, it is covered here in more depth and breadth than might typically be done in a strictly environmental book. Covered are such aspects of PPE as specification, quality, maintenance, and care and management of an appropriate supply. Other areas that may have a more implicit relationship with industrial hygiene and environmental management are fire protection and emergency preparedness. They are covered here because of the impact they can have on occupational and public health in the event of a loss of containment. When there has been a release of hazardous material (certainly few can argue this), one can imagine that not only will industrial hygiene and environmental professionals be part of the emergency response, but also, because of the increased potential for fire during one of these releases, there is a strong need to explore the best practices that have been established to safely quantify, contain, control, and clean up a spill and possible subsequent fire from one of these releases.

A word of caution is warranted here, however. Today, in industry, the term best practices is frequently used, if not overused, to represent practices that some have found to be useful in their own operations. It is a term that can be used effectively and appropriately in one company location, where a number of practices have been attempted, and the one that yielded the best results would then appropriately be called the best practice. It is often the case, however, that best practices are touted on a larger, more generalizable scale to a wider audience as the best practice. While this certainly may be true, in this case, it is recommended that one exercise caution in the use of any best practices to be sure that the recommended practices make sense for your organization, and that they are tailored to fit your own organization’s needs and goals. The authors have done a wonderful job of pulling together the best of what their collective experiences have shown to be both effective and doable. They present ways to implement difficult and sometimes costly control measures in a world of competing objectives and deadlines in protecting the occupational health of their workforce, the public health of the community, and the health of the environment. Please read these chapters carefully, and seriously consider implementing the practices that are best for your organization. I wish you well in the quest and know that this book will contribute to your overall efforts of protecting occupational and environmental health.

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