



Risk-Informed, Performance Based Industrial Fire Protection
An Alternative to Prescriptive Codes by Thomas F. Barry, P.E.

From the Author



The steps, methods, and tools described in this book are intended to bridge the gap between qualitative and quantitative fire risk assessment by filling the void between educated opinion and objective decision support information.

The book presents a risk-based decision support process to help identify fire safe design and protection alternatives and then select the best alternative(s) based on risk tolerance, meeting the performance intent of applicable codes, and cost/benefit criteria.

Fire safe design responsibility includes many groups; architects, facility and process designers, fire protection and safety engineers, loss control and risk managers; review and approval groups including building code officials, fire marshals, regulatory agencies, and insurance companies. In this book, all these groups are placed under one title, “Risk-Based Decision Makers.”

“Risk-Informed” provides another dimension to the traditional approaches taken towards life safety and fire protection design methods and practices. It provides a path forward for situations where applying prescriptive codes is not feasible or cost-effective, where applying performance-based deterministic modeling has many uncertainties, or where there is a desire to conduct cost/benefit analysis of numerous fire protection alternatives.

I have worked in the industrial fire protection field for 24 years. My Masters degree is in Fire Protection Engineering from Worcester Polytechnic Institute (WPI), Worcester, MA. My professional engineering registration is in Fire Protection. Since 1989, most of my consulting work has been in the chemical, oil, gas, electronics, government, and nuclear sectors and has involved some or all of the steps described in this book. More and more plant managers and risk managers are asking for risk-informed, performance-based information so that they can make more intelligent decisions concerning fire and explosion risk reduction.

All the information in this book is based on real world experience using established risk and reliability analysis techniques specifically applied to fire and explosion risk. The chapter numbering follows the step numbering, which leads the reader from project definition (Chapter 1, Step 1) to the cost/benefit analysis of risk reduction alternatives (Chapter 8, Step 8).

I hope you enjoy this book and find it useful.

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