Sutton

Process Safety Management

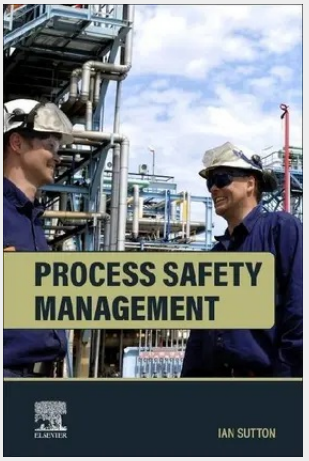
Process Safety Management provides comprehensive, practical guidance for developing and implementing process safety programs in the design, operation, and maintenance of industrial facilities. Drawing on clear definitions, real-world examples, historical context, and case studies, the book explains how process safety management (PSM) principles can be applied across the process and energy industries. A successor to Sutton's earlier work Process Risk and Reliability Management, this volume reflects current industry practice and incorporates new developments in regulations, technology, and operational risk management. Across twenty-one chapters, it addresses the core elements of process safety, including hazards analysis, incident investigation, operating procedures, training, and audits. The discussion highlights how process safety improves not only safety performance but also operational integrity, equipment reliability, and system availability. The book reviews major process safety regulations and standards and outlines proposed updates by agencies such as OSHA and the EPA. It also considers emerging topics, including the role of generative AI in PSM and the implications of net-zero initiatives for process safety programs and sustainable operations. Process Safety Management is intended for graduate students in chemical, industrial, and process engineering, as well as for practicing engineers in design firms, consultancies, and operating companies. It also serves as a reference for professionals in regulatory organizations such as the CSB, OSHA, API, NFPA, and the US EPA who evaluate or oversee industrial safety programs.

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