

The Business Case For PROCESS SAFETY

2ND EDITION

CORPORATE
RESPONSIBILITY

BUSINESS
FLEXIBILITY

RISK
REDUCTION

SUSTAINED
VALUE



THE CENTER FOR CHEMICAL PROCESS SAFETY

SINCE 1985, The Center for Chemical Process Safety (CCPS) has helped manufacturers, insurers, government, academia, and consultants work together to improve manufacturing process safety.

CCPS and its sponsors are committed to protecting employees, communities, and the environment by developing engineering and management practices to prevent or mitigate catastrophic releases of chemicals, hydrocarbons, and other hazardous materials.



CENTER FOR CHEMICAL PROCESS SAFETY AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

3 Park Ave, New York, N.Y., 10016-5991, U.S.A.

TEL: (212) 591-7319 • Fax: (212) 591-8883

E-mail: ccps@aiiche.org • www.ccpsonline.org

Copyright © 2006
Center for Chemical Process Safety of the
American Institute of Chemical Engineers
3 Park Avenue
New York, New York 10016-5991

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior permission of the copyright owner. AIChE™ and CCPS® are trademarks owned by the American Institute of Chemical Engineers. These trademarks may not be used without the prior express written consent of the American Institute of Chemical Engineers. The use of this product in whole or in part for commercial use is prohibited without prior express written consent of the American Institute of Chemical Engineers. To obtain appropriate license and permission for such use contact the Center for Chemical Process Safety at 212-591-7319 or ccps@aiiche.org.

Library of Congress Cataloging-in-Publication Data

The business case for process safety : corporate responsibility, business flexibility, risk reduction, sustained value / The Center for Chemical Process Safety.

p. cm.

ISBN 0-8169-1026-X (pbk.)

1. Chemical industry—United States—Safety measures. I. American Institute of Chemical Engineers. Center for Chemical Process Safety.
II. Title.

TP149.B92 2003

660'.2804'0973—dc21

2003006465

It is sincerely hoped that the information presented in this document will lead to an even more impressive safety record for the entire industry; however, neither the American Institute of Chemical Engineers, its consultants, CCPS Technical Steering Committee and Subcommittee members, their employers, their employers' officers and directors, warrant or represent, expressly or by implication, the correctness or accuracy of the content of the information presented in this document. As between (1) American Institute of Chemical Engineers, its consultants, CCPS Technical Steering Committee and Subcommittee members, their employers, and their employers' officers and directors, and (2) the user of this document, the user accepts any legal liability or responsibility whatsoever for the consequence of its use or misuse.

THE BUSINESS CASE FOR PROCESS SAFETY

WHAT SEPARATES THE TOP-PERFORMING COMPANIES IN OUR INDUSTRY FROM THE REST?

One essential characteristic CCPS member companies display is that they have adopted a rigorous philosophy regarding process safety. This summary of a recent industry-wide study identifies four ways that your business will benefit from implementing a robust process safety program. Process safety is an essential part of achieving manufacturing excellence and increasing profitability and shareholder value no matter the size of the enterprise.

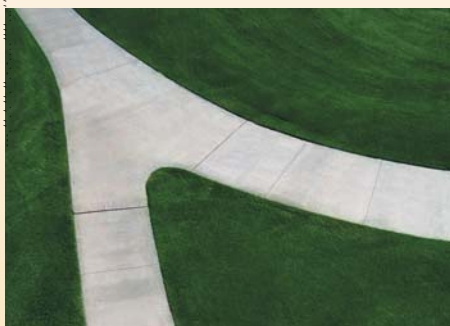
We have seen process safety benefit our business in ways we had not anticipated. We need to share this message with others.

ARNOLD ALLEMANG

*Vice President – Operations
The Dow Chemical Company*



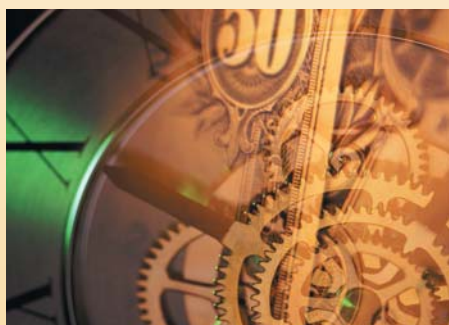
Corporate Responsibility



Business Flexibility



Risk Reduction



Sustained Value



THE BENEFITS OF PROCESS SAFETY

THIS BENCHMARK STUDY of CCPS member companies, combined with data from other sources, provides conclusive evidence that methodically implementing process safety provides four benefits essential to any healthy business. Two of these benefits are qualitative and as a result are somewhat subjective. You can see them in the way the public, your shareholders, government bodies, and your customers relate to your company. The two remaining benefits are quantitative. These have measurable impact in terms of your bottom line and company performance. All four benefits, when realized together by adhering to a sound process safety system, combine to support the profitability, safety performance, quality, and environmental responsibility of your business.

■ TWO QUALITATIVE BENEFITS

Corporate Responsibility

Process safety helps your company display corporate responsibility through its actions. The heart of process safety lies in consistently planning to do the right things, then doing them right — consistently. Corporate responsibility leads to the second benefit...

Business Flexibility

Corporate responsibility as demonstrated in your process safety management program leads to a greater range of business flexibility. When you openly display responsibility through implementing an effective process safety program, your company can achieve greater freedom and self-determination.

■ TWO QUANTITATIVE BENEFITS

Risk Reduction

A healthy process safety program significantly reduces the risk of catastrophic events and helps prevent the likelihood of human injury, environmental damage, and associated costs that arise from incidents. Although the essence of process safety focuses on preventing catastrophic incidents, the number of less severe incidents is also reduced.

Sustained Value

Process safety relates directly to enhanced shareholder value. When properly implemented, it helps ensure reliable processes that can produce high quality products, on time, and at lower cost. These improvements allow the enterprises that make them to sustain value creation over time.

*My colleagues
and I on the
CCPS advisory
board initiated*



this project when we sensed a need for a convincing business case that supports a vigorous approach to process safety. The four benefits identified in the project's resulting study are very broad in scope. Their effects reach far beyond the realm of financial considerations. The combined benefits promote global manufacturing's long-term growth and success in several ways. Process safety is a fundamental tenet of every successful chemical processing company's operating philosophy. I have seen it benefit our business in ways we had not anticipated. We need to share this message with others—especially smaller chemical manufacturers and the companies that use and distribute our industry's products.

ARNOLD ALLEMANG
Vice President – Operations
The Dow Chemical Company

WHAT IS PROCESS SAFETY?

PROCESS SAFETY is a management system implemented to prevent major incidents involving hazardous materials. It is necessary for managing complex chemical operations. A process safety management system focuses on three important aspects of your business:

TECHNOLOGY

This component includes developing accurate process safety information about your equipment and technology, performing process hazard analyses, developing operating procedures and safe work practices, and then managing changes as they arise. It also includes designing manufacturing processes that are inherently safer from their conception.

FACILITIES

This aspect focuses on the mechanical integrity of your plant's equipment and the software that controls it. It includes preventive maintenance programs, performing pre-startup safety reviews, and aligns with management of change to help ensure continuous safe operation. Good design and maintenance along with periodic safety reviews protect your company's means of production.

PERSONNEL

Involving your employees in building and maintaining your process safety program is the best way to communicate its ongoing importance throughout the organization. Other process safety elements involving personnel include training employees in process hazards and their job tasks, managing contractors properly, investigating incidents to understand their root causes, implementing actions to prevent recurrence, preparing for emergencies, planning effective response, and self-auditing to gauge performance and to identify opportunities for improvement in all three aspects of process safety.

Understanding the skills and knowledge required for a job when making changes in work assignments will help reduce errors and improve safe performance.

The personnel aspect of process safety leads companies to minimize turnover of key personnel at all levels and maximize corporate memory of experiences, best practices, and industry lessons

The nature of our business is one that requires a high level of managerial, technical and operational discipline. The discipline practiced when implementing and maintaining a healthy process safety program easily translates to other business areas and helps address other business risks.



If I had to pick one business issue within the last

12 years that has benefited our company most, I would say it was the advent of process safety. It not only helps prevent incidents and reduce their consequences, it also provides fundamental methods for managing our business. It gives us valuable guidance for operating our health, environmental, and safety programs more effectively and provides structured systems, such as management of change, which we apply in all aspects of our business.

STEVE KEMP

Vice President – Health, Environment
and Safety
Occidental Chemical Corporation



Documents
Document Sharing Hub