

BoSC Update

Business of Safety Committee (BoSC)

Volume 2, Number 2

Update: Sarbanes-Oxley Act



In this interview, Mark Hansen, Vice President, Environmental and Safety, for Range Resources Corporation, provides an update on the Sarbanes-Oxley (SOX) Act of 2002, discusses its impact on environmental liability disclosure and explains how SH&E professionals can best incorporate the SOX Act into their safety practices.

Please provide a brief description of your professional background and of your position as Vice President, Environmental and Safety, for Range Resources Corporation.

Range Resources is an independent oil and gas company operating in the Southwestern, Mid-Continent, Appalachian, Marcellus and Gulf Coast regions of the U.S. As Vice President, Environmental and Safety, I direct, oversee and manage SH&E strategies, plans, programs and initiatives. My staff includes four direct reports and many indirect reports.

The SOX Act sets new or enhanced standards for all U.S. public company boards, management and public accounting firms. The law establishes records retention requirements for audit papers and creates an oversight board for accounting firms that audit publicly traded companies. It also addresses:

- ***Auditor independence***
- ***Corporate responsibility at publicly traded companies***
- ***Financial disclosures of publicly traded companies***
- ***Conflicts of interests of financial analysts***

What provisions does the SOX Act include for environmental liability disclosure?

BoSC Update is published triannually by the American Society of Safety Engineers' (ASSE) Council on Practices & Standards (CoPS).

Tim Fisher Director, Practices & Standards
Rennie Heath Manager, Practice Specialties
Jolinda Cappello Editor, *BoSC Update*

For information on submitting content to *BoSC Update*,
e-mail jcappello@asse.org.



Business of Safety Committee (BoSC)
American Society of Safety Engineers (ASSE)
1800 E. Oakton St.
Des Plaines, IL 60018
<http://www.asse.org>

Environmental disclosures include material items, such as:

- a. Remediation projects that can affect air, water and waste regulatory restrictions
- b. Internal audit discrepancies
- c. Due diligence discoveries as a result of joint ventures, sales and property acquisitions
- d. Regulatory action by state and federal agencies
- e. Regulatory citations, fines, penalties and prohibitions

Three sections of Regulation S-K (which provides the disclosure requirements for periodic reports filed with the U.S. Securities and Exchange Commission (SEC)) require the disclosure of environmental liabilities: Item 101, relating to the description of a company's business; Item 103, relating to disclosure of legal proceedings and Item 303, relating to management's discussion and analysis of financial condition and results of operations.

In addition, SEC and other accounting authorities have published bulletins and statements regarding the assessment and disclosure of environmental liabilities, including:

Statement of Financial Accounting Standards No. 5: addresses accounting and reporting of loss contingencies, such as site cleanup or remediation;

SEC Staff Accounting Bulletin 92: uses a question-and-answer format and provides guidance regarding accounting and disclosure obligations for contingent environmental liabilities;

American Institute of Certified Public Accountants Statement of Position 96-1: provides guidance with

In This Issue:

Update: Sarbanes-Oxley Act	1
Message from CoPS Vice President	2
Economic Decision-Making in a Safety Context	7
CSR/Sustainability & Safety: The Link	10
White Paper: ROI for Safety Management Programs	11

Body of Knowledge a Valuable Resource



I recently had the privilege of speaking before ASSE's 2009 Leadership Conference held in Lombard, IL. I was impressed by ASSE Chapters' participation and by their interest in Practice Specialties. Chapters and Practice Specialties complement each other because they both reflect the multifaceted makeup of the SH&E profession.

I stressed the Council on Practices and Standards' (CoPS) strategic mission, which is to maintain and add to the Society's Body of Knowledge. As CoPS Vice President, I see this as managing our technical brain trust. For example, the 16 Practice Specialties that represent the Council publish nearly 50 newsletters per year with original articles on topics of interest and importance to ASSE members. Each publication is a further contribution to the Body of Knowledge.

Sometimes a Body of Knowledge is thought of as a repository of documents that pertain to a particular profession. The Society's Body of Knowledge is the foundation of the work we do. It builds on our knowledge and proficiency and serves as a knowledge base that guides our conduct and sets the standards we live up to. Our Body of Knowledge is something more special and personal—it is you, our members. Our membership makes the Body of Knowledge work.

I assure you that each of those developmental leaders at the Leadership Conference has at their finger tips Body of Knowledge resources to help them do their jobs, and to do their jobs better. ■

respect to the recognition, measurement, display and disclosure of environmental liabilities, including benchmarks for making materiality determinations at various stages of assessment and remediation.

Environmental liability assessments and disclosures are now subject to unprecedented scrutiny. At the same time, the SOX Act increases the personal accountability of corporate officers and directors for inaccurate or misleading disclosures.

Among its many provisions, the SOX Act:

- Establishes new certification, attestation, internal control and disclosure control requirements, as well as increased penalties and statutes of limitations for violations of these and other securities laws.
- Creates new sanctions for CEOs and CFOs, including the possible disgorgement of bonuses and income from equity-based incentives in connection with certain financial restatements, gives SEC the ability to “freeze” an executive's compensation under certain circumstances and increases SEC's powers to bar persons from future service as officers or directors of public companies.
- Establishes new requirements for codes of ethics, codes of conduct or codes of corporate responsibility.
- Enhances protections for corporate whistleblowers, including requiring procedures for whistleblowers to report directly to the audit committee, increasing penalties for taking action against whistleblowers and increasing civil and criminal protections for whistleblowers.
- Imposes significant monetary and criminal penalties for fraudulently influencing, coercing, manipulating or misleading an accountant engaged in an audit to render a company's financial statements financially misleading.

In the time since the SOX Act took effect, has environmental reporting improved among public companies?

It is difficult to definitively say yes or no, but it appears that environmental disclosures have increased. This is evidenced with banks conducting environmental due diligence prior to loaning companies funds for acquisitions and the like. It is also evidenced in areas, such as corporate social responsibility, sustainability and carbon disclosure and other nongovernmental organization pressures.

How do you suggest companies adjust or revise their environmental management systems under the SOX Act?

SH&E professionals should review their environmental management systems, specifically to address corporate governance. For example:

a. Top Management Involvement. Studies of SH&E programs unanimously conclude that effective SH&E performance “starts at the top.” Informed, involved and committed top management is critical to effective SH&E performance.

b. Defined Roles & Responsibilities. SH&E programs are only effective when there is ownership. This only happens when roles and responsibilities for SH&E performance are clearly defined and individual performance reviews include an evaluation of how well SH&E responsibilities have been met.

c. Appropriate & Consistent Metrics. It is impossible to proactively manage processes if you do not know where you are, where you are going or how far along you are toward meeting your goals. The development and ongoing monitoring of clear, concise and relevant performance metrics is critical to effective SH&E performance. For organizations with multiple business units, it is also critical that these metrics provide consistent data reporting to support sound decision-making.

d. Impartial Evaluations by Competent Assessors. Human nature being what it is, it is difficult for those who are involved in implementing and maintaining systems to provide an impartial evaluation of the system's performance. In addition, system audits require competent auditors.

e. Effective Communication. Management requires timely and effective communication. Responsibilities will be unfulfilled if they are not communicated. Metrics are meaningless unless they are available when decisions must be made. Evaluation serves no purpose unless it drives system improvements.

f. Availability of Required Resources. Good intentions are wonderful, but safety initiatives and environmental protection requires resources—money, manpower and corporate support.

g. Consideration of Sustainability and Social Responsibility. In today's global marketplace, country-specific laws and regulations can no longer be the exclusive focus of SH&E programs. Laws will never address all aspects of what is fair, ethical and consistent with company values. Rather than ignoring questions of ethics and values, companies must confront these questions directly and proactively.

The above list is excerpted with permission from ENLAR Compliance Services, Inc. (<http://iso14000expert.com/sarbanes-oxley.html>).

How are SH&E hazards and exposures disclosed under the SOX Act? Since the SOX Act places greater scrutiny on CEOs, CFOs and board of director members, how can SH&E professionals best communicate hazards and exposures to senior management?

By providing a regular (monthly, quarterly, etc.) status verbally and in writing. The “no surprises” methodology works well for environmental issues. Keep abreast of emerging regulations, such as greenhouse gas emissions, nonattainment area concerns and evolving state requirements, and keep senior management informed to avoid any surprises. Direct communication with board members may also be appropriate depending on the circumstances.

How can SH&E professionals at public companies best incorporate the SOX Act into their safety practices to protect their employers and employees?

SH&E professionals at public companies may need to implement new procedures and policies to safeguard their employers, employees, colleagues and themselves. From the perspective of ASSE's Council on Practices and Standards, the following is suggested:

1. Obtain a copy of this law, as well as background materials about it, and discuss it with senior management and legal counsel so that all parties are aware of what is expected. A legal opinion written by corporate counsel would also be a prudent action to take.
2. Write and publish a policy addressing SH&E disclosure in regard to how it fits in with the SOX Act.
3. Write, implement and document communication structures detailing how information is passed up the communication chain to senior management.
4. Conduct thorough assessments to identify significant SH&E exposures and the means used to communicate them to those in a position of authority.
5. Ensure that SH&E audits are independent and that the results are reported and acted upon. Those SH&E practitioners who author/sign those audit reports and who fail to follow up on the recommended actions may be subject to sanctions such as listed under the new law. They now have a duty that goes beyond just informing management.
6. Follow the ASSE Code of Conduct.

How can management system standards, such as “Occupational Health and Safety Management Systems” (ANSI/AIHA Z10-2005), help companies comply with the SOX Act?

Management systems provide a standardized approach, which focuses on repeatability, accountabilities and

measures. This fits hand-in-glove with SOX requirements for controls and procedures.

You can establish environmental financial controls by:

- Defining environmental responsibilities and internal communication processes
- Establishing procedures for identifying legal requirements and evaluating compliance
- Establishing processes for identifying and quantifying environmental risks
- Monitoring stakeholder interests and establishing public communication mechanisms

Why is corporate governance with an emphasis on environmental health and safety so critical in the current unstable economy?

Governance is a new focus for businesses today. In response to a wave of corporate scandals, new laws, such as SOX, and new nongovernmental initiatives, such as ISO 26000, have been or are being developed to encourage companies to do the right thing. This is a complex area with the potential for substantial impacts for environmental, health and safety programs.

Environmental health and safety issues can substantially impact a company's financial performance. Companies that have failed to manage SH&E issues have incurred multimillion-dollar cleanup liabilities, faced significant erosion of their business reputation or gone bankrupt when they failed to anticipate the importance of an emerging issue, such as the potential carcinogenicity of a key ingredient in their product.

Four drivers have focused increased attention on corporate governance:

Corporate Accountability Laws. Laws, such as SOX, focus new attention on the internal controls companies have in place to ensure sound fiscal management and accurate financial reporting.

Trade Globalization. The development of a global marketplace means companies must be concerned about regulatory requirements wherever they plan to market their products. This makes environmental regulations, such as the European Union's Waste Electrical and Electronic Equipment and Restriction of Hazardous Substances directives, important throughout the global business chain.

Reputational Risk. A 2004 survey of World Economic Forum members found that more than half of the survey respondents estimated that corporate brand or reputation represents more than 40% of a company's market capitalization. Given the public interest in environmental issues, negative environmental publicity impacting a company's reputation is a significant corporate concern.

Expanding Potential Liability. Increasingly, laws and standards are shifting from "buyer beware" to a focus on minimizing a product's potentially harmful environmental and safety impacts throughout all aspects of its lifecycle. This has led to an increased focus on those entities along the product distribution chain that have the ability or means to prevent potential harmful impacts. With a global marketplace, this also means that ignoring safety and environmental issues may create significant worldwide liability.

How has the SOX Act impacted the SH&E auditing process?

It has raised the visibility from the business unit to the boardroom. Now questions from directors and board members have more gravity than they had in the past. Further, not responding to them can dramatically impact SH&E and operations management.

SH&E auditors' role and the information they assess are currently undergoing a sea change. Traditionally, SH&E auditors have assessed company-specific information using company-specific metrics for use by an internal audience within the company. Recent developments, such as the passage of SOX and increased adoption of the Global Reporting Initiative, are broadening the scope of both information collection and modes of data delivery, as well as the audience.

SH&E professionals addressed this dynamic earlier this year in Philadelphia, PA at the annual Auditing Roundtable conference titled "The Role and Practice of SH&E Auditing in a New Era of Corporate Governance and Management Systems." The Board of Environmental, Health and Safety Auditor Certifications (BEAC) oversees SH&E auditing, which is a joint venture between the Auditing Roundtable and the Institute of Internal Auditors (IIA).

Historically, SH&E auditors have been charged with assessing SH&E information for purposes of compliance, due diligence, risk assessment and voluntary standards, such as ISO 14001, an environmental management certification.

The underlying purpose of these audits is expanding under SOX. SOX places greater emphasis on ensuring that disclosures are accurate and complete in all material aspects. SOX also requires that processes are in place to bring all relevant information to senior management's attention.

In other words, SH&E auditors have been moved from the backroom to the boardroom.

Roberto Jiménez, a director on the board of the Auditing Roundtable, says, "SH&E auditors are now asked to generate and submit information directly to the most senior management levels, including the CEO, CFO and the board of directors."

The revised SOX rules require two separate certifications by the CEO and CFO for each 10-K and 10-Q (and any amendments) filed with SEC under Sections 302 and 906 of SOX. Corporate officers face potential civil and criminal penalties for violations, so these officers are likely to have zero tolerance for surprises from SH&E audits.

A critical issue for auditors is the need for financial information that fairly presents the business position. Brian Carroll, special counsel at the SEC's Philadelphia district office, says, "SH&E professionals should know that their work may make its way to SEC based on conclusions about material risks that fairly impact the valuation of companies."

Information assessed in SH&E audits is now considered with a seriousness rivaling financial information. SH&E data collected and verified during internal audits is no longer held as tightly under the confines of privilege and confidentiality clauses. This increased transparency accentuates the importance of SH&E auditor independence.

Jeff Davidson, partner at Wilmer, Cutler, Pickering, Hale and Dorr, says, "Without independence, no matter how competently the audit is performed, the resulting report will be potentially compromised."

While financial audits and reporting in 10-Ks by publicly traded companies largely deal with historical information, SH&E auditors are involved in areas of SEC reporting that require significant estimation of contingent liabilities and future expenditures. Therefore, SH&E auditors are required to do a certain amount of crystal ball gazing, meaning they will need to be very crisp and articulate about how they audit.

The growing importance of SH&E auditing is a mixed blessing: increased responsibility brings with it increased accountability.

Paul Michalski, a partner at Cravath, Swaine and Moore, says, "While SH&E auditors are likely to play a more important and visible role, they are also likely to be held more accountable, with an insistence on verification of processes and a drive by executives to come to accurate hard numbers more quickly."

In what ways does the proposed ISO 26000 standard for social responsibility tie in with the SOX Act?

Social responsibility's mantra is, "Do no harm." A Boy Scouts of America goal is leave a campsite better than you found it; the same can be said for social responsibility. Also, in today's global marketplace, country-specific laws and regulations can no longer be SH&E programs' exclusive focus. Laws will never address all aspects of what is fair, ethical and consistent with company values. Rather than ignore questions of ethics and values, companies must confront these questions directly and proactively.

The International Organization for Standardization's (ISO) proposed international standard, ISO 26000, will provide guidelines for such concerns as social responsibility.

ISO's goal is to involve a variety of stakeholder groups—industry, government, labor, consumers and nongovernmental organizations—in the development of a guidance document to assist organizations in acting in a socially responsible way.

BoSC Online Resources

- [Articles](#)
- [Interviews](#)
- [Presentations](#)
- [Government resource](#)
- [Formal studies & research](#)

To contribute to BoSC's BoSC Online Resources, contact jcappello@asse.org.

Why is it important for SH&E professionals to provide an annual SH&E report to their company officers? What elements should this report include?

Annual reports allow you to document the successes and challenges of the previous year and to plan for the upcoming challenges for the year ahead. In addition to informing all company business units of your overall impact and benefit to the company's bottom line, it is also a great marketing tool both internally and externally. Most importantly, it will be a document third-party auditors will evaluate to ensure accountability of company officers overseeing SH&E.

My own personal belief is that those who lack SH&E experience and knowledge will likely look for those who oversee SH&E at the corporate level. I believe this will come to fruition due to the attendant risks of incorrect reporting and severe accountability when found not in compliance in this area. If you oversee SH&E and do not thoroughly understand it, with the attendant risks, you will be compelled to make sure you have someone on the corporate staff who does. If you do not, you may risk paying the price for incorrect reporting.

Your annual report should include:

- Goals for the year, accomplishments, initiatives, budgets, success stories, performance awards, performance milestones, staffing, trends, etc.
- A summary of serious incidents, corrective actions taken and status
- A summary of all SH&E audits conducted throughout the year with corrective actions and status
- An environmental characterization of all properties owned or leased and bought or sold by the company and their status
- A benchmarking of your management system (or equivalent) across business units

While some say the SOX Act has helped make U.S. financial markets and corporate accounting procedures more transparent, others claim it has created a confusing regulatory environment. What are your thoughts on this debate?

Just like SH&E, if you embrace it, you can improve organizational efficiencies, and the culture will drive beneficial results. If you do not embrace it but view it as just another regulatory initiative that pains production, you will muddle and slow production. It can be used to enhance and improve the organization or it can become an albatross that weighs on profits. It all depends on how it is integrated into the overall organization. Is it seamless or just another government requirement? ■

Mark Hansen

Mark Hansen, P.E., is Vice President, Environmental and Safety, for Range Resources Corporation in Fort Worth, TX. He has more than 26 years' experience in the field and holds certifications in safety and ergonomics.

He has authored more than 100 technical publications, including the book, *Out of the Box: Skills for Developing Your Own Career Path*. Two other books, *Getting to the Corner Office* and *Software Safety: The Last Frontier*, are in development.

Hansen is a past recipient of ASSE's Edgar Queeny Monsanto Safety Professional of the Year Award (1992-1993) and the Charles V. Culbertson Outstanding Volunteer Service Award (1991-1992). He is also an ASSE Fellow and past president.

He holds a B.S. in psychology and an M.S. in industrial engineering, specializing in safety, both from Texas A&M University.

Time to Upgrade Your Fall Protection Code! Version 2.0 is Here!

Version 2.0 includes 3 new standards:

- Specifications & Design Requirements for Active Fall Protection Systems (Z359.6-2009)
- Connecting Components for Personal Fall Arrest Systems (Z359.12-2009)
- Personal Energy Absorbers & Energy-Absorbing Lanyards (Z359.13-2009)

To order, click [here](#).



Economic Decision-Making in a Safety Context

By Joel M. Haight, Ph.D., P.E.

The following engineering economic case study is real. It involved making a decision about how to safely manage and store methanol, a chemical defined as toxic by the government of the country in which the facility exists. The example has been extracted from ASSE's *Safety Professionals Handbook* where more detail on engineering economics can be found. Several chapters in that book address cash flow and budget analysis.

As a professor at Penn State University, the author used this and similar examples in the classroom for two purposes; the first, to provide education and practice in understanding the economic implications of safety and the second, to illustrate the sometimes difficult conflict between humanitarian objectives and business objectives. In this example where a decision must be made to either build a new methanol handling facility or to upgrade the existing one, on the surface, the build-new option appears to be best from a humanitarian point of view (fewer leaks, lower probability of access by local people trying to steal the methanol and thus being exposed to the toxicity). However, the business objectives are better satisfied by the upgrade option (the net present worth comparison favors the upgrade option).

Students from many of the engineering disciplines enrolled in the course in which this material was taught. Results of the students' decision-making over the nearly ten years that the example has been used are interesting. In a sampling of about 100 students over that ten-semester period, the safety engineering students rejected the appropriate business decision for the humanitarian decision (meaning they chose the build-new option over the upgrade option, even though the upgrade option had a higher net present worth), and more than 95% of the students from all the other engineering disciplines chose the correct answer (the problem was written to ask the students to determine the better business decision). Incidentally, as long as the students did the net present worth calculations correctly and then justified their decision (humanitarian or business), they received full credit.

The author does not know what the results of this apparent discipline-influenced decision dichotomy means (it was only one classroom over a nine-year period), but it raises interesting questions. Is the correct or best business decision one that favors the humanitarian in all of us (protect our fellow man) or is it one that favors the lowest cost, most revenue, etc.? Or is the best decision an optimized solution somewhere in between the two options? Are safety people trained

to make optimization decisions? ASSE's Business of Safety Committee may help in answering these questions.

Example

The example will be the determination of the cash flow for each of two projects in which a decision will be made to develop a new project or to invest in the upgrade or improvement of an existing facility. A comparison will be made by converting cash flows for each project to a net present worth (also referred to as net present value).

The decision to upgrade an existing methanol (MeOH) storage facility (defender) or to design and install a new methanol storage facility (challenger) is both a safety and an economic decision. The example below shows one method for making this decision.

Some crude oils are difficult to keep flowing in temperatures below zero. Hydrate salts can precipitate out of the liquid phase as the oil gets further from the well and cools. These salts create a dangerous condition as they form plugs in the line. This traps high pressure and creates a condition that results in a projectile being rocketed down the pipeline as one of the hydrate plugs dislodges and releases the trapped pressure behind it. There is a risk of pipeline damage, potential physical injury, exposure to hydrocarbon and environmental damage.

A method for preventing this trapped pressure condition is to inject methanol (MeOH) into the oil stream. This keeps the hydrate salts from precipitating out and thus keeps the line from plugging. The present methanol storage and loading facility is manually controlled, with no fire protection and deteriorating tanks.

Methanol leaks occur frequently. The scope of repairs and upgrades to this system is extensive. The storage tanks are rusting and leaking at the riveted joints. The manual level-control system allows frequent overfills. There is no firewater available at this site, and MeOH is flammable. The present system has been in service for 5 years.

Due to permit requirements, upgrades are required to achieve minimum acceptable environmental and safety standards. Upgrades costing \$134,000 will extend the system's life for five more years. However, upgrades will not completely stop the leaks. The expected leak losses will amount to \$5,000/year, and the cleanup costs will be another \$5,000/year. The annual

operating costs for this upgraded facility are expected to be \$36,000, and maintenance costs are expected to be \$24,000/year. Revenues generated would be realized from operational savings. Savings are due to reduced risk and reduced compliance costs. The amounts would be:

- Year 1 = \$158,000
- Year 2 = \$160,000
- Year 3 = \$140,000
- Year 4 = \$137,000
- Year 5 = \$126,000

A project design team has proposed a new design with input from a safety analysis team. The design meets all acceptable environmental and industry standards and practices, including appropriate fire protection and level control system.

The new facility, which requires an investment of \$325,000, would last 5 years before a major upgrade would be required. However, it is believed that oil transfer technology will be developed to the point that methanol becomes obsolete (pipeline heating systems and insulation material). Management does not expect any spill cleanup costs, however, they would like a \$5,000/year contingency set aside for education

of the community (on MeOH safety), possible cleanup, possible evacuation, etc. just in case.

The annual operating and maintenance costs would be \$12,000 and \$6,000 respectively. For this new system, revenues generated would be realized from operational savings. The savings are due to reduced risk and reduced compliance costs. The amounts would be:

- Year 1 = \$180,000
- Year 2 = \$170,000
- Year 3 = \$160,000
- Year 4 = \$150,000
- Year 5 = \$140,000

Even though a methanol system will be obsolete, some of the parts in this system could be salvaged at the end of five years. The parts should be worth \$10,000. If this company's minimum acceptable rate of return is 15%, its tax rate is 40% and the depreciation class for each system is 5-year class MACRS, should this company upgrade the old facility or build a new one?

Table 1. Net Present-Worth Analysis—Cash Flow Statement—Defender (Existing System).

Income Statement (5 year MACRS Depreciation) →	0	1 (20%)	2 (32%)	3 (19.2%)	4 (11.52%)	5 (11.52%)
Revenue						
Savings, Reduced Risk		\$158,000	\$160,000	\$140,000	\$137,000	\$126,000
Expenses						
• Operating costs		\$36,000	\$36,000	\$36,000	\$36,000	\$36,000
• Maintenance costs		\$24,000	\$24,000	\$24,000	\$24,000	\$24,000
• Materials (losses)		\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
• Spill clean up		\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
• Depreciation		\$26,800	\$42,880	\$25,728	\$15,436	\$15,436
Taxable Income		\$61,200	\$47,120	\$44,272	\$51,564	\$40,564
• Income Tax (40%)		\$24,480	\$18,848	\$17,709	\$20,625	\$16,225
• Net Income		\$36,720	\$28,272	\$26,563	\$30,938	\$24,339

Cash Flow Statement	0	1	2	3	4	5
Operating Activities						
• Net Income (A)		\$36,720	\$28,272	\$26,563	\$30,938	\$24,339
• Depreciation (B)		\$26,800	\$42,880	\$25,728	\$15,436	\$15,436
Investment Activity						
• Investment (I)	(\$134,000)					
• Salvage (S)						\$0
Net Cash Flow (A + B - S)		\$63,520	\$71,152	\$52,292	\$46,374	\$39,775

$$NPW = I + F_1(1+i)^{-1} + F_2(1+i)^{-2} + F_3(1+i)^{-3} + F_4(1+i)^{-4} + F_5(1+i)^{-5}$$

$$NPW = -\$134000 + \$63520(1+0.15)^{-1} + \$71152(1+0.15)^{-2} + \$52292(1+0.15)^{-3} + \$46374(1+0.15)^{-4} + \$39775(1+0.15)^{-5}$$

$$NPW = -\$134000 + \$63520(0.8696) + \$71152(0.7514) + \$52292(0.6575) + \$46374(0.5717) + \$39775(0.4971)$$

$$NPW = -\$134,000 + \$55,236 + \$53,463 + \$34,381 + \$26,512 + \$19,772$$

$$NPW = \$55,364$$

Where F_n = Net cash flow in year n.
 i = interest rate
 N = compounding period (year 1, $N=1$, year 2, $N=2$, ..., year n, $N=n$)

Table 2. Net Present-Worth Analysis—Cash Flow Statement—Challenger (New System).

Income Statement (5 year MACRS Depreciation)	0	1 (20%)	2 (32%)	3 (19.2%)	4 (11.52%)	5 (11.52%)
Revenue						
Savings, Reduced Risk		\$180,000	\$170,000	\$160,000	\$150,000	\$140,000
Expenses						
• Operating costs		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
• Maintenance costs		\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
• Materials (losses)		\$0	\$0	\$0	\$0	\$0
• Spill cleanup (contingency)		\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
• Depreciation		\$65,000	\$104,000	\$62,400	\$37,440	\$37,440
Taxable Income		\$92,000	\$43,000	\$74,600	\$89,560	\$79,560
Income Tax		\$36,800	\$17,200	\$29,840	\$35,824	\$31,824
Net Income		\$55,200	\$25,800	\$44,760	\$53,736	\$47,736

Cash Flow Statement	0	1	2	3	4	5
Operating Activities						
• Net Income (A)		\$55,200	\$25,800	\$44,760	\$53,736	\$47,736
• Depreciation (B)		\$65,000	\$104,000	\$62,400	\$37,440	\$37,440
Investment Activity						
• Investment (I)	(\$325,000)					
• Salvage (S)						\$10,000
Net Cash Flow (A + B + S)		\$120,200	\$129,800	\$107,160	\$91,296	\$95,176

$$NPW = I + F_1(1+i)^{-1} + F_2(1+i)^{-2} + F_3(1+i)^{-3} + F_4(1+i)^{-4} + F_5(1+i)^{-5}$$

$$NPW = -\$325,000 + \$120,200(1+0.15)^{-1} + \$129,800(1+0.15)^{-2} + \$107,160(1+0.15)^{-3} + \$91,296(1+0.15)^{-4} + \$95,176(1+0.15)^{-5}$$

$$NPW = -\$325,000 + \$120,200(0.8696) + \$129,800(0.7514) + \$107,160(0.6575) + \$91,296(0.5717) + \$95,176(0.4971)$$

$$NPW = -\$325,000 + \$104,525 + \$98,146 + \$70,457 + \$52,193 + \$47,311$$

$$NPW = \$47,636$$

Final Result & Decision

With a higher Net Present Worth, one should choose the Defender. Its net present worth is \$55,364 versus the Net Present Worth of the Challenger of \$47,636.

Reference

Haight, J.M. (2008). *The Safety Professionals Handbook, Applied Science and Engineering—Managing Safety Engineering Work, 1st edition*. Des Plaines, IL: ASSE.

The Safety Professionals Handbook

The Safety Professionals Handbook, contains two volumes, Management Applications and Technical Applications, which are available individually for \$105 or as a set for \$189 from ASSE.

To order, contact ASSE Customer Service at (847) 699-2929 or visit <http://www.asse.org/sphandbook/>.

■ Joel M. Haight

Joel M. Haight, Ph.D., P.E., recently became chief of the Mining Injury Prevention Branch at NIOSH's Pittsburgh Research Center. For the nearly 10 years before this, he was an associate professor of energy and mineral engineering at Pennsylvania State University. Before joining Penn State, he was a manager and an environmental and safety engineer for Chevron Corp. He is a professional member of ASSE's Central Pennsylvania Chapter and a member of AIHA and the Human Factors and Ergonomics Society.

Haight's master's and doctorate degrees, both from Auburn University, are in industrial and system engineering.

CSR/Sustainability & Safety: The Link

By James Boretti, CSP

On July 16, 2009, Wal-Mart, the world's largest retailer with more than 4,253 retail outlets, approximately 2,100,000 employees and \$406 billion in revenue in 2008, announced that it was developing a worldwide sustainable product index. In a company press release, Wal-Mart describes reasons for taking this action, including, among other things:

- The world's natural resources are decreasing
- Consumers want to know that the materials in the product are safe
- Consumers want to know that the product was produced in a responsible way

The goal is "we can create a new retail standard for the 21st century."

Why is this significant for SH&E professionals? In short, because it is another example of the link between the efforts we make in SH&E and business success. Imagine that you work for a company that produces a product that depends on its success being placed in Wal-Mart's stores (more than 100,000 product companies supply to Wal-Mart). The way a product is produced is no longer based on economies of scale; it must consider the following four factors:

1. Energy and climate.
2. Natural resources.
3. Material efficiency.
4. People and community.

Wal-Mart is not the only game in town to influence business trends, and the company has had its share of questions regarding its own practices. However, the company is a significant force in dictating direction. And corporate social responsibility (CSR)/sustainability is here to stay. Financial scandals, greater concern about the environment, market-place directives that ban certain substances to protect people, license to operate, etc. all contribute to the complexity of why CSR/sustainability is here to stay.

The challenge is how do we as SH&E professionals address CSR/sustainability so that it is meaningful to our organizations? First, look at the four major factors used in the Wal-Mart Sustainable Product Index. It summarizes the issues applied by most sustainable metrics and reflects the world in which we practice.

Second, realize that SH&E professionals offer a unique set of skills that, if applied correctly, are unmatched in helping organizations become socially responsible.

Third, SH&E is a field that has long tried to position itself as business-contributing and not as a necessary expense only for compliance.

ISHN's Pulse of the Profession Survey indicates that many SH&E professionals are increasing their involvement in CSR and environmental sustainability initiatives in 2009.

How will you meet the challenges of CSR/sustainability and safety? These important safety considerations are tied to business issues, and the link between the two may best be summarized by the following statement:

"CSR is adapting the organization's practices to hold itself accountable for environmental and human right impacts of its activities."

It is a dream made for SH&E professionals. ■

James Boretti

James Boretti, CSP is president and founder of Boretti, Inc. He has more than 23 years of environmental, health and safety management and consultation experience.

References

Gunther, M. (2009, Jul. 13). Wal-Mart to become green umpire. *The Big Money*. Retrieved from <http://www.thebigmoney.com/articles/judgments/2009/07/13/wal-mart-become-green-umpire>.

Pricewaterhouse Coopers. (2008, Feb.). Going green: Sustainable growth strategies. Retrieved from http://www.pwc.com/en_GX/gx/technology/pdf/going-green.pdf.

Wal-Mart. (2009, Jul. 16). Wal-Mart announces sustainable product index. Retrieved from <http://walmartstores.com/factsnews/newsroom/9277.aspx>.

White Paper: ROI for SH&E Management Programs

By ASSE Council on Practices & Standards (CoPS)

This white paper was originally approved by ASSE's Board of Directors on June 8, 2002 and was reviewed/reaffirmed in June 2008.

CoPS plans to revise this white paper in 2010. The council welcomes any suggestions, statistics or other input ASSE members may have to update the white paper. Send your comments to jcappello@asse.org by December 1, 2009.

Disclaimer: CoPS is structured to provide balanced and sound assessment of matters related to the effectiveness and efficiency of the standards of practice in the SH&E profession. The Council consulted with many organizations, entities and governmental agencies while developing this white paper, however, it has not been reviewed for approval by any other entity than ASSE. The contents of this report, and its recommendations, do not represent the views of any other organization other than ASSE. The mention of trade names, companies or commercial products does not constitute any recommendation or endorsement for use.

The information and materials contained in this publication have been developed from sources believed to be reliable. However, ASSE accepts no legal responsibility for the correctness or completeness of this material or its application to specific factual situations. By publication of this paper, ASSE does not ensure that adherence to these recommendations will protect the safety or health of any persons or preserve property.

Summary

The implementation, maintenance and improvement of SH&E programs are of significant importance as the U.S. economy moves toward a more global perspective. Such programs positively impact all Americans and specifically those who work at all levels of the public and private sectors in technology development, manufacturing, training, financial analysis, personnel, academia as well as the final end user. An effective SH&E program not only benefits and protects the organizations implementing such a program, but also furthers the interests of the U.S. in a globally competitive environment.

ASSE knows from data and anecdotal information that investment in an SH&E program is a sound business strategy for any organization regardless of size and will lead to having a positive impact on the financial bottom line. ASSE calls on governmental agencies, such as Occupational Safety and Health Administration (OSHA), Mine Safety and Health

Administration (MSHA), Environmental Protection Agency (EPA), Consumer Product Safety Commission (CPSC), National Highway Traffic Safety Administration (NHTSA) and others, to do more to show that SH&E management is more than simple compliance. The private and public sectors should be encouraged to work together to show American business and industry that SH&E is not only required under the law, but should become and remain a core business strategy.

Introduction

The key question financial planners in business and industry ask SH&E professionals is, "Do safety and health management programs improve a company's bottom line?" The answer is a resounding yes, although benefits may be difficult to quantify. However, in addition to outright savings on workers' compensation benefit claims, civil liability damages (negligent or willful injury and wrongful death suits can be brought where contractors or worksite visitors may be involved, as well as under certain state laws (e.g., Maryland, West Virginia and Ohio)) and litigation expenses, having a solid safety and health management program with senior management commitment will improve productivity and employee morale. It can also make the difference between winning and losing bids and government contracts.

ASSE has taken the position that the days are over when companies can view safety and health violations as the status quo and consider SH&E violations and the attendant civil penalties as another "cost of doing business." Penalties have been increasing in dollar amount. In addition, knowing violations that result in the death or serious injury of a worker may be prosecuted at the state level under criminal laws or in a referral by a government agency to the U.S. Department of Justice.

The Hidden Costs of Failed Safety & Health Systems

Anyone who has had the misfortune of witnessing or handling the aftermath of a serious or fatal on-the-job injury knows that, without question, the costs go far beyond those that appear in a company's ledger book. For those who survive or who work with the accident or illness victim, the costs continue with psychological stress that may require years of counseling. Many times, co-workers who witness a serious event find themselves unable to return to the worksite for a significant period of time, which presents additional costs to the company through the abrupt loss of

skilled workers. A plant with a singularly bad reputation for safety and health may find itself unable to attract workers at all or may have to pay wages well above market value to do so. These are just a few of the hidden costs of a poor safety and health program.

As more information concerning a company's compliance and injury/illness experience becomes publicly available over the Internet and from federal agencies through Freedom of Information Act (FOIA) requests, foes of industrial growth may use this data to defeat permit applications or zoning change requests. Part of being a "good corporate citizen," rather than a company that no one wants in their backyard, is offering a safe and healthful work environment to the local residents.

Companies may also "externalize" costs associated with workplace injuries or illnesses to the detriment of their safety and health program management. If another organization (such as workers' compensation, social security, welfare or other insurance) pays the costs, corporate management may have a disincentive to control hazards. ASSE believes this is an excellent example of being "penny wise and pound foolish."

When insurance pays for the immediate costs of employee injuries, ultimately everyone pays either in the form of higher premiums, inability to obtain insurance completely or passed-through costs to consumers. Conversely, when fewer accidents occur, society saves as a whole. Fewer hospitals, medical professionals and rehabilitation facilities will be needed, and employee productive capacity will not be reduced as a result of occupational injury, disease and death.

Secretary of the Treasury, Paul O'Neill, who also served as the long-time chair of Alcoa Steel Corporation, believes that investment in SH&E is good for the economy, the country, the firm and its workers. Part of Alcoa's key business strategy included emphasis on occupational SH&E management. His belief is that investment in SH&E makes sound business sense and should be a cornerstone of an organization's goals and objectives. During his nomination, appointment and confirmation as Secretary of the Treasury, O'Neill consistently spoke in favor of ongoing investment in SH&E as a positive generator for organizations (based on O'Neill's May 10, 1999 speech to the Council for Excellence in Government titled "Excellence in Government: How Do We Get It?").

Statistics and examples to consider when reviewing the "economics of safety" include (from "Do You Know How Much Accidents are Really Cutting Your Business?" by Lee Smith, Colorado State University Health and Safety Consultation Program, 1996):

- Nearly 50 workers are injured every minute of the work week
- 17 workers die on the job each day
- Workplace injuries will cost society \$128 billion in losses this year, which equals one-quarter of each dollar of pre-tax corporate profits
- Indirect costs of injuries may be 20 times the direct costs. Indirect costs include training and compensating replacement workers; repairing damaged property; accident investigation and implementation of corrective action; scheduling delays and lost productivity; administrative expense; low employee morale and increased absenteeism; poor customer and community relations

SH&E Investment as a Core Business Strategy

In recent years, encouraging senior management commitment to safety and health program management has become a priority for federal and state agencies involved with safety regulation and enforcement. A survey of employers indicates that the top ten motivators for taking actions were:

1. Cost of workers' compensation insurance (59%).
2. Right thing to do (51%).
3. Increased profitability (33%).
4. Federal/state safety rules (31%).
5. Too many accidents (29%).
6. Employee morale (26%).
7. Productivity (23%).
8. OSHA fines (20%).
9. Employee concerns (5%).
10. Recommendations from outside experts (13%) (National Federation of Independent Business survey, June 1995).

Examples of Savings

Attributable to SH&E Programs

("Safety Management Programs Make Dollars and Sense" by Adele L. Abrams, *The Compass*, Winter 2001-2002)

- On August 29, 2001, Liberty Mutual Insurance Company released the report, "A Majority of U.S. Businesses Report Workplace Safety Delivers a Return on Investment." A Liberty Mutual survey indicates that 61% of executives say \$3 or more is saved for each \$1 invested in workplace safety.
- An SH&E director for an environmental services company in Massachusetts reported that its tracking data indicated \$8 saved for each dollar spent on a quality SH&E program.
- A coal mining company in Charleston, WV has attained a competitive advantage through investment in SH&E programs. The company claims its workers' compensation rate is \$1.28 per \$100 in payroll as opposed to its

competitor's rate of \$13.78.

- A fall protection program implementation reduced one employer's accident costs by 96% from \$4.25 to \$0.18 per person-hour.
- Implementation of an OSHA consultation program reduced losses at a forklift manufacturing operation from \$70,000 to \$7,000 per year.
- Participation in OSHA's Voluntary Protection Program (VPP) saved one company \$930,000 per year, and the company had 450 fewer lost-time injuries than its industry average.
- A Safety and Health Assessment and Research for Prevention Program (SHARP) participant reduced its lost workday incidence rate from 28.5 to 8.3 and reduced insurance claims from \$50,000 to \$4,000 through decreases in both direct and indirect losses through a reduction in its number of back and shoulder injuries.
- Implementation of an improved safety and health program reduced Servicemaster's workers' compensation costs by \$2.4 million over a two-year period.
- A manufacturer using a state consultation program reduced its workers' compensation modification rate from 1.7 to .999 and saved \$61,000 on its workers' compensation insurance premiums.
- OSHA VPP sites saved \$130 million in direct and indirect injury/illness costs in 1999.
- OSHA's Office of Regulatory Analysis states, "...our evidence suggests that companies that implement effective safety and health can expect reductions of 20% or greater in their injury and illness rates and a return of \$4 to \$6 for every \$1 invested."
- Susan Jervis and Terry R. Collins argue that a direct correlation exists between a company's performance in safety and its subsequent performance in productivity and financial results. Among the U.S. businesses listed in Forbes' 1999 Financial Rankings, ten of the most successful were OSHA VPP participants (*Professional Safety Journal*, September 2001).

Federal Programs

Established in 1982, OSHA VPP was restructured in 1996 and is still in effect. VPP emphasizes the importance of worksite safety and health programs in meeting the goals of the OSH

Act and provides official recognition of excellent safety and health programs, assistance to employers in their efforts and the benefits of a cooperative approach among labor, management and government to resolve potential safety and health problems. VPP recognition requires rigorous attention to workplace safety by all personnel. Sites are approved based on their written safety and health program and their overall performance in meeting the standards set by the program.

VPP is comprised of program elements that have been demonstrated to reduce the incidence and severity of workplace injuries and illnesses.

- The STAR program is the most highly selective program and is for applicants with occupational safety and health programs that are comprehensive and successful in reducing workplace hazards. Lost workday rates are 53% below national averages.
- The Merit level is for companies with good programs that are looking to improve and proceed to the STAR level. Lost workday rates are 35% below national averages.
- The Demonstration level is designed for contractors who meet the requirements as STAR-level companies but are not otherwise eligible for the STAR or Merit designations.

VPP participation is strictly voluntary, and OSHA keeps application information confidential. Participating employers must still comply with OSHA standards, but they are exempt from programmed OSHA inspections (although not from those prompted by employee complaints or triggered by fatalities, catastrophes or significant leaks and spills). OSHA claims the following return on investment (ROI) for companies participating in VPP (OSHA, Benefits of Participating in VPP, 2001):

- **Injury Incidence Rates:** In 1994, of the 178 companies in the program, 9 sites had no injuries at all. Overall, the sites had only 45% of the injuries expected or were 55% below the expected average for similar industries.
- **Lost Workday Injury Rates:** In 1994, of the 178 companies in the program, 31 had no lost workday injuries. Overall, the sites had only 49% of the lost workdays expected or were 51% below the expected average for similar industries.
- While protecting workers from occupational safety and health hazards, companies following the management guidelines mandated for VPP membership also experience decreased workers' compensation costs and lost worktime and often experience increased production and improved employee morale.

- The lost workday case rate at Thrall Car Manufacturing Company in Winder, GA decreased from 17.9 in 1989 when the facility began implementing a VPP quality safety and health program to 4.6 in 1992 when the plant was ready to qualify for the Star Program. In 1994, the rate was 0.6. From 1989, when the Winder, GA plant began implementing its programs to qualify for VPP, to 1992, workers' compensation costs dramatically declined by 85% from \$1,376,000 to \$204,000.
- At Monsanto Chemical Company's Pensacola, FL plant, lost workday case rates steadily declined during the period the worksite implemented effective safety and health programs and in the four years since VPP approval. The rates fell from 2.7 in 1986 to 0.1 in 1994.
- Mobil Chemical Company has brought its existing plants (plastics production and chemical plants) into VPP. OSHA reported that the company's recordable injuries were reduced by 32%, lost workday cases were reduced by 39% and case severity was reduced by 24%. Also, the company reduced its workers' compensation costs by 70%, or more than \$1.6 million, from 1983 to 1986, during the years it was qualifying its plants for the VPP. This reduction was sustained through 1993. Mobil Oil Company's Joliet, IL refinery experienced an 89% drop in its workers' compensation costs between 1987 and 1993.
- Occidental Chemical Company determined that as its safety process systems implementation percentage increased company-wide, their injury/illness rate decreased from 6.84 in 1987 to 1.84 in 1993, a 73% decline.
- Georgia Power Company brought two large power plant construction sites into VPP in 1983 and 1984. By 1986, one site had reduced its total recordables by 24% and its lost workday cases by a third. The other site reduced recordables by 56% and its lost workday cases by 62%. At Georgia Power's two power plant construction sites, the direct cost savings from accidents prevented at one site was \$4.14 million and was \$.5 million at the other site for 1986 alone.
- During three years in VPP, the Ford New Holland Plant noted a 13% increase in productivity and a 16% decrease in scrapped product.
- A 1991 VPP evaluation of Kerr-McGee Chemical Corporation's Mobile, AL found that work-related injuries continued to decline and production hit an all-time high that exceeded the goal by 35%.

Additionally, OSHA has received information on improvements in morale, productivity and product quality. Although anecdotal in nature, VPP participants frequently refer to these improvements to suggest a direct relationship between improved management of safety and health protection and these benefits.

OSHA e-Cat Initiatives

OSHA's e-CAT initiative pushes implementation of a safety culture at every level of an organization. The multifaceted program has four components: (1) management system and safety/health integration; (2) safety and health checkups; (3) creating change and (4) safety and health payoffs.

e-CAT consists of electronic compliance assistance tools (CATs) that provide guidance information for employers to develop a comprehensive safety and health program. Such programs are required by some states, although no such federal OSHA requirement currently exists.

OSHA's safety and health program management rule is under development, and its future will depend on the regulatory priorities of any administration. The draft rule, released in 1998, would have covered all general industry employers and applied to hazards covered by the general duty clause and existing OSHA standards. The proposal set forth the following core elements:

- Management leadership and employee participation (hold managers accountable for carrying out safety and health responsibilities in the workplace and provide them with the authority to do so and provide employees with the opportunity to participate in establishing, implementing and evaluating the program)
- Hazard identification and assessment (conduct worksite inspections, review safety and health information, evaluate new equipment, materials and processes before they are introduced to the workplace and assess the severity of hazards)
- Information and training (provide employees with information and training in the safety and health program with respect to the nature of hazards, what is done to control the hazards and provisions of applicable standards)
- Evaluation of program effectiveness (at least once every two years, after the initial program development)

Existing programs would be grandfathered as long as they satisfied the basic obligation for each core element and the employer could demonstrate the effectiveness of its program.

The rule would also require employers at multiworksites to provide information about hazards, controls, safety and health rules and emergency procedures for all workers. ASSE commented about this rule in regard to its technical applications, however, the Society remains steadfast in its belief that more must be done to encourage the development and implementation of SH&E programs.

Finally, OSHA's SHARP program provides incentives and support to develop, implement and improve effective safety and health programs. Participating employers may be exempted from OSHA-programmed inspections for a period of one year. All consultation and visits are conducted at employer request. Typical participants are smaller high-hazard businesses (e.g., with fewer than 250 employees) that do not have serious safety and health problems. Participants undergo a comprehensive site visit and agree to correct all identified safety and health hazards.

Even where not mandated by law, SH&E management programs are critical to an industrial employer's SH&E performance. Companies that are truly committed to excellence should consider VPP participation or the other consultation and professional development programs offered by OSHA or through professional safety organizations, such as ASSE.

State Programs

At the state level, Oklahoma was lauded for its Safety Pays program, which offers employers assistance in developing management programs that identify and eliminate workplace hazards and ensure compliance with OSHA regulations. Nine employers were among those receiving the state's awards of excellence, and it was noted that employers had zero lost-time accidents while reducing workers' compensation insurance costs from 47% to 97%.

Similar savings were noted in Alberta, Canada where the Workers' Compensation Board announced that more than \$2 million in premium refunds would be distributed to more than 400 employers who registered in the Partners in Injury Reduction (PIR) program. Other PIR program benefits included lower workers' compensation premiums, increased worker productivity and minimized accident costs. The average lost-time claim rate at PIR participant worksites dropped by more than 20%.

Private Sector Initiatives

At the private sector level, the American Textile Manufacturers Institute instituted the Quest for the Best in Safety and Health program in 1993 to help its members identify strategies for continuous improvements in safety and health. Approxi-

mately 50 companies participated and had impressive results. Forty-five percent of Springs Industries' plants worked 1 million manhours or more without a single lost-time accident and some exceeded 10 million manhours. What was the secret of their success? The following elements were responsible for a 25% decrease in overall injuries in the program's first year:

- Guaranteeing management commitment
- Publicizing the company's commitment to safety throughout the community
- Including discussions of safety issues during employee interviews
- Offering employee wellness programs (healthier employees are less likely to be injured on the job)
- Training employees thoroughly with a new-hire orientation and use of job safety analysis (a blueprint for carrying out each step of a job safely)
- Conducting accident investigations and creating a case management program
- Implementing an effective SH&E program that involves total commitment from employees and management based on a team approach

Environmental ROI

A growing correlation exists between industrial companies' investment in environmental programs and their overall competitiveness and financial performance. For example, Innovest Strategic Value Advisors has consistently reported that some researchers claim sustainability premium can regularly exceed 200 basis points annually for broadly diversified portfolios. In some instances, sustainability premium can surpass 500 in sectors with a particularly acute risk exposure (Innovest Strategic Value Advisors, 2001).

In an annual investment research report on the global auto parts market, Innovest Strategic Value Advisors reported that firms investing in environmental management posted accumulated returns more than 48.8% higher than environmental laggards over a 3-year period and 6% higher returns over 1-year. The report further indicated that Denso Corporation and Snap-On Tools emerged as the top-ranked companies in this annual survey, which assessed the performance of 18 of the world's leading automotive parts and supply companies in areas, such as environmental management, resource usage, climate change, product lifecycle analysis and sustainability-related profit opportunities in new markets.

In addition, a subsequent study of the electric utility industry, found that portfolio managers who screen out companies with poor environmental records can outperform others by more than 7% annually. Finally, a news report shows that top environmental performers in the computer sector have

outperformed their industry rivals financially by 25% since the beginning of 1998. The report, “The Computer Industry: Hidden Risks and Value Potential for Strategic Investors,” calls into question the view of the environment as a cost center and presents evidence linking superior environmental performance with competitiveness and profitability. Citing Dell Computer Corporation as one example, the report says the company’s energy-efficiency initiatives already have generated cost savings of 37% (Innovest Strategic Value Advisors, 2001).

Value of Company/Organizational Reputation

The Reputation Institute is a private research organization founded by Professor Charles Fombrun of New York University’s Stern School of Business and Professor Cees van Riel of Erasmus University’s Rotterdam School of Management. The institute brings together a global network of academic institutions and leading-edge practitioners interested in advancing knowledge about corporate reputations. SH&E is part of the reputation analysis process.

The institute’s report, “The Benefits of Reputation Management,” states that a company’s reputation is of significant value in generating a favorable ROI. For example, a company or organization will benefit from a favorable reputation by becoming the first choice of customers, investors, suppliers and employees. A favorable reputation with customers creates a degree of brand equity with them that enhances

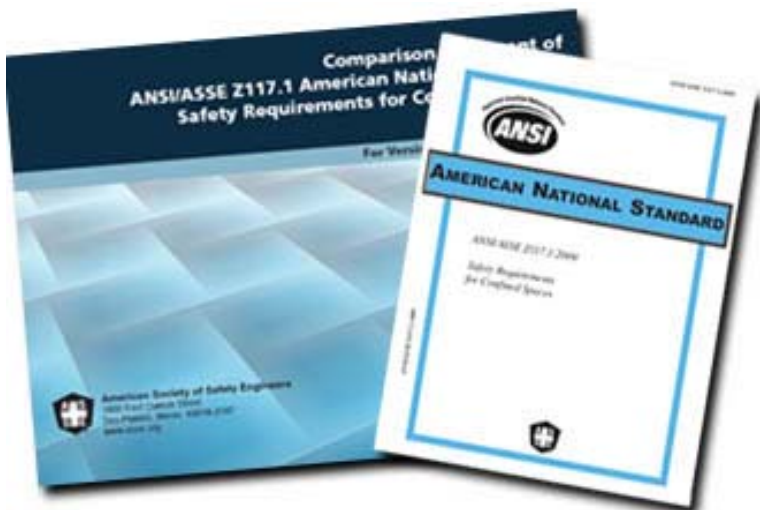
loyalty, encourages repeat sales and grows revenues. Similarly, a favorable reputation with employees can help attract better employees, spur productivity and enhance profitability. Comparing book values with market valuations suggests that the intangible assets of public companies in 55% of their market valuations has grown steadily over the past 40 years. These intangibles are made up of intellectual capital, such as patents and reputational capital (the strength of the company’s stakeholder relationships) (Reputation Institute).

Conclusion

Workplace injuries and illnesses are costly in financial and human terms. More than \$40 billion is paid each year by employers and their insurers in workers’ compensation benefits or nearly \$500 per covered employee. This figure is unacceptable. Data and citations referenced throughout this white paper support ASSE’s finding that a direct positive correlation exists between SH&E investment and its subsequent ROI.

Ultimately, company executives must recognize that they have a duty to provide a safe and healthful workplace to those who work for the company or who visit the worksite. It is unethical to risk someone’s life and health to save money. A sound safety and health management program can help companies fulfill their moral obligation. ■

New Z117.1-2009 Standard & Comparison Document Now Available!



This special combination package includes the newly revised Z117.1-2009 standard plus the Z117 comparison document, which outlines the differences between the 1995, 2003 and 2009 versions of the Z117.1 standard.

Click [here](#) to order your special combo package today!