

# Management Systems

*Integrating safety, health, environmental and quality programs*

By Mark D. Hansen

**I**N 2004, A TOTAL OF 1.3 MILLION INJURIES and illnesses in private industry required recuperation away from work beyond the day of the incident (Bureau of Labor Statistics, 2005). According to the Liberty Mutual Workplace Safety Index (2005), in 2003, employers spent \$50.8 billion on wage payments and medical care for workers hurt on the job. These losses—in terms of lives and dollars—can be significantly reduced by implementing a safety and health management system (Lyon & Hollcroft, 2003; VPPPA, 2005).

Management systems help companies to think and behave in new ways. Many different approaches are available. Examples include ANSI/AIHA Z10-2005; OHSAS 18001; OSHA's Process Safety Management Standard and EPA's Risk Management Program; OSHA's Voluntary Protection Programs (VPP); American Chemistry Council's (ACC) Responsible Care initiative; American Institute of Chemical Engineers' Center for Chemical Process Safety; Food and Drug Administration's Good Manufacturing Practices; and the ISO 9000 and 14000 series.

OSHA's VPP and ACC's Responsible Care provide two examples of successes that can be achieved by implementing a safety, health, environmental and quality (SHEQ) management system. According to OSHA, "the average VPP worksite has a days away restricted or transferred case rate of 52% below the average for its industry," with reductions being observed as a site begins the VPP application process (Lyon & Hollcroft, 2003). According to the Voluntary Protection Programs Participants' Association (2005), more than 500,000 U.S. workers are directly impacted by VPP.

Responsible Care is the chemical industry's global voluntary initiative under which companies work to continuously improve their safety, health and environmental performance, and to communicate with stakeholders about their products and processes. Members of ACC must apply a Responsible Care management system to their operations. This system includes requirements for policy and leadership; planning; implementation, operation and accountability; performance measurement and corrective action; and management systems review.

According to ACC (2005), between 2003 and 2004, employee recordable incidence rates in its member companies declined 10%, and days away from work incidence rates dropped 6%. Furthermore, since 1994, those companies have reduced their days away from work rate by 43%. Collectively, Responsible Care companies have reduced their occupational injury and illness incidence rates by 60% since 1990. ACC (2005) also reports that its member companies are twice as safe as the business of chemistry and 4.5 times safer than the average of the U.S. manufacturing sector as a whole.

## An Overarching SHEQ System

Given the number and variety of systems available, a company could find itself operating up to 10 different management systems at one time. The problem with multiple management systems is complexity and confusion and the resulting errors.

To avoid such problems, it may be best to develop one management system that covers safety, health, environment and quality (Hansen, 1994a, 1994b). This does not mean that companies should abandon their investment in already developed or registered management systems. However, a general overarching management system can easily be structured to accommodate the specificity of the various systems.

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SH&E programs are often over-specified, which leaves little flexibility to respond to varying circumstances. A general overarching management system can provide the flexibility needed in a dynamic business environment.

A well-planned management system that integrates SHEQ will significantly improve process measurement and performance while reducing risk and the liabilities associated with nonconformance over time. Central to this improved performance is system design and tapping the resources that exist with first-line supervisors and employees (Hansen, 1994a, 1994b; BSI, 1999). Developing and implementing a comprehensive enterprise-wide SHEQ management system may sound daunting, but careful planning can simplify the process. Planning is the foundation for designing and implementing an umbrella system for SHEQ (Hansen, 1994a, 1994b; BSI, 1999).

### An SHEQ Management System

An effective SHEQ management system features seven basic components:

- 1) policy, leadership and accountability;
- 2) organizational infrastructure;
- 3) strategic planning;
- 4) SHEQ management;
- 5) customers, contractors and suppliers;
- 6) performance monitoring;
- 7) continuous improvement (Block, 1997; Crosby, 1984; ISO, 1994a; OSHA; ACC, 2005; VPPPA, 2005; BSI, 1999).

To implement a management system, a company needs a road map. That process begins with a gap analysis, which is a benchmarking process used to determine the status of implementation of current programs in the spectrum of full implementation. The analysis is categorized into four progressively improving states: developmental, intermediate, mature and advanced. A series of questions asked during each level provides information on whether the system meets the established requirements. The sidebars throughout the remainder of the article show sample benchmarks of each stage for each system element.

When completed, the gap analysis will illustrate where a company stands and where it wishes to be from a management systems standpoint. The result is a comparison across facilities and a performance metric to benchmark and set goals by facility. The sidebar article by Lyons and Hollcroft (on pg. 38) outlines steps involved in evaluating an SHEQ management system. The remainder of this article focuses on the seven key elements and the components that each should encompass.

#### Element 1: Policy, Leadership & Accountability

Management provides the vision, establishes the framework and sets the expectations for management of company operations. Leadership and visible commitment to improved SHEQ performance are critical elements of successful operations. Therefore, SHEQ policies must be established, communicated and updated as necessary. Business units must establish and implement SHEQ management systems that are

consistent with the corporate system. These units must also evaluate whether business-specific SHEQ management system expectations are required.

In an effective SHEQ management system, SHEQ roles and responsibilities are documented and assigned. Management demonstrates leadership and promotes commitment to improving SHEQ performance through active and visible participation. Management also establishes clear goals and objectives, roles and responsibilities, and performance processes to ensure that documented systems are in place to deliver these results. In addition, management's SHEQ performance must be assessed against its annual objectives, based on feedback from line management, peers and others in the business unit. Management holds all levels of employees accountable for SHEQ expectations and requirements.

Employees and contractors should be encouraged to help improve SHEQ performance. Performance indicators must be established and monitored, and SHEQ costs are measured and managed. The company must also have a system to evaluate SHEQ performance and management systems of prospective partners to ensure that their approach is acceptable. All involved must understand that SHEQ performance is an integral part of overall performance and is a factor in determining personal compensation.

The sidebars throughout the article show sample benchmarks of each stage for each of the seven key system element.

### Element 1: Policy Leadership & Accountability

#### Stage 1 - Developmental

- Leaders are somewhat proactive and do not focus solely on trailing indicators [such as total recordable incident rates (TRIRs) and lost-time accidents (LTAs)].
- Leaders communicate SHEQ expectations to their direct reports.
- Leaders develop goals and objectives for SHEQ that include documented plans for improvement.
- Leaders understand basic SHEQ management systems processes.

#### Stage 2 - Intermediate

- Corporate/business unit SHEQ policy statements are known and understood by all employees.
- SHEQ goals and objectives include proactive efforts and measures, not just TRIRs and LTAs.
- Leaders have regular discussions about SHEQ with direct reports, supervisors and employees.
- Leaders ensure that SHEQ advice is available to line management.

#### Stage 3 - Mature

- Leaders communicate how SHEQ is integral to business excellence.
- Supervisors/managers are actively engaged with contractors on SHEQ issues.
- Leaders frequently communicate SHEQ expectations and performance to all employees.
- Leaders develop goals and objectives that include both bottom-line results and management system improvements.

#### Stage 4 - Advanced

- Leaders champion SHEQ processes.
- Leaders share SHEQ best practices.
- Leaders devote a portion of each business meeting to SHEQ issues.
- Leaders actively participate in SHEQ activities, such as meetings, assessments, training, rewards and recognition.

## Element 2: Organizational Infrastructure

### Stage 1 - Development

- Management and employees are aware that they are accountable for SHEQ performance.
- Management and employees are aware that they have SHEQ roles and responsibilities.

### Stage 2 - Intermediate

- SHEQ is viewed as a line management responsibility.
- Employees have written SHEQ roles and responsibilities.
- SHEQ accountability is addressed during post-incident discussions.
- SHEQ accomplishments are rewarded and recognized.

### Stage 3 - Mature

- SHEQ accountability is discussed during performance appraisals and factored into the overall performance evaluation.

- Operating procedures include SHEQ roles and responsibilities.
- SHEQ roles and responsibilities are developed, documented and communicated for all levels of the organizations.
- Employees received training in their respective SHEQ roles and responsibilities.

### Stage 4 - Advanced

- All individuals are held accountable for their assigned roles and responsibilities in the SHEQ management system.
- Consequences (both positive and negative) for SHEQ performance are understood by everyone and put into practice.
- SHEQ roles and responsibilities are integrated into overall business roles and responsibilities.
- Recognition for performance is frequent and meaningful.

## Element 3: Strategic Planning

### Stage 1 - Development

- A process exists to ensure compliance with regulatory requirements.
- A process exists to identify and communicate new regulatory requirements.
- Local self-assessments are performed regularly.
- Audits are conducted for compliance assurance.

### Stage 2 - Intermediate

- An SHEQ vision has been developed.
- The workforce is involved in developing and implementing solutions to relevant SHEQ issues and problems.
- Annual operating plans include SHEQ targets and plans for achievement.
- Supervisors and employees are involved in conducting assessments with SHEQ professionals.

### Stage 3 - Mature

- Key SHEQ management system elements have been identified. Gaps and closure strategies

have been established. Actions to close gaps have been identified.

- Goals and objectives are developed based on the SHEQ implementation plan and are aligned throughout the organization.
- Improvement actions are executed based on documented plans and timelines.
- Engineering design and facility pre-start-up reviews are routinely conducted.

### Stage 4 - Advanced

- SHEQ is addressed in strategies and business plans with the same degree of commitment as financial performance.
- Upper leadership champions the vision for SHEQ excellence, which is clearly understood by both company employees and contractors.
- SHEQ goals process leads the site toward achieving continuous improvement.
- Location employees have an active role in developing and executing assessments.

## Element 2: Organizational Infrastructure

Organizational infrastructure helps to ensure that SHEQ expectations are met. Through this structure, management provides the standards, documentation and resources for responsible management of company operations. SHEQ must hold a strong position within the organization in order to influence upper management. SHEQ is given the responsibility and accountability to provide standards, regulatory or otherwise, to ensure compliance with governmental agencies and standards authorities. It is also important that SHEQ provide up-to-date documentation for all employees regarding related procedures.

## Element 3: Strategic Planning

Management provides the direction for a strategic SHEQ plan to meet existing and expected legal, regulatory, agency and customer requirements. This plan should be integrated with the business plans for each business unit. The company SHEQ plan should include 1-year and 5-year performance targets. Strategies to continually improve SHEQ performance—including the resources required to achieve performance targets—must be integrated into the business plans for each business unit.

## Element 4: SHEQ Management

Delivering a quality product or service, protecting worker safety and health, and operating to protect the environment are typical corporate objectives. Adhering to established SHEQ practices, evaluating and managing change, and providing up-to-date procedures to manage SHEQ contribute to delivering a quality product or service, and providing a safe and environmentally conscious workplace for employees, customers and contractors.

### Quality Process

As noted, a company wants to deliver a quality product or service. Doing so requires following established quality practices and providing up-to-date procedures. Developing and implementing a corporate quality system manual for all locations helps to ensure a consistent approach. A corporate quality system includes systems for:

- contract review and coordination;
- manufacturing to control and verify the design of the product in order to ensure that the specified requirements are met;
- purchased products or services to ensure that they conform to specified requirements;
- control of verification, storage and maintenance of customer-supplied product provided for inclusion in the product's assembly;
- identifying and planning for production, installation and servicing processes that affect the quality of the product or service;
- inspecting and testing to verify that a product meets specified requirements;
- controlling, calibrating and maintaining inspection, measuring and test equipment (including test software) used to demonstrate a product's conformance to specified requirements;

- issuing and providing evidence that the product has been inspected and/or tested;
- ensuring that nonconforming product is not used;
- implementing corrective and preventive action;
- handling, storing, packaging, preserving and delivering the product;
- identifying, collecting, indexing, accessing, filing, storing, maintaining and disposing of records;
- planning and implementing internal quality audits, both scheduled and unscheduled, to verify whether quality activities and related results comply with planned arrangements and to determine the effectiveness of the quality system;
- identifying training needs and providing training to personnel whose activities affect the quality of the product or service;
- training requirements that include quality system indoctrination and job training;
- using statistical techniques for establishing, controlling and verifying process capability and product characteristics based on the need required for all subscribing locations.

#### **Safety & Health**

A system must be in place to identify hazards associated with business activities, assess risk, control hazards and manage the risks to acceptable levels. The system must ensure safe work practices, including off-site activities and capital project construction (Hansen, 1994a, 1994b, 1994c, 1995; BSI, 1999).

#### **Design Integration & Product Stewardship**

A company must be committed to the effective assessment of the hazards associated with a product

and the consequential risks posed throughout a product's life. Therefore, it must accurately communicate product safety information to employees, customers and the public. This includes developing a process to ensure that safety aspects of new and reformulated products are evaluated before commercialization.

Baseline technical SHEQ data must be collected before any new operation, facility or major modification is undertaken. Facilities should be designed and constructed using technology that balances commercial risks and financial benefits to manage technical risks and minimize or eliminate hazards to personnel, as well as emissions, discharges, impacts on biodiversity and other environmental impacts. Operational, maintenance and SHEQ expertise should be integrated early in the project/design stage. Experience from previous projects and current operations must be applied where relevant as well.

Potential hazards must be identified and SHEQ risks assessed using appropriate risk assessment tools (e.g., quantified risk assessments, hazard and operability studies, failure modes and effects analyses). These tools should be applied at specific stages of a project in order to mitigate risk. This approach also ensures that deviations from design standards are identified and managed at an appropriate level, with the reasons documented and retained.

A company must also accurately assess the adequacy and enforcement of safe work practices. Facilities, vehicles and equipment must be maintained to ensure their safe operating condition, and purchasing and warehousing procedures, and contracts, should include SHEQ requirements where applicable.

## **Element 4: SHEQ Management**

### *Stage 1 - Developmental*

- SHEQ standards and procedures exist, are available at each worksite and are generally known by all employees.
- Employees have been trained on workplace hazards.
- MSDS are current, available and understood by all employees at each location.
- Emergency equipment and plans are provided in accordance with regulations.

### *Stage 2 - Intermediate*

- Locations use an effective work permit system to manage hazardous activities.
- Employees have received adequate training for operating and maintaining appropriate facilities and processes.
- Process hazard analyzes are conducted on all new facilities and all facilities with major modifications.
- Job safety analysis is conducted for nonroutine activities.

### *Stage 3 - Mature*

- A defined work process is used for standards

and procedures development, maintenance, review, variance and change.

- Emergency response plans are integrated plans with controls for all types of emergencies (e.g., medical cases, spills, fire/explosions, hurricanes).
- Waste management plans are developed in line with business plans to minimize environmental life cycle cost impacts.
- Training is completed for all emergency preparedness roles and responsibilities.

### *Stage 4 - Advanced*

- An evergreen process is used to ensure that standards and procedures are current, valid and appropriate for the level of risk involved.
- Full life cycle (start-up through abandonment) SHEQ impacts and risks are evaluated for each location and acquisition and are included in business plans.
- Exercise and drills are held on a regular basis at each location to cover all scenarios of high-hazard potential and all aspects of the contingency plans and response procedures.
- A comprehensive pollution prevention/waste elimination process is used.

# Evaluating a Safety & Health Management System

By Bruce K. Lyon and Bruce D. Hollcroft

Comparing an employer's existing system to any of the commonly used systems is an in-depth process. It involves an objective (and perhaps an outside and/or independent) review of safety- and health-related policies, procedures and records. It also includes interviews with senior and middle management, supervisors and line/hourly employees. Finally, it requires a detailed survey of the facility to identify potential hazards and determine whether they are adequately controlled. The order of these activities varies and may alternate during an individual project.

The comparison process also helps to determine that the employer's written policies and programs are consistent with what is actually occurring in the workplace. From this gap analysis, action plans may be developed. All of this must be performed objectively and reliably, and it must be accurately documented, including action items and opportunities for further improvement.

## Document Review

To provide a thorough understanding of the current system and its recent

implementation history, reviews of safety- and health-related documents will generally go back about 5 years. While documents older than 5 years (such as occupational health monitoring records) are important indicators of past system performance, they may not be a good reflection of the current system. These procedures should be included in the review process.

•**Corporate and local safety policy statements and procedures.** These are reviewed to determine their adequacy and applicability, and to verify that they are current. Many safety and health management system initiatives fail due to a lack of visible support from corporate and/or facility top management. An initial step must be to assess the support of top management.

•**Written programs required by regulations.** These include hazard communication, hearing conservation, lock-out/tagout and others required by OSHA and/or state regulations.

•**Supplemental safety and health procedures.** Employers must follow through on what their written procedures state. Failure to do so can be a significant source of potential liability

and an indicator of a poorly developed or implemented procedure.

•**Accident/incident records, first-aid reports, investigations, OSHA citation/inspection records and workers' compensation claims.** These are reviewed for accuracy and thoroughness, and to identify trends that might suggest weaknesses in the safety and health management system.

Other documentation to be reviewed might include hazard assessments, training records, expired hot-work and confined space entry permits, industrial hygiene programs and monitoring records, and medical records. In addition, safety committee meeting minutes, and the minutes of other internal meetings addressing safety should be considered, and employee/management involvement should be evaluated.

Recent management correspondence regarding safety committee recommendations may indicate the level of management support for the safety effort.

## Interviews

Interviews with personnel at all levels are critical components of the safety and health management evaluation.

Safety and environmental control equipment/systems must be tested and maintained; safety implications of temporary or permanent changes in operations and/or facilities must be managed; and design data, drawings and operating procedures must be documented, updated, communicated and accessible.

A company must also ensure that employees and contractors are fit for duty and are not compromised by external influences such as alcohol or drugs. The company must identify, assess and manage occupational health risks, and must communicate known hazards to employees and contractors.

## Environmental Protection

Protecting the environment is another corporate goal (Hansen, 1994a, 1994b, 1994c, 1995). This encompasses efforts to monitor and reduce emissions, waste and the environmental impact of a business. The company must have systems in place to document the safe disposal of waste, control emissions and minimize waste—and to ensure that these issues are considered during facility design and modification. The system should also address spills and leaks, and soil or groundwater contamination resulting from facility operations. Efficient use of energy and natural resources should be considered when designing, developing and improving products/processes. Potential hazards and risks to personnel, facilities, the public, customers and the environment must be assessed for existing operations, products, business developments, acquisitions, modifications, new projects, closures, divestments and decommissionings.

## Drug & Alcohol Monitoring

A drug and alcohol program helps to ensure that employees and contract workers employed on a company's premises are not impaired. Key site personnel must monitor and communicate emerging drug and alcohol issues, as well as legal requirements. In addition, company representatives should participate, as appropriate, in the formulation of laws, regulations and standards (Hansen, 1994a, 1994b, 1994c, 1995).

## Risk Management

Risk identification, assessment and prioritization can reduce risk and mitigate hazards to employees, customers, contractors, vendors, the community and the environment. Management of risk is a continuous process (Hansen, 1994a, 1994, 1994c, 1995). Therefore, a system must be in place to identify SHEQ hazards and their potential consequences and to control the hazards and manage the risks to acceptable levels. Under this system, the design of new and modified facilities is reviewed ensure appropriate SHEQ protection measures have been incorporated.

In addition, the risks associated with the acquisition, closure and divestment of facilities and operations must be assessed and managed. Risks must then be addressed by the levels of management appropriate to their nature and magnitude, and decisions must be documented and corrective action taken. Risk assessments should be updated at specified intervals and as changes are planned.

The number or percentage of personnel to be interviewed at each level should be determined in advance. A brief set of interview questions should be prepared in advance and asked of all those interviewed. An interviewer should also be able to ask other questions that arise during the evaluation. Interviews serve several purposes:

- **Confirm what has been read in the document reviews.** Corporate staff or consultants often write policies and procedures with little involvement of those who will implement the procedures. As a result, actual practice may not reflect written policies and procedures. This may be discovered during interviews and corrective action may be recommended.

- **Identify differences between employee and management perceptions.** When employee and management perceptions of the safety and health management system are not aligned, it is usually the result of a lack of sustained active commitment to safety and health on the part of senior management.

It can also be that middle management has not yet accepted and endorsed senior management's position on safety and health management and as a result is not fully implementing or enforcing it. Regardless of the

cause, this situation must be identified so it can be corrected.

- **Convey the employees' overall impressions.** A trend of unfavorable perceptions of the safety and health management program indicates a weakness somewhere that needs to be identified and resolved.

### Facility Surveys

Facility surveys are another key element. Surveyors must have substantial experience in anticipating, recognizing, evaluating and controlling workplace hazards. Facility surveys:

- **Confirm information gathered during document reviews and interviews.**

- **Identify hazards and assess their control.** A facility survey will attempt to discover whether all significant hazards (including those that cannot be readily observed but can reasonably be anticipated) have been identified and whether appropriate controls have been implemented. It also confirms the existence of a hazard analysis process, which is critical to an effective safety and health management system. A hazard analysis process should be applied to all major new or significantly modified facilities and equipment, jobs with high injury rates and jobs with the potential for serious injuries.

- **Evaluate regulatory compliance**

**for the identified hazards.** This includes the adequacy of written programs and training that were reviewed during the document reviews and interviews. It involves observing employees performing their jobs, with special attention to engineering controls, work practices and the use of PPE.

- **Allow for evaluations of the quality of self-inspections, preventive maintenance, housekeeping and general conditions.**

### Conclusion

Effective evaluation of a safety and health management system is an in-depth process requiring a great deal of training and experience. However, implementing or improving such a system may have a significant payoff in the form of fewer accidents and reduced injury- and illness-related losses. The evaluation process not only establishes that an appropriate system is in place, but it also confirms that policies and procedures reflect what is actually happening in the workplace.

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### Incident Reporting & Investigation

Effective incident investigation, reporting and follow-up provide the opportunity to learn and to improve performance (Hansen, 1994a, 1994b, 1994c, 1995). Incident investigation can encompass personnel incidents, environmental incidents and customer complaints. The company should have a system for reporting SHEQ incidents, including near-hits. Incidents should be investigated to determine root causes and determine corrective actions needed to prevent recurrence. The corrective action must be tracked to completion, and lessons learned should be shared with appropriate audiences.

### Crisis Preparedness

Planning for emergencies helps to ensure that all necessary actions will be taken if an incident occurs (Hansen, 1994a, 1994b, 1994c, 1995). Therefore, a system must be in place to identify potential crisis scenarios and their impacts, and to ensure that up-to-date emergency response and crisis management plans exist at each level of the corporation. Equipment, facilities and trained personnel required to respond to emergencies should be defined and readily available. In addition, the company should conduct regular training exercises and drills. This will help to make sure roles, responsibilities and capabilities of the company and response agencies are understood and incorporated into emergency response plans.

### Training

Safe, environmentally sound operations rely on well-trained people. Ensuring that employees and

contractors are aware of their SHEQ responsibilities and are trained to fulfill them is critical (Hansen, 1994a, 1994b, 1994c, 1995). Therefore, a company must define and document SHEQ skills and knowledge needs by job, and train employees to perform jobs in a safe and environmentally responsible manner. In addition, orientation training for new or transferred employees, contractors and other visiting personnel must cover SHEQ rules and emergency procedures.

The company should also define and document individual performance targets with respect to SHEQ roles, responsibilities and accountabilities. Through effective recruitment, selection and placement processes, a company can better ensure that personnel are qualified, competent, and physically and mentally fit for their assigned tasks.

### Community Relations

Open communication with the local community builds confidence and trust in the integrity of a company and its operations (Hansen, 1994a, 1994b, 1994c, 1995). By maintaining open channels of communication with the local community, concerns can be identified and addressed proactively.

*When completed, the gap analysis will illustrate where a company stands and where it wishes to be from a management systems standpoint. The result is a comparison across facilities and a performance metric to benchmark and set goals by facility.*

## Element 5: Customers & Contractors

### Stage 1 - Developmental

- Contractors are aware of the site's objective to have a contractor SHEQ performance equivalent to that of the company.
- Site has a contractor SHEQ orientation program.
- Contractors must provide a description of their safety and health program.
- Locations monitor contractor incident rates.

### Stage 2 - Intermediate

- Contractors have frequent scheduled SHEQ meetings with company participation.
- SHEQ performance is a standing agenda item on all meetings between the company and contractor supervisors and managers.
- Contractor initiates investigation of all accidents and high-potential near-hits with corrective action taken.
- Locations monitor contractor job performance to ensure compliance with all SHEQ provisions of contract.

### Stage 3 - Mature

- A formal contractor selection

process is in place that includes SHEQ performance evaluation.

- Assessments are performed and contractors not meeting established requirements and standards are eliminated from consideration.
- Contractors openly provide feedback to site-specific SHEQ issues.
- Contractors set proactive SHEQ goals that are shared with the company.

### Stage 4 - Advanced

- Contract holders are accountable (with consequences understood and used) for contractors' SHEQ performance.
- Regular full-time contractors have implemented an SHEQ management system comparable to the company's system.
- Locations perform post-assessment of contract and contractor SHEQ performance, resulting in improvements to contract and/or contractor management process.
- Contractors' incident rates are comparable to the company's and are continuously improving.

### Legal & Regulatory Requirements

Compliance with regulatory requirements and company guidelines must be periodically measured and verified. Therefore, a company must have a system in place to verify compliance with all applicable legal requirements. This should include efforts to monitor and communicate emerging issues, legal requirements and the development of related laws, regulations and standards.

### SHEQ Audits

The audit process helps guide the continuous improvement process. Through audits, a company can assess compliance with legal, regulatory and agency requirements relative to expectations. Internal SHEQ audits, both scheduled and unscheduled, help to verify whether SHEQ activities and related results comply with company standards, as well as with legal and regulatory mandates. Audits should be documented and can be conducted using internal and external expertise. Findings from audits should be tracked and used to systematically improve the management system.

### Element 5: Customers, Contractors & Suppliers

Customers, contractors, suppliers and others are

key to successful business performance, so a company should assess their SHEQ needs, capabilities and competencies. This involves monitoring customers, contractors' and suppliers' performance to ensure that they meet expectations and needs.

Prequalification, selection and retention criteria should be established for work performed by customers, contractors, suppliers and others, including a system for ensuring their compliance. Hazards and risks associated with customer and contractor activities must be identified, managed and communicated. Interfaces between the company and its suppliers must be identified and effectively managed. Clear deliverables and performance standards should be agreed to and a system developed to ensure SHEQ and technical compliance. Where possible, purchased products and services are verified as meeting national/international SHEQ standards. Joint venture and alliance partners should have SHEQ management systems that are aligned with that of the company and meet legal, regulatory and agency compliance requirements.

### Element 6: Performance Monitoring

A company should periodically assess implementation and compliance to ensure that management processes are working effectively. This requires that SHEQ performance metrics be established, communicated and understood throughout the organization. Employees should be actively involved in periodic assessments of the effectiveness of processes and procedures to meet SHEQ expectations.

Performance indicators are used to determine when and what management system changes are necessary. When changes occur in one SHEQ element, the impact on the entire management system must be evaluated. Findings from continuous improvement processes (such as audits or incident investigations) must be priority ranked, tracked and used to systematically improve the overall safety management system.

In addition, management must review the system to ensure that it is delivering consistent, desired performance. Based on the review, new risk-based targets should be considered and established when necessary. Business units must report SHEQ performance data as part of their reporting requirements. In addition, a process must be in place to provide regular assurance to the CEO demonstrating effective implementation of the SHEQ commitment and expectations. Annual self-assessments against these expectations are carried out by each business unit, along with external audits at least every 3 years.

### Element 7: Continuous Improvement

A process that measures performance relative to expectations is essential to improving SHEQ performance. Sharing best practices and learning from each other promotes improvement. Therefore, a company must have systems in place to ensure that business units periodically measure the degree to which the requirements of the SHEQ management system are met. Measurable SHEQ objectives should

be established annually and used to drive continuous improvement. Procedures that encourage the transfer of good SHEQ systems, programs, practices and technology within the company should be implemented as well.

## Conclusion

An effective SHEQ program is good management and provides a method to translate SHEQ vagaries into concrete performance measures. It should also be viewed as part of the company's overall business strategy and be reported on to key stakeholders annually. By implementing an integrated SHEQ management system, a company can:

- measure SHEQ performance;
- reduce costs and increase profit margins;
- increase competitiveness;
- facilitate the return to work of injured workers;
- reduce incident frequency and severity rates or lost time;
- reduce damage to equipment, inventory or product loss, and generation of hazardous waste;
- increase regulatory compliance;
- improve employee and public relations. ■

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## Element 6: Performance Monitoring

### Stage 1 - Developmental

- Locations report SHEQ accidents as required by regulation and company policy.
- Locations monitor SHEQ incident trends.
- A plan is in place to assess, reduce or control at-risk behaviors in the workplace.

### Stage 2 - Intermediate

- Proactive, leading measures are defined and collected at each site.
- Each location benchmarks its SHEQ performance against peers.
- Locations track waste generation and handling.
- Field employees have received training on at-risk behavior, and assessments focus primarily on behaviors.

### Stage 3 - Mature

- Locations routinely report and display proactive metrics.

- Measures such as near-hits, training and job safety analysis are used to trend performance of SHEQ activities.
- Locations understand the full costs of incidents.
- Full life cycle of wastes is measured.

### Stage 4 - Advanced

- SHEQ measures are viewed as business performance measures and are used to guide business decisions.
- Proactive SHEQ measures are widely available to employees and are understood.
- Metrics are being used to identify areas for improvement before the occurrence of incidents.
- Applicability of measures is continuously evaluated to meet business needs.

## Element 7: Continuous Improvement

### Stage 1 - Developmental

- Employees' SHEQ concerns are identified and addressed.
- Employees volunteer for SHEQ activities and participate in safety meetings.
- Working safely is not solely driven by rules and discipline.

### Stage 2 - Intermediate

- Location committees are the primary way to involve the workforce in SHEQ issues.
- Teams are created to work on nonroutine SHEQ issues or problems.
- SHEQ rules and procedures are accepted and followed by the workforce.
- Employees understand their location's SHEQ implementation plans and activities.

### Stage 3 - Mature

- Employees take ownership of their personal safety.

- Employees and groups help to develop the business unit's SHEQ goals and objectives.
- Employees develop and pursue individual SHEQ goals that are aligned with team and business unit goals.

### Stage 4 - Advanced

- SHEQ work processes are owned and driven by product lines and groups
- Employees take responsibility for their own safety and that of others.
- Employees help to evaluate the SHEQ management system and provide input for improvement.
- Employees understand that no work should begin until all appropriate SHEQ controls are in place.

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