

Safety and Health Management Systems Assessments

Paul A. Esposito, CSP, CIH

STAR Consultants, Inc.

This article presents a safety and health management system and assessment methodology that describes a process and provides a tool to measure the ability of management to achieve and maintain compliance and achieve continuous improvement regardless of the management style of the company.

Background: Defining Management Systems

Business safety and health risks are either regulated by government agencies (e.g., OSHA Subpart D, walking/working surfaces), regulated by the industry (e.g., insurance carriers attempt to control worker's compensation), or controlled through good business practices (e.g., safe work procedures, employee attitudes toward safety rules). Management responds to the need for reliable control of these risks with a broad range of systems or processes employing physical, operational and management controls otherwise known as a "Management System".

Management¹ is defined as a:

"process of setting objectives, organizing resources to attain these pre-determined goals, and then evaluating the results for the purpose of determining future action"

A management system or **process** is designed to respond to and control the inherent risk of the operation and mimic the structure and culture of the organization.

Process is defined as a:

"series of actions, changes or functions that bring about an end result. To put through the steps of a prescribed procedure"

As a process, each program has a series of activities that make up their implementation strategy. The overall program can, therefore, be only as strong as its weakest link. For example, if you look at an inspection program process, one should expect certain components or steps. If an inspection program is designed, procedure written and inspectors trained, yet there is no tracking of issues to closure, you will typically find severe weaknesses in the overall effectiveness of the inspection program. Issues such as frustration on the part of inspectors and workers, numerous repeat findings, with some even contributing to incidents will probably result.

Likewise, a **system** is defined as a:

"group of interaction, interrelated or interdependent elements forming or regarded as forming a collective entity"

¹ Management: Theory, Process and Practice: Third Edition, Richard M. Hodgetts. 1982 The Dryden Press

In a system, each element needs to have a consistent set of guiding principles. For example, to maximize the chance for success, one would expect an inspection program to have: a) a written procedure, b) communication of this procedure, c) a training program for inspectors, d) tailored forms to use, e) analytical skill on the part of inspectors, f) a system to record, track and close findings, and, g) some system of measurement and feedback to monitor if the system is meeting expectations.

As a collection of systems, the success of one element influences the success of the others and vice versa. For example, an incident investigation procedure that is constantly pointing fingers at employees for "not being careful" typically means that safe work procedures and hazard controls are more administrative or verbal, rather than truly documented or analyzed as part of a Job Hazard Analysis (JHA). It means hazards are not likely to be abated. Thus, without good hazard analysis and clearly identified safe work procedures, an investigation program may not be very effective in preventing repeat occurrences.

Many have attempted to define safety management systems. They can include:

- The Culture of an organization
- Understanding, Recognizing, Evaluating and Controlling
- Planning, Organizing, Directing and Controlling
- ISO's Plan, Do, Act, Check
- Use of tools such as communication, responsibility, authority, and accountability.

Each of the above can be considered a management system. The bottom line is that unsafe acts, unsafe conditions and incidents are all *symptoms* of something wrong with a management system.²

To quote our fellow quality professionals, the term *quality management system* is the ISO standard itself, being a quality system that companies follow. The McGraw Hill Encyclopedia of Quality Terms and Concepts describes a quality system as a "body of practices, responsibilities, policies, and procedures used by an organization to implement and preserve levels of quality in products, processes, and services". (pg. 296)

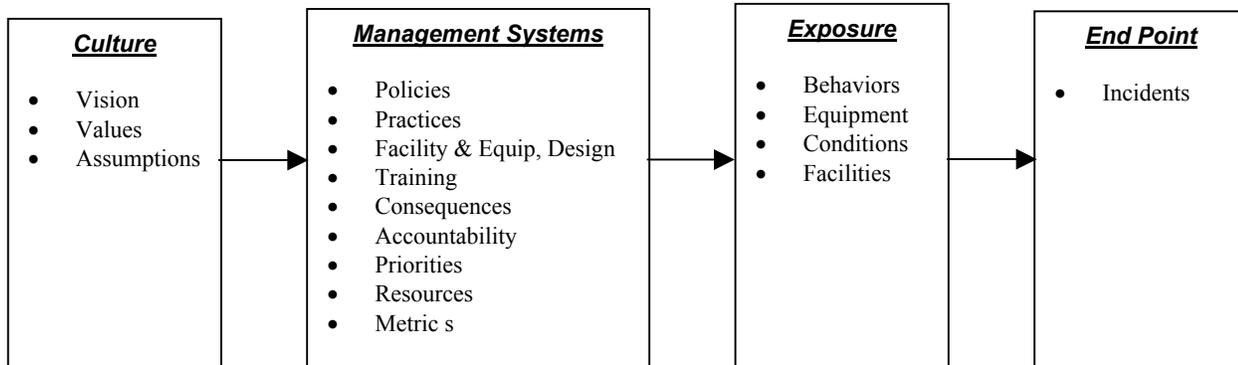
More specifically, a management system's purpose is to manage behavior of all personnel who do tasks in the content/subject/topic that the management system addresses. In addition, the collection of management systems in related subject areas is also considered a management system. For example, accountability is a management system element. Within accountability are processes such as an implementation strategy and procedure, assignment of responsibility, records, metrics, and a means to communicate this to affected parties and management. Management then uses the metrics to monitor if the results occur within expectations. The system includes a feedback loop, and means to measure effectiveness. Therefore, a *management system* is the process for how things get done. In terms of safety and health management, each element, regardless of how you define the elements (OSHA's Program Management Guidelines, ISO 18000, etc.) would have these processes consistent throughout and within each element.

² Analyzing Safety System Effectiveness. Dan Petersen. Third Edition. 1996 Van Nostrand Reinhold.

What Comes First, the System or the Behavior?

Many safety professionals feel that the key element to a good safety program is to modify behavior, i.e., encourage safe behavior. If the safety professional could create an atmosphere where safe behavior is the standard, then we could significantly improve our incidence rates. Some behavior theorists³ have constructed the behavioral hierarchy concept depicted Exhibit 1:

Exhibit 1. Behavioral Hierarchy



Behavior theorists would argue that it is critical to have a management system or process in place in order to actually achieve results (e.g., decrease in exposures and incidents) and thus change behavior.

Based on Exhibit 1 above, each of the items to the left need to be chronologically in place, before the item on the right (control of incidents) can be effective. For example, in order to affect the *End Point* or *Incidents*, there needs to be controls on the *Exposure*. This is accomplished via behavior modifications, as well as changes in equipment, conditions and facilities to reduce or eliminate risk. In order to control *Exposures*, *Management Systems* need to be in place so there are consistent elements that are executed or implemented to achieve controls. Finally, it will be difficult for a company to implement safety management systems if employee safety is not valued as part of the corporate culture. Many companies cite the value of their employees in their Safety and Health Policy, but routinely disregard safety considerations in favor of productivity pressures. Without a true feeling throughout the company that safety really is a core value, implementation of *Management Systems* and controlling *Exposures* has proven to be a long and arduous task for any health and safety individual or department.

OSHA'S Program Management Guidelines

In 1989, OSHA defined their health and safety management system in the Program Management Guidelines (Federal Register Vol. 54, No. 16 1/26/89) seven years after the VPP (Voluntary Protection Program) was first implemented. These "Guidelines" were a result of years of effort on the part of OSHA and industry personnel studying and correlating the elements of management systems common to all of the most successful.

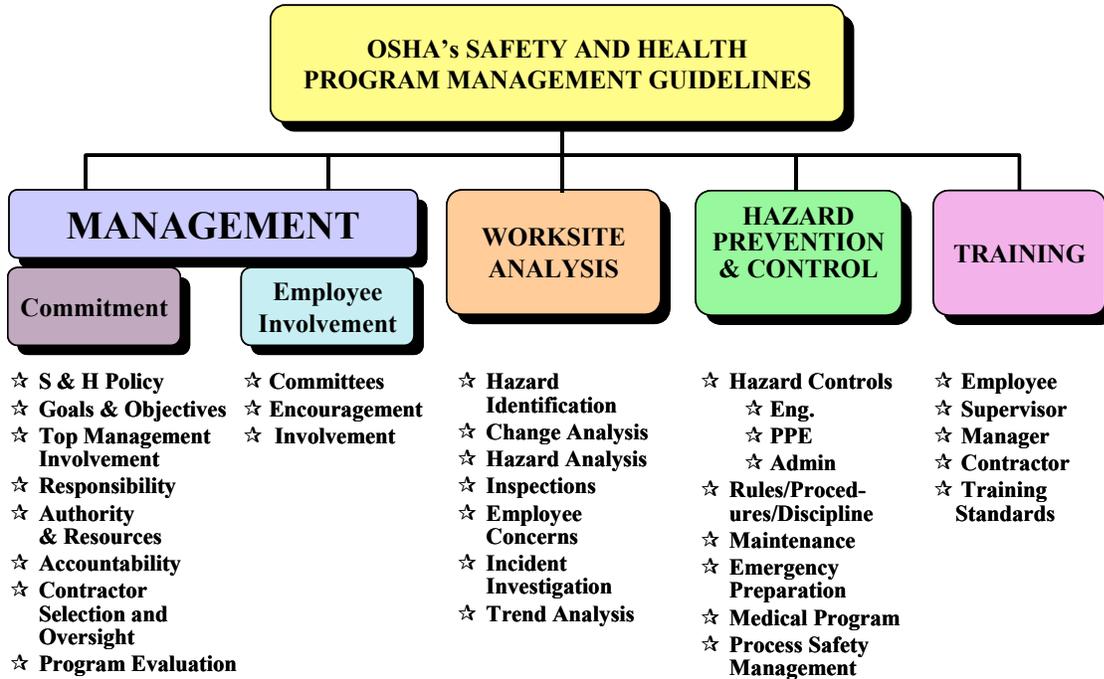
³ Behavior Based Safety. Thomas Krause. 1996 Wiley Press.

In the notice that announced these guidelines, OSHA explained:

"The Occupational Safety and Health Administration has concluded that effective safety and health management of worker safety and health protections is a decisive factor in reducing the extent and severity of work-related injuries and illnesses. ..."

There are four principles and 26 elements (Exhibit 2) defining the Program Management Guidelines:

Exhibit 2: Safety and Health Program Management Guidelines



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Management Commitment

Management commitment provides the motivating force and the resources for organizing and controlling activities within an organization. In an effective program, management regards workers safety and health as a fundamental value of the organization and applies its commitment to safety and health protection with as much vigor as to other organizational purposes.

Employee Involvement

Employee involvement provides the means through which workers develop and/or express their own commitment to safety and health protection, for themselves and for their fellow workers. You will notice that employee involvement is actually a part of, or under the Management category. Employees will only become involved to the extent management provides opportunity and encouragement.

Worksite Analysis

Worksite analysis involves a variety of worksite examinations, to identify not only existing hazards but also conditions and operations in which changes might occur to create hazards. Unawareness of a hazard that stems from failure to examine the worksite is a sure sign that safety and health policies and/or practices are ineffective. Effective management actively analyzes the work and worksite, to anticipate and prevent harmful occurrences.

Hazard Prevention and Control

Hazard prevention and controls are triggered by a determination that a hazard or potential hazard exists. Where feasible, hazards are prevented by effective design of the job site or job. Where it is not feasible to eliminate hazards, they are controlled to prevent unsafe and unhealthful exposure. Elimination or controls is accomplished in a timely manner, once a hazard or potential hazard is recognized.

Training

Safety and health training addresses the safety and health responsibilities of all personnel concerned with the site, whether salaried or hourly, contractor or worker. It is often most effective when incorporated into other training about performance requirements and job practices. Its scope depends on the size and complexity of the worksite, and the nature of the present and potential hazards at the site.

In order to implement processes and systems and allow them to occur, each program (PPE, industrial hygiene, etc.) needs to have each element of a management system in place. For example, a PPE program if implemented to a management systems approach would require many of the above elements.

Evaluating Management Systems: A Different Kind of Thinking

To be effective, a management system should be documented, communicated, followed and measured. One such measurement tool is an audit or assessment. Sometimes called an evaluation, one can evaluate the strengths and weaknesses of a safety and health program by looking at the management systems or processes for each program. Likewise, a management systems evaluation will sometimes look at systems or processes common to each program, to determine programmatic strengths and weaknesses more economically. In business today, this evaluation, audit or assessment has evolved into a widely practiced, highly respected element in the management of safety and health programs of companies of all sizes.

When evaluating systems, rather than compliance, an assessor must adopt a different kind of thinking or perspective that sees beyond mere compliance. Assessors need to be able to look at issues like effectiveness, process and the organizational culture to determine how a safety and health program is designed. During the assessment the assessor asks each of the following:

- Do S&H programs incorporate the science of safety - not just common sense?
- Are safety programs part of existing management processes, or just an orphan program?
- Does the system facilitate employee involvement?
- Is there a plan for continuous improvement? Is it followed?
- Is each program Metrics Driven - Is Data Used?
 - Prospective, and
 - Retrospective

- Are all commitments tracked to closure?

These are some of the overriding philosophies used to evaluate a management system.

The Assessment (Audit) Process

What is an assessment? It is a management tool comprising a systematic, documented, periodic and objective evaluation of how well an organization, its management and equipment are performing with the aim of safeguarding workplace hazards. Are the hazards safeguarded by: a) facilitating management control of health and safety practices; and, b) assessing compliance with company policies, which include meeting regulatory requirements? To put it more succinctly, assessments evaluate the ability of a company to achieve and maintain compliance, e.g., provide management confidence that their risks are being properly managed. The business of safety and health management system assessments are becoming more and more an industry standard.

Just as successful safety and health programs incorporate management systems or processes, so to does the successful assessment. Foremost, the evaluation criteria are defined and documented.

An assessment process or protocol typically includes:

- Developing Evaluation Criteria, with instructions to assessors that...
 - List the documents to be reviewed
 - List the interviews to be performed
 - List the places or issues to be observed
 - ... by each criteria.
- Rating System
- Priority or Ranking System
- Reviewing Documents
 - Procedures
 - Records
 - Interview authors
 - Interview record keepers
- Performing Interviews
 - Workers
 - Supervisors
 - Managers
- Conducting Visual Observations
- Retest records
- Areas of strength
- Areas of weakness

Of critical importance, and the primary difference between a compliance audit and a management systems assessment is the interview process. This is how the assessor determines the "why" and "how", to see if processes are truly implemented and effective.

A subsequent report typically contains a list of the programs or systems reviewed and a narrative account of the examination of each system or program. Sometimes reports also contains a schedule of needed changes, with target completion dates, responsible parties, and space to indicate the date when changes are actually completed. Some reports include pictures of situations that are excellent and those that need

improvement. Some provide grading systems or scoring metrics so that each year's results can quickly be compared to previous years. Some companies make these reports available to any employee who wants to read it.

An assessment is not a survey or an inspection, although these play a role and are performed during an assessment. The ultimate goal of an assessment is to identify strengths and weaknesses via the above components, asking "why?" For example, regulatory findings or observations are treated as *symptoms* of a management system or process failure. So when you ask "why?" enough times of the right people, the answer to this question should tie back to a strength or weakness in one or more of the 26 management system (OSHA) elements. By identifying these underlying system failures or root causes, you can develop program improvements to better control these failures. Therefore, a management systems assessment defines the current status of your program, and it can predict failures and losses. A fundamental component of the management systems assessment is to ensure that the proper mechanisms are in place for a program's success. A properly designed management systems assessment will not only identify strengths and weaknesses, but quantify them as well, so meaningful corrective actions (goals and objectives) can be tracked, trended, developed and implemented.

Benefits

Since being adopted as the safety and health management system by OSHA's Voluntary Protection Program (VPP), companies and sites implementing the Program Management Guidelines approach have recorded incredible successes. Overall, sites participating in the VPP experience injury and illness recordable rates 60-80% below industry averages. Likewise, days away case rates result in 50-60% improvements within a few years. Implementing a management systems approach does not happen overnight, it takes on average 2-3 years, in some cases 5 years to fully convert a management culture or safety program into a functional, operating world-class system.

Summary

While good management systems must be in place if safety and health are to remain a visible top priority or value at any site or company, safety and health programs benefit from annual assessments. Such an examination helps ensure that the programs continue to contribute toward meeting the current year's goals and objectives. Further, it will help reveal the changes needed to steer the programs toward next year's goals, while driving true continuous improvement.