



Module 6: Program Evaluation and Improvement

Safety, like any organizational process, benefits from continuous improvement. Continuous improvement is an ongoing effort to improve processes or programs. It is not enough to simply evaluate hazards and write a program that sits on a shelf. It is important to make sure a program works, and if any part of it doesn't work, identify why it doesn't work so it can be changed to something that does. OSHA's Recommended Practices for Safety and Health Programs include Program Evaluation and Improvement as a core element in effectively managed workplace safety programs.

Exercise: How do you know your safety program is working? Discuss in your groups and be prepared to report out to the class.



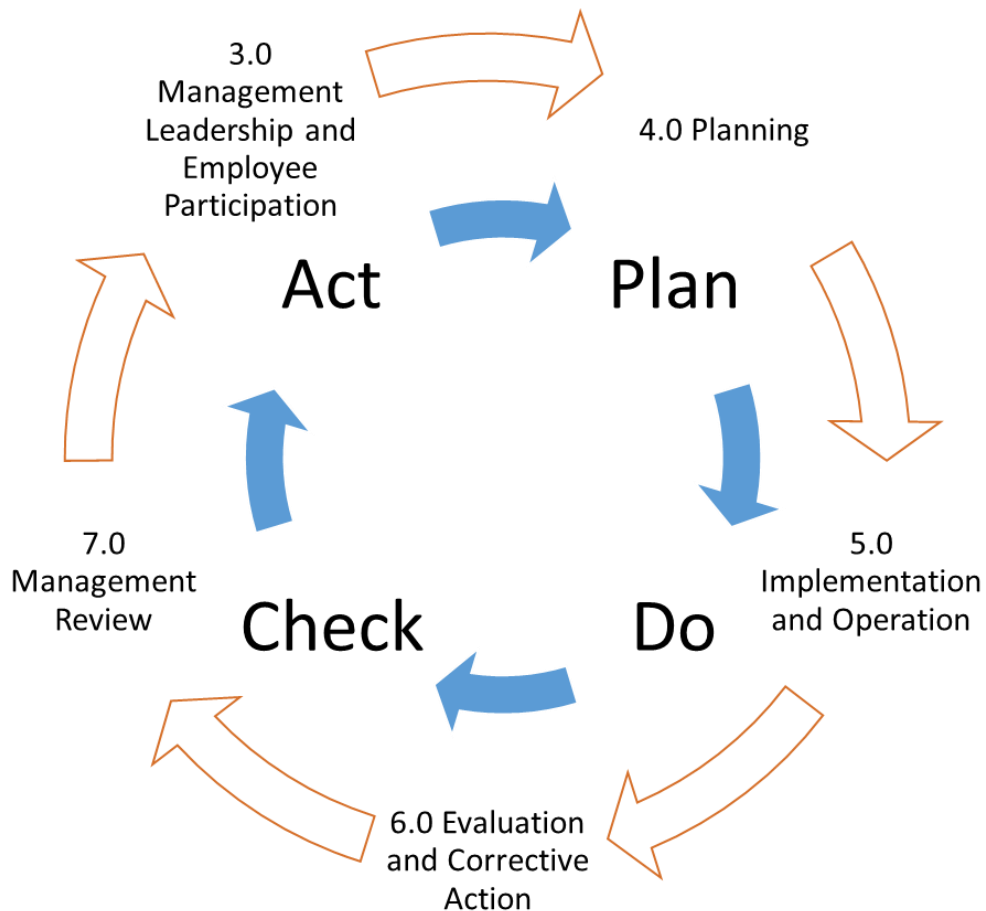
Quality Cycles

W. Edwards Deming introduced the Deming Wheel, or Deming Cycle, as a method of systems improvement. This is now commonly known as the Plan-Do-Check-Act cycle, although Deming is said to have preferred the word “study” instead of the word “check.” (<https://deming.org/>)

Many management systems, such as ISO 9001 (Quality Management Systems) ISO 14001 (Environmental Management Systems), and FEMA’s Emergency Management Cycle are based on this Plan-Do-Check-Act cycle. Similarly, ANSI Z-10 also follows this cycle.

The “check” portion of the cycle ensures that the program is working as intended, and to identify changes that need to be made in order to move closer to meeting the goal of the program. This becomes the continuous improvement cycle.

ANSI Z-10 Elements





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Safety and Health Program Assessment Worksheet

Employer								
Consultant				Contact				
Date	Primary SIC/NAICS Code		Number of employees	Total hours worked				
	Secondary SIC/NAICS Code							
Facility Incidence Rates:	DART IR		Total Recordable IR					
Industry Incidence Rates:	DART IR		Total Recordable IR					
Program Elements								
(Scores) Indicators <i>(Enter most appropriate number)</i>								
Comments: What evidence helped identify/verify adequacy? What improvement action is recommended?								
Legend:	0 = No;	1 = No, Needs major improvements;	2 = Yes, Needs major improvement;	3 = Yes				
	N/A = Not applicable			N/E = Not evaluated;				
1. Hazard Surveys								
			0	1	2	3	N/A	N/E
1. Comprehensive surveys have been conducted of all tasks and processes to identify potential hazards and necessary protective measures.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:								
2. Safety and health inspections of facilities and equipment are performed regularly and all deficiencies are corrected in a timely manner.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:								
3. A hazard reporting and tracking system exists.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:								
4. Hazard surveys are reviewed and updated whenever a change in facilities, equipment, materials, or processes occurs.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:								
5. A process is in place for investigating accidents and near misses to determine root causes.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:								



2. Hazard Prevention and Control

	0	1	2	3	N/A	N/E
6. All necessary safety and health policies, rules, and safe work practice procedures are in place.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

7. Standard engineering controls, administrative controls, and preventative maintenance procedures are in place and appropriate for the types of industry hazards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

8. Personal Protective Equipment is provided, used, and maintained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

9. Proper workplace housekeeping practices are followed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

10. The organization is prepared for emergency situations including ensuring appropriate medical care for injured workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

3. Administration and Supervision

	0	1	2	3	N/A	N/E
11. Goals and objectives for the safety and health program have been established and communicated to all employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

12. Safety and health roles and responsibilities are outlined and assigned to specific personnel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

13. Individuals with assigned safety and health responsibilities have the authority and resources to perform their duties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:



3. Administration and Supervision (Continued)

	0	1	2	3	N/A	N/E
14. Safety and health rules and policies are enforced and unsafe behavior results in corrective action.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
15. A review of the organizations safety and health programs is conducted at least annually and drives appropriate program changes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						

4. Safety and Health Training

	0	1	2	3	N/A	N/E
16. Individuals with assigned safety and health responsibilities have the necessary knowledge, skills, and information to perform their duties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
17. All employees receive appropriate safety and health training on an on-going basis including a safety orientation for all new hires.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
18. Supervisors and managers receive appropriate safety and health training and understand their roles in helping to manage the organization's safety and health program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						

5. Management Leadership

	0	1	2	3	N/A	N/E
19. Upper management is involved in the planning and evaluation of safety and health policies and performance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
20. Management policy establishes clear priority for safety and health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
21. Managers support safety and health policies including allocating necessary resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
22. Managers personally follow all safety and health rules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						

6. Employee Participation



	0	1	2	3	N/A	N/E
23. Employees participate in hazard prevention and control activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
24. Employees take personal responsibility for correcting unsafe conditions and work practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
25. Employees are involved in the planning and evaluation of safety and health policies and performance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						

Worksheet Scoring (Optional)

Total the scores for each sub-element and list them below. The maximum possible score for each element is shown. **A total score is required only if all elements have been evaluated and individually scored.**

Hazard Surveys (15)	<input type="text"/>
Hazard Prevention and Control (15)	<input type="text"/>
Administration and Supervision (15)	<input type="text"/>
Safety and Health Training (9)	<input type="text"/>
Management Leadership (12)	<input type="text"/>
Employee Participation (9)	<input type="text"/>
Total Score (75)	<input type="text"/>

Additional Comments:



Key Performance Indicators

A Key Performance Indicator (KPI) is a measurable value that demonstrates how effectively an organization achieves key business objectives. Leading and/or lagging indicators can be used to measure safety objectives.

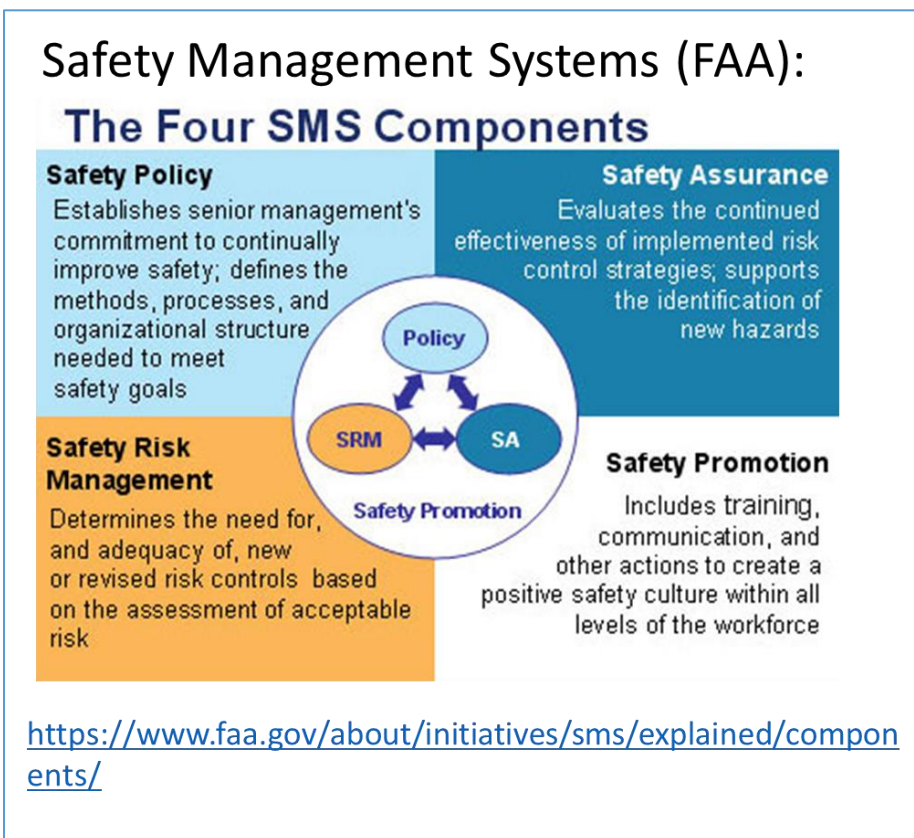
Lagging indicators represent injuries and illnesses, or workplace exposures. Employers may measure their annual Recordable Incident Rates (RIRs) or Lost Workday Case Incident Rates (LWCIR) and compare them to national averages for their industries. Worker’s compensation claims and cost is another lagging indicator that can provide information on how well a safety program is working.

Leading indicators, such as near miss reporting, percent of employees who have completed required safety training, or percent preventative maintenance completed also provide information on how well a safety program is working.

Safety Assurance

Federal agencies with responsibility for safety of the public, such as transportation, healthcare, and food safety, mandate Safety Management Systems, or SMS. These systems have similarities to ANSI Z10 and OSHA’s Recommended Practices for Safety and Health Programs in that they require management commitment, risk analysis and controls (risk management), training, and a means to check the effectiveness of the program. In Safety Management Systems this step is called Safety Assurance, and incorporates practices common to Quality Assurance. Employers who wish to establish exemplary workplace safety programs can incorporate elements of Safety Assurance into their occupational health and safety programs to drive performance. Organizations which have implemented Safety Assurance for other business practices may be able to adapt these tools for their occupational safety programs.

Employers who have implemented systems such as Total Quality Management, Six Sigma, or LEAN can also use these methods to improve occupational health and safety programs.





OSHA[®] FactSheet

The Use of Metrics in Process Safety Management (PSM) Facilities

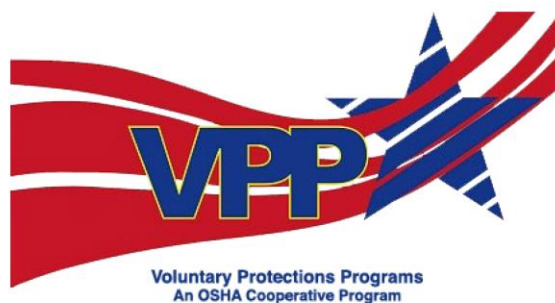
Metrics are measures that are used to evaluate and track the performance of a facility's process safety management program. For facilities that handle highly hazardous chemicals, metrics can be used to quantify how a process has performed historically, how it might perform in the future, and where improvements can be made to keep workers safe.

This document provides employers with examples of metrics that are tracked by facilities that are enrolled in OSHA's Voluntary Protection Program (VPP). Because VPP sites have achieved a high standard of safety excellence, tracking these metrics can make a positive contribution to the effectiveness of an employer's process safety management program.

Two types of metrics—lagging metrics and leading metrics—are often used to track safety performance in process safety management:

- **Lagging Metrics:** Lagging metrics are a retrospective set of metrics that are gathered after the occurrence of an incident that has met an established threshold of severity.¹ Lagging metrics evaluate the causes of an incident and whether the factors that led to the incident indicate potential recurring problems. Metrics for relatively minor or "near miss" incidents are often included in the evaluation of process safety performance.
- **Leading Metrics:** Leading metrics are a preventive set of metrics that reveal the performance of key work processes, operating discipline, and layers of protection that prevent incidents.² Leading metrics can provide an early indication of problems that can be corrected before a major process safety incident occurs.

Whether using leading or lagging metrics, the metrics should be specific to a facility's operations and culture so that they have the best chance at driving effective results.



How Metrics are Tracked by VPP Facilities

A majority of VPP facilities track at least one metric electronically on at least a monthly basis. The metrics are being tracked in a variety of ways. One way is by identifying areas in a PSM program where improvements can be made. For example, during a monthly meeting, the PSM department of one facility identified a problem with tracking the expiration dates for their temporary management of change (MOC) process. The dates were not at the same place, and could not be located. This made it difficult to search databases for the dates. As a solution, the PSM department added a searchable data designation that would enable each MOC change requestor to enter a duration of no longer than 180 days for any temporary MOC. This not only enabled the PSM department to identify expiration dates for temporary MOCs, but made it easier for the change requestor to establish durations or time limits for temporary MOCs.

Another facility tracked the number of overdue items in an effort to reduce the number of tasks that had not been completed in a timely manner.



By holding monthly meetings to review the overdue items, the management team was able to prioritize the completion of those items and identify outstanding projects that were in need of additional resources.

What Metrics are Tracked by VPP Facilities

Based on the responses received from VPP facilities, OSHA compiled a list of areas within the PSM program and the metrics that were used by VPP facilities to track performance in those areas.

Lagging Metrics

- **Injury and/or Incident Reports Related to Process Safety:** Incident reports are created after an incident investigation has been completed. Incident reports typically describe the causes of an incident that were identified by the investigation, and the corrective measures that should be taken to address those causes.³ VPP sites have used metrics to track a number of process safety incidents and injuries including:
 - Near miss incidents reported that did or could have led to a loss of containment;
 - Recordable injuries and first-aid incidents due to loss of primary containment;
 - Number of incidents vs. number of incidents with formal reports; and
 - Status of incident investigations.
- **Loss of Containment:** A Loss of Containment is an unplanned or uncontrolled release of materials. For incidents related to loss of containment, VPP facilities have tracked:
 - The number of incidents;
 - Whether there was primary or secondary containment; and
 - The cause and location of the incident.

Leading Metrics

- **Management of Change (MOC):** An MOC is a system that identifies, reviews, and approves all modifications to equipment, procedures, raw materials, and processing conditions,

other than “replacements in kind,” prior to implementation.⁴ There are various types of changes that occur in the workplace where a facility may want to track management of change to reduce the likelihood of system failures or catastrophic events. For MOC, VPP facilities have tracked:

- Overdue MOCs;
- Approved MOCs;
- Open MOCs; and
- MOCs performed each month.
- **Preventive Maintenance (PM):** Preventive maintenance is maintenance that is regularly performed on a piece of equipment to decrease the likelihood of it failing. In their maintenance efforts, VPP facilities have tracked:
 - Completion rates;
 - Open items;
 - Overdue safety critical PMs; and
 - Number of inspections.
- **Process Hazard Analysis (PHA):** A process hazard analysis is a systematic effort to identify and analyze the significance of potential hazards associated with the processing and handling of highly hazardous chemicals.⁵ A PHA analyzes potential causes and consequences of fires, explosions, releases of toxic or flammable chemicals, and major spills of hazardous chemicals. It monitors equipment, instrumentation, utilities, human actions, and external factors that might affect the process.⁶

VPP facilities have monitored the PHA process by tracking:

- PHA actions open;
- PHAs overdue;
- PHAs completed;
- Scheduled vs. completed PHAs;
- Status of PHA/incident recommendations; and
- Status of scheduled PHA revalidations.

Lagging Metrics

Injury Reports • Near Misses
Recurring Events • Days Away (DART)

“The Rear-View Mirror”

(cannot be influenced or changed)

INCIDENT

Leading Metrics

Preventive Maintenance • Management of Change
Process Hazard Analysis • Training

“The Road Ahead”

Predictive

Modifiable

Preventive



- **Mechanical Integrity (MI):** Mechanical integrity is a program that ensures that equipment is properly designed, installed in accordance with specifications, and remains fit for its purpose.⁷ As part of the MI program, facilities will collect data on planned inspection work for safety critical equipment and any data that can provide solutions to correct weak performance. VPP facilities have been tracking the following leading metrics as part of their MI program:
 - Number of inspections scheduled (relief valve, piping, pressure vessel, storage tank);
 - Status of variance requests;
 - Routine inspections; and
 - Number of overdue work orders.
- **Training:** Training is the practical instruction of job task requirements and methods. VPP facilities have tracked:
 - Safety/refresher training completed;
 - Training planned vs. completed;
 - Training exceptions; and
 - Contractor training.
- **Safety Action Item:** A safety action item is a document, event, task, activity, or action that needs to take place, such as a follow-up on PHA, Incident Investigation, MOC, or Compliance Audit recommendations. It may also include planned inspections, tests, maintenance activities, training, or other safety-related activities. VPP facilities have tracked:
 - Past action items;
 - Initiated vs. completed items; and
 - Open action items.

Contractor Metrics

Some contractors also track their own metrics while working on a VPP host site. Some of these metrics include:

- Types of near miss incidents reported;
- Types of first-aid cases;
- Incidents involving property damage at host site;
- Job hazard analysis completed; and
- Number of audits and corrections.

Conclusion

Metrics can play a valuable role in revealing the strengths and weaknesses of a facility's performance. However, the habit of tracking metrics will not alone improve process safety. Metrics should be used along with a variety of other methods to work towards achieving and maintaining outstanding process safety performance.

For more information on process safety management, see: www.osha.gov/SLTC/processsafetymanagement.

For additional guidance on developing process safety metrics, please refer to:

- ANSI/API RP 754, *Process Safety Performance Indicators for the Refining and Petrochemical Industries*, Second Edition.
- Center for Chemical Process Safety (CCPS), *Guidelines for Process Safety Metrics*
- CCPS "Process Safety Leading Indicators Industry Survey" http://www.aiche.org/sites/default/files/docs/pages/leading-indicator-survey_0.pdf

¹ *Guidelines for Process Safety Metrics*, Center for Chemical Process Safety, 2010, p. 20.

² Id. at p.23.

³ *Process Safety Management Guidelines for Compliance*, DOL, OSHA, 1994. www.osha.gov/Publications/osha3133.html

⁴ *Guidelines for Process Safety Metrics*, Center for Chemical Process Safety, 2010, p. xvi.

⁵ *Process Safety Management Guidelines for Compliance*, DOL, OSHA, 1994. www.osha.gov/Publications/osha3133.html

⁶ Id.

⁷ *Guidelines for Process Safety Metrics*, Center for Chemical Process Safety, 2010, p. xvi.

This is one in a series of informational fact sheets highlighting OSHA programs, policies, or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



www.osha.gov (800) 321-OSHA (6742)

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Activity: Review the Federal Transit Administration (FTA) fact sheet on Safety Management Systems on the next two pages. Discuss with your group the similarities and differences between FTA's Safety Management System and the elements of OSHA's Recommended Practices for Safety and Health Programs that we have discussed so far. Are there any learnings from FTA's Safety Management System that can improve your employee safety program? Be prepared to share with the class.



Message from the Administrator

Why SMS?

The Federal Transit Administration (FTA) is committed to enabling one of the nation's safest modes of travel to remain safe for today's riders and generations to come. Yet the industry remains vulnerable to catastrophic events, the loss of experienced personnel, and the pressure to do more with less.

To help a safe industry become even safer, FTA intends to adopt Safety Management Systems (SMS) as our new safety regulatory framework. With a focus on organization-wide safety policy, formal methods for identifying hazards, controlling their potential consequences, continually assessing safety risk, and promoting an effective employee safety reporting system, SMS provides a new structure for addressing expectations specified by Congress in the Moving Ahead for Progress in the 21st Century Act (MAP-21).

SMS is an agency-wide, collaborative approach that ensures the necessary organizational structures, accountabilities, policies and procedures are in place to direct and control resources to optimally manage safety. **SMS is scalable to organizations of any size and flexible enough to be effective in all transit environments, from the largest urban to the smallest rural transit system.**

The basic premise of SMS is a simple one. Every public transportation agency that assumes responsibility for the safety of its employees and passengers should have a system in place to identify risks and act upon them. For a small bus transit agency, that safety management system is going to be fairly straightforward and less complex to implement than in a large transit agency. SMS provides a framework

continued on back

focused on common-sense, cost-effective safety requirements that are established collaboratively with state and industry partners. It adds value without adding unreasonable costs, and ensures that resources are applied directly to the most critical risks. Because SMS is based on the principle that "one size does not fit all," SMS enables transit agencies of all sizes to determine their own individual safety risks and target their resources on those risks.

As we move forward together, we have the opportunity to broaden our conversation regarding safety risk in the public transportation industry. SMS generates a context with the necessary interfaces for candid discussions to focus local, state and Federal attention on those elements and aspects of transit operations most critical to safe public transportation.

Adopting SMS further deepens the industry's commitment to the safety of its passengers and employees. Moreover, **SMS offers the promise of a stronger culture for labor and management to work together to solve safety problems.** SMS promotes greater communication, discussion and understanding of safety issues and concerns through training, enhanced work practices, and improved labor-management partnerships so that risk are jointly identified, prioritized and controlled. I look forward to working with you on integrating SMS principles into public transportation.

safety management systems

*One size does not fit all...
SMS fits ALL sizes.*



<p>1. Safety management systems (SMS) in brief</p> <p>SMS is about strategically applying resources to risk. It is based on ensuring that a transit agency has the necessary organizational infrastructure in place to support decision-making at all levels regarding the assignment of resources. This is essential to effectively manage safety risks during the delivery of service. The elements of an organizational infrastructure include:</p> <ul style="list-style-type: none"> • Defined roles and responsibilities • Strong executive safety leadership • Formal safety accountabilities and communication • Effective policies and procedures • Active employee involvement 	<p>• Partnership and knowledge sharing between public transportation agencies, state agencies, and the FTA</p> <p>• A positive safety culture that supports safety communication and reporting</p> <p>5. SMS Components</p> <p><i>SMS is comprised of four components:</i></p> <ul style="list-style-type: none"> • Safety Policy – safety commitment and accountability, safety roles and responsibilities, safety resource allocation to support safety performance targets • Safety Risk Management – safety hazard identification, safety risk-based analysis and implementation of safety risk controls • Safety Assurance – monitoring of safety risk controls to ensure they are achieving their intended objective while assessing the need for new risk control strategies • Safety Promotion – achieving the safety mission through clear safety communication channels and safety training programs 	<p>8. SMS and our current safety structure</p> <ul style="list-style-type: none"> • SMS builds on existing transit agency resources, both human and technical, and refocuses agency activities to more effectively utilize tools and existing talent and expertise within the transit agency. • SMS ensures that safety decision-making is integrated into the management processes that drive the organization. <p>9. Security, emergency preparedness and SMS</p> <ul style="list-style-type: none"> • When considering overall risk to passengers, employees and the transit agency, SMS ensures that transit management integrates security and emergency preparedness information into its assessments of risk. • SMS helps management and employees understand their total safety risk exposure and apply resources strategically and effectively.
<p>3. Key SMS activities</p> <ul style="list-style-type: none"> • Collecting and analyzing data and information to proactively identify hazards • Taking actions to mitigate the risk associated with the potential consequences of hazards • Ongoing monitoring of risk through a system of safety controls • Using data to support allocation of resources that promote and support safety performance 	<p>6. Benefits of SMS</p> <ul style="list-style-type: none"> • An SMS helps agencies see the whole picture when it comes to risk. The pedestrian fatality in a crosswalk may be avoided when drivers report near misses, supervisors proactively investigate the operating environment, and management supports organizational accountability rather than individual blame. This leads to changes in procedures and training that result in reduced risk for pedestrians. 	<p>10. SMS and safety culture</p> <ul style="list-style-type: none"> • SMS facilitates a shift in the attitudes regarding safety within a transit agency, by changing both leadership and employee perceptions of safety and its importance in day-to-day activities. • SMS places a strong emphasis on safety training and safety communication to guarantee that the entire transit agency fully understands SMS policies and procedures, and supports an effective safety-reporting environment within all levels of the workforce. • SMS promotes an environment where management and employees work together to identify risks and act together to control them.
<p>4. Key features of SMS</p> <ul style="list-style-type: none"> • Accountability for the management of safety at the highest level of the transit agency • Collaboration between management and labor to ensure agreement on safety risk priorities • Structured and strategic decision making for safety resource allocation • Enhanced service safety performance through proactive safety risk analyses • Increased confidence in safety risk controls through safety assurance 	<p>7. The role of senior management in SMS</p> <ul style="list-style-type: none"> • Regardless of the size, mode, or operating characteristics of a transit agency, the success of SMS depends on the extent to which senior management understands and accepts its role of accountability in promoting safety and managing transit agency safety programs. • Ensuring employee partnership and participation in all safety matters. 	



Audits

One tool in Safety Assurance that is taken from the field of Quality Assurance is the audit. Audits are useful tools for evaluating the effectiveness of a management system, however, the ability to prepare and conduct an effective audit is a learned skill. The American Society for Quality is a good source of information on auditing programs:

<http://asq.org/learn-about-quality/auditing/>

ANSI/ISO 19011 Guidelines for Management System Auditing is another useful source of information on systems audits. ANSI Z10, Appendix L, provides a framework for Occupational Safety and Health Program audits. An effective audit is organized and designed to meet a specific goal. Specific audit items that support that goal are then selected for evaluation in the audit. Sources of objective evidence are then identified for review for each audit item. These include:

- Documents, such as written programs or procedures;
- Records, which could include training records or records required by a specific health and safety program such as respirator fit tests or canceled confined space permits;
- Interviews with employees, supervisors, program managers, or others who could provide input on how the program is working. Individuals to be interviewed should be selected before the audit begins;
- Observations such as a physical observation of the work environment or employees performing work.

Each piece of evidence is reviewed to determine whether the criteria for the audit item is met. Terminology used in auditing could include words such as:

- Acceptable/not acceptable;
- Conformance/non-conformance;
- Met/not met.

Auditors should be objective. For example, it would not be appropriate for an auditor to audit a program that he/she managed. Internal auditing departments or external consultants who have sufficient knowledge of the subject matter can provide a fresh and unbiased view.

Once the audit is complete, it should be summarized in a report that can be distributed to management and involved parties. Terminology found in audits generally includes:

- Finding: Results of an evaluation of collected evidence against audit criteria;
- Observation: Statement of fact substantiated by objective evidence.

Findings and observations can be positive or negative. A positive finding or observation may be a best practice that can be shared with other organizations. A negative finding or observation shows room for improvement. Whenever room for improvement is identified during an audit, an action plan should be developed, given a due date, and assigned to a responsible person to implement. Progress towards implementation should be tracked to completion. Once complete the program should be updated and implemented as the next continuous improvement cycle begins.



Abatement Tracking

Audits and program evaluations serve to identify areas of improvement. If findings or corrective actions are identified, the organization must follow up with a plan to address findings and other deficiencies.

It is helpful to develop an action plan, including an action item list, to track progress in identifying deficiencies and areas of improvement, similar to the action item tracking log discussed in Module 4. Interim controls may be necessary if corrective actions cannot be implemented in a timely manner, and must provide at least a level of protection equivalent to compliance with the standard.

Employees should be involved in determining appropriate corrective actions, including interim controls. It is helpful to review progress on the action items list at safety committee meetings.

Once work is complete on an action item, it can be closed with appropriate documentation.