

SMS Elements

1. Leadership and Management Commitment
2. Stakeholder Engagement
3. Risk Management
4. Operational Controls
5. Incident Investigation, Evaluation, and Lessons Learned
6. Safety Assurance
7. Management Review and Continuous Improvement
8. Emergency Preparedness and Response
9. Competence, Awareness, and Training
10. Documentation and Record Keeping

SMS Elements

1. Leadership and Management Commitment

Top Management

- Establish measurable goals and objectives
- Accountable for continuous improvement
- Review performance and communications
- Asses the safety culture

Management

- Assure effective process, procedures and training to meet objectives
- Assess, evaluate, and adjust as needed to meet objectives
- Foster continued improvement

Employees

- Follow management's process and procedures to meet objectives
- Identify improvement
- Reveal risks

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2. Stakeholder Engagement

Internal focus

- Assure full employee engagement and learning

External focus

- Move from awareness to dialogue to help reduce risk and share safety performance

- Identify and resolve concerns about transparency on safety matters both internally and externally.

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3. Risk Management

- Build upon the fundamentals of risk management – *“Know your system AND the environment around it to recognize potential threats and consequences”*
- Start with emphasis on data and data quality
- Identify risks – *“What Can Go Wrong?”*
- Take actions to mitigate risks
- Perform periodic analyses – at least once annually
- Report to Top Management on risk analysis, mitigation methods and effectiveness

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4. Operational Controls

- Operating Procedures – Reviewed annually for lessons learned
- Safe Work Practices – Address situations where “stop work” and procedural deviations are encouraged for safety
- System Integrity
- Management of Change
- Use of Contractors

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5. Incident Investigation, Evaluation and Lessons Learned

- The pipeline operator shall maintain a detailed procedure for investigating incidents and near misses that led, **or could have led,** to a loss of life or serious injury.
 - Identify the cause, contributing factors and lessons
 - Evaluate the emergency response
 - Develop recommendations for improvement
 - Update risk assessment plan
 - Communicate the investigation findings Internally and Externally
 - Track corrective and preventative actions
 - Learn from past events

SMS Elements

6. Safety Assurance

- The pipeline operator shall demonstrate the proper application of its SMS and progress toward effective risk management and improved pipeline safety performance through the following sub-elements:
 - Audit
 - Evaluation
 - Employee Reporting and Feedback
 - Analysis of Data
 - Performance Evaluation
 - Evaluation of Safety Culture
 - Evaluation of Maturity

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7. Management Review and Continuous Improvement.

- Management review ensures the connection with Top Management
- Continuous improvement is an important theme
- Review performance at least annually by Top Management
- Shows how effective and the opportunities to continuously improve
- Evaluate and use technology for improvements

SMS Elements

8. Emergency Preparedness & Response Releases

- Weather events
- Security threats
- Fires
- Utility losses impacting operations
- Pandemics
- Civil disturbances
- Review O&M plans when new threats are identified as a results of an accident

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- What else must be considered?
- Lessons learned to improve the process
 - What worked and what didn't?
 - How do lessons from drills and actual response feed into plans and procedures?
- Periodic review and updating of the plan
- **We need to know who our partners in response are and communicate with them before an emergency.**

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- **What should plans/procedures include?**
 - Internal and external notification requirements
 - Identification of response resources and interfaces
 - Recognition and use of Unified Command/Incident Command Structure
 - Safety, health, and environmental protection processes
 - Communication plan
 - Training and drills, including involvement of external agencies and organizations

SMS Elements

9. Competence, Awareness and Training

- **Assure competence at every level for all personnel.**
 - Employees
 - Contractors
 - Sub contractors
 - Management
- Communicate responsibilities and authority for each member.
- Create confidence and proactive positive culture.

SMS Elements

10. Documentation and Record Keeping

- **Data**

- Data and communication drive the PSMS
- **High quality and current Data** is the basis for decision making and should be readily available across the entire organization

- **Documentation**

- Provides the dual purpose of setting expectations and recording results
- Includes Policy, Objectives, Methods, etc.

Safety Management Systems

▪ SMS requires:

- Intentional and systematic actions
- Diligence and oversight
- Involvement at all levels
- COMMUNICATION

▪ The Rewards of a properly implemented SMS are:

- Enhanced pipeline safety
- Increased process efficiencies
- Increased system reliability
- Reduced costs