



Serious Incident and Fatality (SIF) Prevention Model

TOOLS FOR STEP 1: PLAN

Ensure Leadership Commitment and Organizational Readiness

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Plan Tool 1: Documentation Review

Organizations need a full view of their SIF risks and identify objectives to reduce their SIF risks by strengthening safeguards, building capacity, and driving performance.

Guidance: Assemble the following information and documents to support a review of the company’s Safety Management System (SMS) and assessment of organizational readiness. As applicable, indicate whether they are a) provided, b) provided but outdated, c) cannot be located, or d) do not exist. Also provide any other relevant remarks.



Documents to Assemble A : Organizational

A1:

Injury/illness data (OSHA or country specific, ASTM, actual SIFs, potential SIFs, etc.) for the operation for the last three years, plus year-to-date.

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

A2:

Workers’ compensation claims for the operation for the last three years, plus year-to-date.

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

A3:

A description or procedural document describing how injuries and illnesses are reported, investigated, tracked, and closed out, as appropriate.

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

A4:

The latest external or internal annual report that includes information and metrics about the company’s occupational health and safety efforts. Examples include KPI, annual or sustainability reports.

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

A5:

An organizational chart that includes EHS/safety personnel and where the function is located within the organizational structure.

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

A6:

Safety and health policy statement. May be included within the organization’s overall operating policy.

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

A7:

A written Safety Management System program outlining roles and responsibilities, risk determination, controls, and corrective action monitoring. Examples include VPP, IIPP, ISO, or a similar program incorporating safety aspects.

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:



Documents to Assemble B : Key Safety and Health Elements/Programs

B1: LOTO/Hazardous Energy Control

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B2: Confined Space Entry

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B3: Hazard and Risk Assessments

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B4: Hazard Communication

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B5: Electrical Safety

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B6: Powered Industrial Truck

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B7: Fall Protection/Working at Height

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B8: PPE Program

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B9: Driver Safety

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B10: Change Management

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B11: Excavation and Trenching

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B12: Overhead Lifting/Crane Safety

FULLY PROVIDED

PROVIDED, BUT OUTDATED

CANNOT BE LOCATED

DOES NOT EXIST

OTHER:

B13:

Hot Work or high-risk tasks requiring Special Work Permits

<input type="checkbox"/> FULLY PROVIDED	<input type="checkbox"/> PROVIDED, BUT OUTDATED	<input type="checkbox"/> CANNOT BE LOCATED	<input type="checkbox"/> DOES NOT EXIST
<input type="text"/> OTHER:			

B14:

Construction Safety

<input type="checkbox"/> FULLY PROVIDED	<input type="checkbox"/> PROVIDED, BUT OUTDATED	<input type="checkbox"/> CANNOT BE LOCATED	<input type="checkbox"/> DOES NOT EXIST
<input type="text"/> OTHER:			

B15:

Contractor Safety Management

<input type="checkbox"/> FULLY PROVIDED	<input type="checkbox"/> PROVIDED, BUT OUTDATED	<input type="checkbox"/> CANNOT BE LOCATED	<input type="checkbox"/> DOES NOT EXIST
<input type="text"/> OTHER:			

B16:

Recent Industrial Hygiene surveys (e.g., sound, ergonomic surveys, air quality, etc.)

<input type="checkbox"/> FULLY PROVIDED	<input type="checkbox"/> PROVIDED, BUT OUTDATED	<input type="checkbox"/> CANNOT BE LOCATED	<input type="checkbox"/> DOES NOT EXIST
<input type="text"/> OTHER:			

B17:

Copies of recent corporate, regional, regulatory, or third-party compliance and/or safety and health audits/inspections

<input type="checkbox"/> FULLY PROVIDED	<input type="checkbox"/> PROVIDED, BUT OUTDATED	<input type="checkbox"/> CANNOT BE LOCATED	<input type="checkbox"/> DOES NOT EXIST
<input type="text"/> OTHER:			

B18:

Copies of recent employee safety and health perception or culture surveys

<input type="checkbox"/> FULLY PROVIDED	<input type="checkbox"/> PROVIDED, BUT OUTDATED	<input type="checkbox"/> CANNOT BE LOCATED	<input type="checkbox"/> DOES NOT EXIST
<input type="text"/> OTHER:			

B19:

Machine Guarding

<input type="checkbox"/> FULLY PROVIDED	<input type="checkbox"/> PROVIDED, BUT OUTDATED	<input type="checkbox"/> CANNOT BE LOCATED	<input type="checkbox"/> DOES NOT EXIST
<input type="text"/> OTHER:			

B20:

Other:

<input type="checkbox"/> FULLY PROVIDED	<input type="checkbox"/> PROVIDED, BUT OUTDATED	<input type="checkbox"/> CANNOT BE LOCATED	<input type="checkbox"/> DOES NOT EXIST
<input type="text"/> OTHER:			

Plan Tool 2: Organizational Gap Analysis

The following items can be administered using a survey to collect perceptions across employment levels. Identify a group of operational and safety leaders to complete this organizational gap analysis individually.

Compile and compare as a group as an alignment check and evidence of organizational readiness. Identify, discuss, and prioritize common gaps and address these gaps as appropriate. Track corrective or preventative actions to completion.



1:

We have a culture that prioritizes safety and health, and worker protection that is maintained while meeting production and other business goals.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

2:

The needs of a diverse workforce are recognized and addressed.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

3:

The company does well to attract, retain, and develop safety professionals.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

4:

Senior leaders demonstrate that safety is a core value and that it is part of all aspects of the business.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

5:

The company ensures that we have the necessary resources (people, money, and time) to support the organization's safety and health programs and goals.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

6:

Roles and responsibilities for safety and health are defined for all levels and departments of the organization.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

7:

Frontline operational leaders and senior managers spend time in the field observing work, connecting, and learning from employees to understand the safety and health risks and how work actually gets done.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

8:

The company focuses more on learning from safety successes and failures, rather than blame and discipline.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

9:

Frontline workers are meaningfully involved and engaged in safety.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

10:

New, inexperienced, and transferred workers are adequately prepared to recognize hazards and to perform their work tasks safely.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

11:

There is a structured process for frontline workers and management to collaborate on safety.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

12:

A process is in place to IDENTIFY safety hazards, particularly for high-hazard activities, conditions, and events.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

13:

A process is in place to ASSESS and PRIORITIZE risk.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

14:

A process is in place to CONTROL or eliminate hazardous conditions, particularly for high-risk work.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

15:

Written safe operating procedures, safe work practices, or pre-task plans exist and are used, especially for high-risk tasks.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

16:

Programs are in place to encourage employee engagement in safety and health activities.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

17:

Safety training is effective and goes beyond the minimum requirements for complying with regulations.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

18:

There is frequent contact and communication between frontline employees and management regarding safety and health.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

19: The company goes above and beyond regulatory compliance to ensure the safety and health of the workforce.



If there is a clear gap, please describe:

20: Equipment is inspected regularly and maintained to ensure safe operations.



If there is a clear gap, please describe:

21: Safety issues are identified, assessed, and managed for contractors and temporary workers, the same as for employees.



If there is a clear gap, please describe:

22: Emergency response planning and drills take place.



If there is a clear gap, please describe:

23: Incident investigations focus on learning and tracking corrective or preventative actions to completion.



If there is a clear gap, please describe:

24: Audits take place to identify gaps in safety and to drive continuous improvement.



If there is a clear gap, please describe:

25: Corrective and preventative actions (including work orders) related to safety are prioritized and closed out in a timely fashion.



If there is a clear gap, please describe:

Teams should develop action plans to improve scores in red areas first, then yellow and green.

Notes or Comments:



Plan Tool 3: SIF-Related Employee Perception Data

Consider the following survey items to collect employee perceptions related to SIF prevention. A sampling of these items could be administered as a stand-alone survey or select items can be incorporated into an existing employee engagement survey. Individual items could also be used to collect feedback from employees during in-person training sessions, toolbox talks, or pre-shift meetings.

Compile responses and relevant notes and check for alignment among various employment levels. Insights and data trends can also serve as evidence of employee engagement and organizational readiness. Identify, discuss, and prioritize common perceptions to reinforce or address them as appropriate; track necessary corrective or preventative actions to completion.



1: Management prioritizes and acts on preventing serious incidents and fatalities.



If there is a clear gap, please describe:

2: Worker safety and health are a core value of the organization that is not compromised by short-term financial goals.



If there is a clear gap, please describe:

3: After an incident or near miss, management is more concerned with correcting the hazard than assigning blame or issuing discipline.



If there is a clear gap, please describe:

4: My supervisor is more concerned about identifying the potential for serious incidents and fatalities than about the company's safety statistics (TRIR, DART, EMR).



If there is a clear gap, please describe:

5: Reporting of potentially serious hazards is encouraged.



If there is a clear gap, please describe:

6: I can report hazardous conditions without fear of negative consequences.



If there is a clear gap, please describe:

7:

I am confident that appropriate corrective actions will be taken to resolve conditions that could cause fatalities and serious incidents.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

8:

Workers verify that they have proper protections and controls in place before starting a high-risk task.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

9:

High-severity hazards are not overlooked to get the job done.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

10:

Workers have the ability to stop work until unsafe conditions are corrected.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

11:

Equipment labeling and signage are clear and easily understood.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

12:

Equipment controls and switches are easy to understand.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

13:

Work shifts allow for adequate rest; fatigue is uncommon.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

14:

The work environment allows for the completion of high-risk tasks without distraction.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

15:

Adequate time is provided for the safe completion of high-risk tasks, regardless of production pressure.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

16:

There is ample opportunity to stay hydrated during the workday.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

17:

Personnel assigned to perform high-hazard tasks have the skills to perform the tasks safely.

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

18:

Key safety and health programs are supported with the necessary resources (personnel, time, budget, etc.).

VERY FALSE

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VERY TRUE

If there is a clear gap, please describe:

19:

There is sufficient staff in my work group to get work done safely.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

20:

Frontline workers participate in setting goals for safety.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

21:

Workers are informed of actions taken to resolve hazards with serious incident or fatality potential.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

22:

Newly assigned workers are provided with safety training specific to their work responsibilities.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

23:

Clear terminology is used for work instructions and procedures involving high-severity hazards.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

24:

Adequate training is provided regarding the potential for serious incidents or fatalities occurring.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

25:

Corrective or preventative actions are taken promptly when high-severity hazards are brought to management's attention.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

26:

I receive safety training on high-severity hazards related to the tasks I will perform each day.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

27:

Workers participate in the development of safe work practices.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

28:

Processes and equipment are disabled and not operated until defective safety devices have been repaired or replaced.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

29:

Workers are trained to identify high-severity hazards and to control or reduce the risk.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

30:

Process changes are communicated well in advance.

VERY FALSE

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VERY TRUE

If there is a clear gap,
please describe:

31: Procedures, training, and work instructions are adequate to address high-severity hazards.



If there is a clear gap,
please describe:

32: A formal hazard assessment is performed when process changes are made.



If there is a clear gap,
please describe:

33: Unexpected equipment repair is unusual.



If there is a clear gap,
please describe:

34: High-risk operational processes are equipped with adequate warning mechanisms.



If there is a clear gap,
please describe:

35: Personal protective equipment does not interfere with my ability to do my job safely.



If there is a clear gap,
please describe:

Notes or Comments:



Teams should develop action plans to improve scores in red areas first, then yellow and green.

Plan Tool 4: Feedback from Key Stakeholder Groups

Guidance: Use the following questions to guide stakeholder meetings with senior leaders, safety and health professionals, frontline leaders, and frontline workers. Collect feedback either formally through a survey or informally through job observations and other existing meeting channels.



Senior Leadership Feedback Questions:

This group will vary depending on the size and scope of the operation. In general, this group includes individuals with responsibility over company operations with the following titles: CEO, COO, vice president, director, general manager, manager, etc.

- » What processes do you have in place to identify, prioritize, and manage health and safety risks?
- » What processes or work tasks concern you the most for potential SIFs?
- » What is the process for allocating resources for health and safety?
- » What is your view of the role of leadership in health and safety?
- » What is your view of the role of frontline workers in health and safety?
- » Do you feel that production is prioritized over safety and health?
- » What performance metrics do you monitor to determine the effectiveness of your health and safety system or programs?
- » Is there executive compensation tied to the outcome of lagging or leading safety and health metrics?
- » Do you report any safety and health performance metrics to outside entities (shareholders, regulatory bodies, NGOs, etc.)?
- » Who are your safety and health stakeholders and what are their expectations?
- » How has the safety and health management system been integrated into business operations?
- » How do you manage change in your organization?
- » What processes or work performed in your organization concerns you the most for potential SIFs?

Senior Leadership

Notes and Observations:

Safety and Health Professionals Feedback Questions:

This group includes individuals whose primary responsibility is promoting and managing the safety and health of the company, division, business unit, or department.

- » What are your safety and health priorities? How is safety and health training planned and facilitated?
- » What processes or work tasks concern you the most for potential SIFs?
- » Do you feel there are adequate resources dedicated to safety and health?
- » What is the process for obtaining capital funds for key safety and health initiatives?
- » Do you feel there is enough safety and health staff to perform the required duties?
- » Do you feel that production is prioritized over safety and health? Explain the incident investigation process including initial investigation, determination of root cause, assignment of countermeasures, and follow-up on the completion of corrective actions.
- » How are near misses reported and what follow-up is conducted?
- » How much of your time is spent reactively “putting out fires”?
- » What are the barriers to achieving desired safety maturity?
- » Do you feel you are properly trained and given access to professional development opportunities? What are the processes, operations, or risks that give you the greatest cause for concern with respect to SIF potential?

Safety and Health Professionals

Notes and Observations:

Frontline Supervisors Feedback Questions:

This group includes individuals whose primary responsibility is to supervise frontline workers in their daily activities.

- » Tell me about the production pressures you are facing.
- » What processes or work tasks concern you the most for potential SIFs?
- » How do you feel your frontline workers are responding to the demands of production?
- » What is the process for how new workers become trained or acclimated to their specific jobs?
- » How are risks or hazards of the job emphasized or shared with frontline workers?
- » Do employees have the authority to stop operations if they feel something is unsafe or “not quite right”?
- » Do you feel that production is prioritized over safety and health?
- » How often do employees actually stop production operations, and what was the response the last time this occurred?
- » How do you involve frontline workers in decisions on how they perform job duties?
- » Are toolbox talks or pre-shift meetings conducted?
- » What are the risks that give you the greatest cause for concern?

Frontline Supervisors

Notes and Observations:

Frontline Workers Feedback Questions:

This group includes individuals who perform work for the organization and are directly interacting with equipment, tools, parts, customers, visitors, etc.

- »» What safety and health expectations does the company have for you?
- »» What processes or work tasks concern you the most for potential SIFs?
- »» Do you feel senior leadership has a good understanding of the hazards you face on a daily basis?
- »» Do you feel adequate controls are in place to protect you from potential SIFs?
- »» Do you feel you have the authority to stop work if you feel unsafe?
- »» How would you describe the safety maturity of the organization?
- »» Tell me about the last incident that did result or could have resulted in a serious injury or fatality.
- »» Do you feel you are involved in organizational decisions related to your safety and health?
- »» Do you feel that production is prioritized over safety and health?
- »» Do you ever have to bypass safety controls due to other priorities or pressures?
- »» Are you comfortable reporting safety and health issues?
- »» Do you feel action will be taken?

Frontline Workers

Notes and Observations:

Plan Tool 5:
Setting Expectations for Leadership

Review the following expectations for leadership and evaluate them against existing roles and responsibilities that may be detailed in the company’s safety management system or safety and health policy. Ensure that leaders at all levels understand and express commitment to upholding the expectations identified for their employment level. Make modifications to roles and responsibilities as needed to best support the organization’s SIF prevention strategy and related activities.

Executive and Senior Leadership Expectations:

- » Leaders shall set the tone of safety and assign responsibility for overall Safety Management System responsibilities (should be officers of the company or high-ranking officials).
- » Establish acceptable levels of risk for the organization.
- » Determine executive engagement and support process for learning and improving from SIF risk, potential SIF, and actual SIF events.
- » Establish appropriate metrics to drive continuous improvement to reduce risk associated with high-severity outcomes to levels that are acceptable.
- » Set the tone for a psychologically safe environment, learning, and improvement culture.
- » Listen to each elevated concern to understand the opportunities for improvement, and provide feedback that is timely and actionable.
- » Provide the necessary resources to address high-severity hazards, including assessment of risk and appropriate defenses to control and/or mitigate outcomes of events and incidents.
- » Drive accountability for risk reduction through reviews and metrics, and understand what the potential SIF activities and drivers are within the business.

Notes and Observations:

Notes and Observations:



For more information visit nsc.org/sif