1 Commit to Process Safety

To commit to process safety, facilities should focus on:

- Developing and sustaining a culture that embraces process safety
- Identifying, understanding and complying with codes, standards, regulations, and laws
- Establishing and continually enhancing organizational competence
- Soliciting input from and consulting with all stakeholders, including employees, contractors, and neighbors

1.1 Process Safety Culture

Process safety culture is defined as the combination of group values and behaviors that determine the manner in which process safety is managed.

Maintain a dependable practice:

- Establish Process Safety as a core value
- Provide strong leadership
- Establish and enforce high standards of performance
- Document the process safety emphasis and approach

Develop and implement a sound culture:

- Maintain a sense of vulnerability
- Empower individuals to successfully fulfill their safety responsibilities
- Defer to expertise
- Ensure open and effective communications
- Establish a questioning / learning environment
- Foster mutual trust
- Provide timely response to process safety issues and concerns

Monitor and guide the culture:

- Provide continuous monitoring of performance
The Business Leader is Accountable for requirements:

- (18) Appoint for each life cycle phase of an Asset, an [Asset] Manager, including the Project Manager during the design and construction phase, with single-point accountability for Process Safety management of the Asset.
  - (18.1) Define the technical and professional qualifications and experience for appointment as an Asset Manager.
  - (18.2) Manage any gaps in the competence of the [Asset] Manager through an agreed and documented plan and through technical and professional support from members of the Asset leadership team.

The Asset Manager is Accountable for requirements:

- (22) Demonstrate leadership in Process Safety through measurable and visible actions.
  - (22.1) Communicate the vision and the supporting objectives and targets for Process Safety management of the Asset.
  - (22.2) Set expectations and accountabilities for the Process Safety management of the Asset.
  - (22.3) Communicate on a frequent basis face-to-face with staff about Process Safety.
  - (22.4) Encourage reporting of Process Safety Incidents, including near misses, investigate and review Incidents, set corrective action, and communicate learning.
  - (22.5) Track and communicate closure of actions arising from Process Safety Incident investigations and Process Safety reviews.

1.2 Compliance with Standards

The standards system addresses both internal and external standards; national and international codes and standards; and local, state, and federal regulations and laws. The system makes this information easily and quickly accessible to potential users.

Maintain a dependable practice:

- Ensure consistent implementation of the standards system
- Identify when standards compliance is needed
- Involve competent personnel
- Ensure that standards compliance practices remain effective

Conduct compliance work activities:

- Provide appropriate inputs to standards activities
- Conduct compliance assurance activities
- Determine compliance status periodically as required and provide a status report to management
- Review the applicability of standards as new information or changes arise
Follow through on decisions, actions and use of compliance results

- Update compliance documents and reports as needed
- Communicate conformance or submit compliance assurance records to the appropriate external entity
- Maintain element work records


The Asset Manager or Project Manager is Accountable for requirements:

- (9) Design and construct new Assets and make modifications to existing Assets as specified in the Design and Engineering Manual 1 (DEM1).

1.3 Process Safety Competency

Developing and maintaining process safety competency encompasses three interrelated actions: (1) continuously improving knowledge and competency, (2) ensuring that appropriate information is available to people who need it, and (3) consistently applying what has been learned.

Maintain a dependable practice:

- Establish objectives
- Appoint a chairman
- Identify corollary benefits
- Promote a learning organization

Execute activities that help maintain and enhance process safety competency

- Appoint technology stewards
- Document knowledge
- Ensure that information is accessible
- Provide structure
- Push knowledge to appropriate personnel
- Apply knowledge
- Update information
- Promote person-to-person contact
- Plan personal transitions
- Solicit knowledge from external sources

Evaluate and share results

- Evaluate the utility of existing efforts
• Solicit needs from operating units

1.4 Workforce Involvement

Workforce involvement provides a system for enabling the active participation of company and contractor workers in the design, development, implementation, and continuous improvement of the RBPS management system.

Maintain a dependable practice:

• Develop the basic framework or standards for the workforce participation plan at the corporate level
• Define, subject to risk-based considerations, classes of issues that can be resolved by workers without management involvement
• Provide for substantive workforce participation in the creation or revision of safety policies and procedures, and the establishment of safety goals and plans
• Create positions for safety champions, staffed by workforce volunteers, to serve in an advisory and mentoring role
• Provide training on hazard identification and basic risk assessment principles to all operators and maintenance personnel

Conduct work activities:

• Institute a worker job safety observation program
• Implement a suggestion submission and response program independent of any particular RBPS element
• Include personnel from all levels of the organization in a regularly scheduled program of field safety and housekeeping inspections
• Implement a program of informal what-if exercises, such as table top drills, as part of the process safety training program
• Conduct an annual process technology or process safety school developed and taught with significant workforce involvement
• Institute a formal mentoring program in which senior, experienced workers assist in the development of less experienced personnel
• Assign experienced operators and maintenance personnel to project design teams
• Conduct periodic offsite meetings, during which workers from all levels collaboratively identify potential opportunities for system improvements
• Use a web-based electronic survey to collect feedback from manufacturing and research facilities
• When communicating safety messages or safety policies, include a convenient way for the reader to provide feedback
• Form functional teams for relevant RBPS elements, with worker representation from all levels
• Reassign selected workers from their normal duties and dedicate them to accomplishing a key RBPS task
• Budget time into work schedules to allow workforce members to fulfill formalized workforce involvement activities
• Establish and adhere to schedules for senior staff to spend time in work areas
• Use a quality circle approach to addressing RBPS management system problems
• Establish inter-facility networks to address common issues
• Strive to motivate a broad range of participation

Monitor the system for effectiveness

• Involve the workforce in identifying suitable RBPS metrics and in monitoring and communicating this information to management
• Maintain auditable records documenting workforce involvement activities
• Conduct periodic surveys to monitor worker attitudes and to solicit inputs

1.5 Stakeholder Outreach

Stakeholder outreach is a process for (1) seeking out individuals or organizations that can be or believe they can be affected by company operations and engaging them in a dialogue about process safety, (2) establishing a relationship with community organizations, other companies and professional groups, and local, state, and federal authorities, and (3) providing accurate information about the company and facility’s products, processes, plans, hazards, and risks.

Maintain a dependable practice:

• Ensure consistent implementation
• Involve competent personnel
• Keep practices effective

Identify communication and outreach needs:

• Identify relevant stakeholders
• Define appropriate scope

Conduct communication / outreach activities:

• Identify appropriate communication pathways
• Develop appropriate communication pathways
• Develop appropriate communication tools
• Share appropriate information
• Maintain external relationship

Follow through on commitments and actions:
Follow up commitments to stakeholders and receive feedback
Share stakeholder concerns with management
Document outreach encounters

2 Understand Hazards and Risk
To understand hazards and risk, facilities should focus on:

- Collecting, documenting, and maintaining process safety knowledge
- Conducting hazard identification and risk analysis studies

2.1 Process Knowledge Management
The knowledge element primarily focuses on information that can easily be recorded in documents, such as (1) written technical documents and specifications, (2) engineering drawings and calculations, (3) specifications for design, fabrication, and installation of process equipment, and (4) other written documents such as material safety data sheets (MSDSs).

Maintain a dependable practice:

- Ensure consistent implementation
- Define the scope
- Thoroughly document chemical reactivity and incompatibility hazards

Catalogue process knowledge in a manner that facilitates retrieval

- Make information available and provide structure
- Protect knowledge from inadvertent loss
- Store calculations, design data, and similar information in central files
- Document information in a user-friendly manner

Protect and update process knowledge:

- Control or limit access to out-of-date documents
- Ensure accuracy
- Protect against inadvertent change
- Protect against physical (or electronic) removal or misfiling
- Support efforts to properly manage change

Use process knowledge:

- Ensure awareness
- Ensure that process knowledge remains useful
2.2 Hazards and Effects Management Process (formerly, Hazard Identification and Risk Analysis)

Hazards and Effects Management Process (HEMP) is a collective term that encompasses all activities involved in identifying hazards and evaluating risk at facilities, throughout their life cycle, to make certain that risks to employees, the public, or the environment are consistently controlled within the organization’s risk tolerance.

Maintain a dependable practice:

- Document the intended risk management system
- Integrate HEMP activities into the life cycle of projects or processes
- Clearly define the analytical scope of HEMPs and assure adequate coverage
- Determine the physical scope of the risk system
- Involve competent personnel
- Make consistent risk judgments
- Verify that HEMP practices remain effective

Identify hazards and evaluate risks:

- Gather and use appropriate data to identify hazards and evaluate risks
- Select appropriate HEMP methods
- Ensure that HEMP reviewers have appropriate expertise
- Perform risk activities to the appropriate level of technical rigor commensurate with the life cycle stage and the available information
- Prepare a thorough risk assessment report

Assess risks and make risk-based decisions:

- Apply the risk tolerance criteria
• Select appropriate risk control measures

Follow through on the assessment results

• Communicate important results to management
• Document the residual risk
• Resolve recommendations and track completion of actions
• Communicate results internally
• Communicate results externally
• Maintain risk assessment records


**The Asset Manager or Project Manager is Accountable for requirements:**

- (1) Identify and document Hazards with RAM red and yellow 5A and 5B Process Safety Risks for existing and new Assets.
- (2) Manage identified Risks to As Low As Reasonably Practicable (ALARP) as specified in Managing Risk.

**The Asset Manager is Accountable for requirements:**

- (21) Know what Hazards the Asset has with RAM red and yellow 5A and 5B Process Safety Risks, and know how these Risks are managed to ALARP.

### 3 Manage Risk

To manage risk, facilities should focus on:

- Developing written procedures that (1) describe how to safely start up, operate, and shut down processes, (2) address other applicable operating modes, and (3) provide written instructions that operators can execute when they encounter process upsets / unsafe conditions.
- Implementing an integrated suite of safe work policies, procedures, permits, and practices to control maintenance and other non-routine work.
- Executing work activities to ensure that equipment is fabricated and installed in accordance with specifications, and that it remains for for service over its entire life cycle.
- Managing contractors, and evaluating work performed by contractors, to ensure that the associated risks are acceptable; ensuring that contractors are not exposed to unrecognized hazards or undertake activities that present unknown or intolerable risk.
- Providing training and conducting related activities to ensure reliable human performance at all levels of the organization.
- Recognizing and managing changes.
- Ensuring that units, and the people who operate them, are properly prepared for startups.
• Maintaining a very high level of human performance, particularly among operators, maintenance personnel, and others whose actions directly affect process safety.
• Preparing for and managing emergencies.

3.1 Plant Operating Procedures (formerly, Operating Procedures)
Plant operating procedures are written instructions (including procedures that are stored electronically and printed on demand) that (1) list the steps for a given task and (2) describe the manner in which the steps are to be performed.

Maintain a dependable practice:

• Establish management controls
• Control procedure format and content
• Control documents

Identify what operating procedures are needed:

• Conduct a task analysis
• Determine what procedures are needed and their appropriate level of detail
• Address all operating modes

Develop procedures:

• Use an appropriate format
• Ensure that the procedures describe the expected system response, how to determine if a step or task has been done properly, and possible consequences associated with errors or omissions
• Address safe operating limits and consequences of deviation from safe operating limits
• Address limiting conditions for operation
• Provide clear, concise instructions
• Supplement procedures with checklists
• Make effective use of pictures and diagrams
• Develop written procedures to control temporary or non-routine operations
• Group the tasks in a logical manner
• Interlink related procedures
• Validate procedures and verify that actual practice conforms to intended practice

Use the procedures to improve human performance:

• Use the procedures when training
• Hold the organization accountable for consistently following procedures
• Ensure that procedures are available
Ensure that procedures are maintained:

- Manage changes
- Correct errors and omissions in a timely manner
- Periodically review all operating procedures


The Asset Manager is Accountable for requirements:

- (14) Establish and Maintain Procedures to operate HSSE Critical Equipment within its Operational Limits.
  - (14.1) Set Operational Limits for HSSE Critical Equipment which are accessible to staff in HSSE Critical Positions involved in operating, maintaining, inspecting and managing the Assets.
  - (14.2) Establish and Maintain operating Procedures, including for start-up, normal operation, shutdown, emergency shutdown, isolation and making the HSSE Critical Equipment safe for maintenance activities.
  - (14.3) Establish and Maintain procedures for monitoring the process conditions in HSSE Critical Equipment.
  - (14.4) Identify and establish controls for handling Abnormal Situations.
  - (14.6) Define any specific HSSE Critical Equipment, which, if impaired, would require immediate shutdown of equipment.

3.2 Permit To Work (formerly, Safe Work Practices)

Permit To Work (PTW) fills the gap between operating procedures and maintenance procedures. Safe work practices help control hazards and manage risk associated with non-routine work.

Maintain a dependable practice:

- Define the scope
- Specify when in the facility’s life cycle the safe work procedures apply
- Ensure consistent implementation
- Involve competent personnel

Effectively control non-routine work activities:

- Develop safe work procedures, permits, checklists, and other written standards
- Train employees and contractors
- Control access to particularly hazardous areas
- Enforce the use of safe work procedures, permits, and other standards
- Review completed permits
3.3 Technical Integrity (formerly, Asset Integrity and Reliability)
Technical integrity is the systematic implementation of activities, such as inspections and tests necessary to ensure that important equipment will be suitable for its intended application throughout its life.

Maintain a dependable practice:

- Develop a written program description / policy
- Determine the scope of the asset integrity elements
- Base design and ITPM tasks on standards
- Involve competent personnel
- Update practices based on new knowledge
- Integrate the asset integrity element with other goals

Identify equipment and systems that are within the scope of the asset integrity program and assign ITPM tasks:

- Identify equipment / systems for inclusion in the asset integrity element
- Develop an ITPM plan
- Update the ITPM plan when equipment conditions change

Develop and maintain knowledge, skills, procedures, and tools:

- Develop procedures for inspection, test, repair, and other maintenance activities
- Train employees and contractors
- Ensure that inspectors hold appropriate certifications
- Provide the right tools

Ensure continued fitness for purpose:

- Conduct initial inspections and tests as part of plant commissioning
- Conduct tests and inspections during operations
- Execute calibration, adjustment, preventative maintenance, and repair activities
- Plan, control, and execute maintenance activities
- Ensure the quality of repair parts and maintenance materials
- Ensure that overhauls, repairs, and tests do not undermine safety
Address equipment failures and deficiencies:

- Promptly address conditions that can lead to failure
- Review test and inspection reports examine results to identify broader issues
- Investigate chronic failures using a structured methodology
- Plan maintenance and repair activities

Analyze data:

- Collect and analyze data
- Adjust inspection frequencies and methods
- Conduct additional inspections or tests as needed
- Plan replacements or other corrective actions
- Archive data
The Asset Manager or Project Manager is Accountable for requirements:

- (8) Establish Technical Integrity in design and construction.

The Asset Manager is Accountable for requirements:

- (15) Establish and Maintain Procedures to inspect the Technical Integrity of HSSE Critical Equipment.
  - (15.1) Maintain, in an accessible system, a register of items of HSSE Critical Equipment and their minimum Performance Criteria.
    - (15.1.1) Include in the register any long-term effects that may degrade Technical Integrity, and the expected rate of degradation of static equipment.
  - (15.2) Inspect and verify the performance of HSSE Critical Equipment.
    - (15.2.1) Set inspection intervals to confirm that minimum Performance Criteria are met based on the expected rate of degradation and the actual condition when last inspected.
  - (15.3) Segregate responsibilities for inspection duties from those of operations and maintenance.
    - (15.3.1) Inspection staff must have direct access to the [Asset] Manager to raise Process Safety concerns.
  - (15.4) Inspect and re-verify the Technical Integrity of HSSE Critical Equipment if an Operational Limit is exceeded beyond predefined values.
  - (15.5) Keep inspection records.

- (16) Establish and Maintain Procedures to maintain HSSE Critical Equipment.
  - (16.1) Repair or replace within a defined period any item of HSSE Critical Equipment if its performance deviates from the agreed minimum Performance Criteria (see also 14.1).
  - (16.2) Specify corrective and preventive maintenance processes for HSSE Critical Equipment.
    - (16.2.1) Establish and Maintain controls to meet the specified minimum criteria for spare parts.
    - (16.2.2) Establish controls for deviating from agreed maintenance intervals.
  - (16.3) Establish and Maintain work instructions, including job Method Statements and checklists for the maintenance of HSSE Critical Equipment.
  - (16.4) Verify that the maintenance work has been executed correctly and that HSSE Critical Equipment meets the specified minimum Performance Criteria (see also 14.1).
  - (16.5) Keep maintenance records for HSSE Critical Equipment.

### 3.4 Contractor Management

Contractor management is a system of controls to ensure that contracted services support both safe facility operations and the company’s process safety performance goals.

Maintain a dependable practice:

- Ensure consistent implementation
• Identify when contractor management is needed
• Involve competent personnel
• Ensure that practices remain effective

Conduct element work activities:

• Appropriately select contractors
• Establish expectations, roles, and responsibilities for safety program implementation and performance
• Ensure that contractor personnel are properly trained
• Fulfill company responsibilities with respect to safety performance

Monitor the contractor management system for effectiveness

• Audit the contractor selection process
• Monitor and evaluate contractor safety performance


The Asset Manager or Project Manager is Accountable for requirements:

• (5) Verify that Contract Holders monitor the HSSE requirements of the contract that are relevant to the competence and fitness to work of contractor staff as specified in Contractor HSSE Management.

3.5 Training and Performance Assurance

Training is practical instruction in job and task requirements and methods. Performance assurance is the means by which workers demonstrate that they have understood the training and can apply it in practical situations.

Maintain a dependable practice:

• Define roles and responsibilities
• Validate program effectiveness
• Control documents

Identify what training is needed:

• Conduct a job / task analysis
• Determine minimum requirements (or essential elements) for job candidates
• Determine what training is needed
• Group training into logical programs
• Manage changes

Provide effective training:
• Develop or procure training materials
• Consider timing
• Interweave related topics
• Ensure that training is available

Monitor worker performance:

• Qualify workers initially
• Test workers periodically
• Review all qualification requirements periodically


The Asset Manager or Project Manager is Accountable for requirements:
• (3) Manage the competence of employees in HSSE Critical Positions as specified in Competence.

3.6 Management of Change
The MOC element helps ensure that changes to a process do not inadvertently introduce new hazards or unknowingly increase risk of existing hazards.

Maintain a dependable practice:

• Establish consistent implementation
• Involve competent personnel
• Keep MOC practices effective

Identify potential change situations:

• Define the scope of the MOC system
• Manage all sources of change

Evaluate possible impacts:

• Provide appropriate input information to manage changes
• Apply appropriate technical rigor for the MOC review process
• Ensure that MOC reviewers have appropriate expertise and tools

Decide whether to allow the change:

• Authorize changes
• Ensure that change authorizers address important issues

Complete follow-up activities:
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- Update records
- Communicate changes to personnel
- Enact risk control measures
- Maintain MOC records

3.7 Operational Readiness

The readiness element ensures that shut down processes are verified to be in safe condition for re-start.

Maintain a dependable practice:

- Ensure consistent implementation
- Determine types of and triggers for the readiness practice
- Determine the scope of readiness reviews
- Involve competent personnel
- Ensure that readiness practices remain effective

Conduct appropriate readiness reviews as needed:

- Provide appropriate inputs
- Involve appropriate resources and personnel
- Apply an appropriate work process
- Perform element work in a diligent manner
- Create element work products

Make startup decisions based upon readiness results:

- Consider important issues affecting the startup
- Communicate decisions and actions from the readiness review

Follow through on decisions, actions, and use of readiness results:

- Enact risk control measures
- Update process safety knowledge and records
- Maintain element work records
The Asset Manager or Project Manager is Accountable for requirements:

- (7) Develop a Statement of Fitness for the Assets before:
  - starting or commissioning a new Asset or a Modification to an existing Asset;
  - restarting an Asset after an Incident involving uncontrolled shutdown, or an overhaul or a turn-around, or when the Asset has been subjected to conditions outside the operational limits or experienced environmental conditions beyond the original design parameters.
- (7.1) Confirm in the Statement of Fitness that
  - Process Safety Risks have been identified and documented and are managed to ALARP;
  - employees or Contractors executing HSSE Critical Activities are competent and fit to work;
  - HSSE Critical Equipment meets its Technical Integrity requirements;
  - modifications are complete and have been authorised as specified in Management of Change;
  - design and construction of new Assets and modification to existing Assets meet the design and engineering requirements.
  - Process Safety Basic Requirements are met; and
  - Procedures are in place to operate HSSE Critical Equipment within its Operational Limits.

3.8 Conduct of Operations
Conduct of operations institutionalizes the pursuit of excellence in the performance of every task and minimize variations in performance.

Maintain a dependable practice:

- Define roles and responsibilities
- Establish standards for performance
- Validate program effectiveness

Control operations activities:

- Follow written procedures
- Follow safe work practices
- Use qualified workers
- Assign adequate resources
- Formalize communications between workers
- Formalize communications between shifts
- Formalize communications between work groups
- Adhere to safe operating limits and limiting conditions for operations
- Control access and occupancy
Control the status of systems and equipment:

- Formalize equipment / asset ownership and access protocols
- Monitor equipment status
- Maintain good housekeeping
- Maintain labeling
- Maintain lighting
- Maintain instruments and tools

Develop required skills / behaviors:

- Emphasize observation and attention to detail
- Promote a questioning / learning attitude
- Train workers to recognize hazards
- Train workers to self-check and peer-check
- Establish standards of conduct

Monitor organizational performance:

- Maintain accountability
- Strive to continuously improve
- Maintain fitness for duty
- Conduct field inspections
- Correct deviations immediately

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The Asset Manager or Project Manager is Accountable for requirements:

- (4) Manage the fitness to work of employees as specified in Fitness to work.
- (6) Provide supervision of HSSE Critical Activities appropriate to:
  - the complexity of the activity including multiple concurrent tasks, and non-routine and unexpected activities; and
  - the competence of the individuals performing the activity.

The Asset Manager is Accountable for requirements:

- (14) Establish and Maintain Procedures to operate HSSE Critical Equipment within its Operational Limits.
  - (14.7) Establish and Maintain procedures for handover communication within and between shifts.

### 3.9 Emergency Management

Emergency management includes (1) planning for possible emergencies, (2) providing resources to execute the plan, (3) practicing and continuously improving the plan, (4) training or informing employees, contractors, neighbors, and local authorities on what to do, how they will be...
notified, and how to report an emergency, and (5) effectively communicating with stakeholders in the event an incident does occur.

Maintain a dependable practice:

- Develop a written program
- Designate an owner and define roles and responsibilities
- Involve competent personnel

Prepare for emergencies:

- Identify accident scenarios based on hazards
- Select planning scenarios
- Plan defensive response actions
- Plan offensive response actions
- Develop written emergency response plans
- Provide physical facilities and equipment
- Maintain / test facilities and equipment
- Determine when unit operator response is appropriate
- Train ERT members
- Plan communications
- Inform and train all personnel
- Periodically review emergency response plans

Periodically test the adequacy of plans and level of preparedness

- Conduct emergency evacuation and emergency response drills
- Conduct tabletop exercises
- Practice crisis communication
- Critique exercises, drills, and actual responses
- Conduct assessments and audits
- Address findings and recommendations

4 Learn from Experience

To learn from experience, facilities should focus on:

- Investigating incidents that occur at the facility to identify and address the root causes.
- Applying lessons from incidents that occur at other facilities within the company and within the industry.
- Measuring performance and striving to continuously improve in areas that have been determined to be risk significant.
• Auditing RBPS management systems as well as the performance of work activities that make up the management system.
• Holding periodic management reviews to determine if the management systems are working as intended and if the work activities are helping the facility effectively manage risk.

4.1 Incident Investigation

Incident investigation is a process for reporting, tracking, and investigating incidents that includes (1) a formal process for investigating incidents, including staffing, performing, documenting, and tracking investigations of process safety incidents.

Maintain a dependable incident reporting and investigation practice:

• Implement the program consistently across the company
• Define an appropriate scope for the incident investigation element
• Involve competent personnel
• Monitor incident investigation practices for effectiveness

Identify potential incidents for investigation:

• Monitor all sources of potential incidents
• Ensure that all incidents are reported
• Initiate investigations promptly

Use appropriate techniques to investigate incidents

• Interface with the emergency management element
• Use effective data collection methods
• Use appropriate techniques for data analysis
• Investigate causes to an appropriate depth
• Demand technical rigor in the investigation process
• Provide investigation personnel with appropriate expertise and tools
• Develop effective recommendations

Document incident investigation results:

• Prepare incident investigation reports
• Provide clear linking between causes and recommendations

Follow through on results of investigations:

• Resolve recommendations
• Communicate findings internally
• Communicate findings externally
• Maintain incident investigation records

Trend data to identify repeat incidents that warrant investigation:
• Log all reported incidents
• Analyze incident trends

4.2 Measurement and Metrics
This element addresses which indicators to consider, how often to collect data, and what to do with the information to help ensure responsive, effective RBPS management system operations.

Maintain a dependable practice:
• Establish consistent implementation
• Determine triggers for metrics collection and reporting
• Ensure that the scope of the metrics is appropriate
• Involve competent personnel
• Keep metrics practices effective

Conduct metrics acquisition:
• Implement appropriate element metrics
• Collect and refresh metrics

Summarize and communicate metrics in a useful format
• Use metrics element to improve RBPS elements

4.3 Auditing
The audits element is intended to evaluate whether management systems are performing as intended.

Maintain a dependable practice:
• Ensure consistent implementation
• Involve competent personnel
• Identify when audits are needed

Conduct element work activities:
• Prepare for the audit
• Determine the audit scope and schedule
• Assemble the team
• Assign responsibilities
• Gather advanced information
• Plan onsite activities
• Conduct the audit
• Document the audit
• Address audit findings and recommendations

Use audits to enhance RBPS effectiveness:

• Monitor RBPS maturation over time for each facility
• Share best practices

4.4 Management Review and Continuous Improvement

Management review is the routine evaluation of whether management systems are performing as intended and producing the desired results as efficiently as possible.

Maintain a dependable practice:

• Define roles and responsibilities
• Establish standards for performance
• Validate program effectiveness

Conduct review activities:

• Prepare for the review
• Determine the review scope
• Schedule the review
• Gather information
• Prepare a presentation
• Conduct the review
• Document the review
• Address review findings / recommendations

Monitor organizational performance:

• Strive to continuously improve
• Conduct field inspections
**Process Safety Management: Outline for HSE Management System Update and Operations HSE Cases**

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**The Asset Manager or Project Manager is Accountable for requirements:**

- (12) Perform Process Safety Reviews for new Assets and for modifications to existing Assets, and perform Process Safety Reviews for existing Assets at least every five years.
  - (12.1) Process Safety Reviews for existing Assets must assess changes made, new design and engineering standards, new technology, operational experience, and lessons learned from Incidents and near misses.

**The Business Leader is Accountable for requirements:**

- (19) Review the Process Safety Risks to the Business at least annually, in line with Management Review.
  - (19.1) Review leading and lagging Process Safety indicators as listed in the **PMR Specification 2010**.
  - (19.2) Determine and record whether the Process Safety Risks are ALARP.
  - (19.3) Request corrective action where needed.
  - (19.4) Prioritise actions.
  - (19.5) Initiate exit from the Asset when Process Safety Risks are assessed, as intolerable and corrective action is not considered possible.

**The Asset Manager is Accountable for requirements:**

- (20) Review the Process Safety Risks to the Asset at least annually, in line with Management Review.
  - (20.1) Apply requirements 19.1 to 19.5 above in this review.