

Understanding SSHE MS

The Safety, Security, Health, and Environment Management System (SSHE MS) is a structured process utilized in lowering the risk and consequence of incidents.

The PTTEP SSHE MS consists of 7 key elements:



Introduction

The PTTEP SSHE Management System, a reflection of the organization's vision and missions, is essential for the efficient operation of all SSHE and SSHE-related activities.

This system is properly structured and implemented, serving as a basis for operational and risk management. The success of the system depends on the commitment of PTTEP employees and contractors at all levels.

The SSHE MS is aligned with the International Association of Oil & Gas Producers (IOGP) and international standards, for example, ISO 14001 Environmental Management System and ISO 45001 Occupational Health and Safety Management System.

The PTTEP SSHE MS comprises seven (7) key elements, as exhibited below.

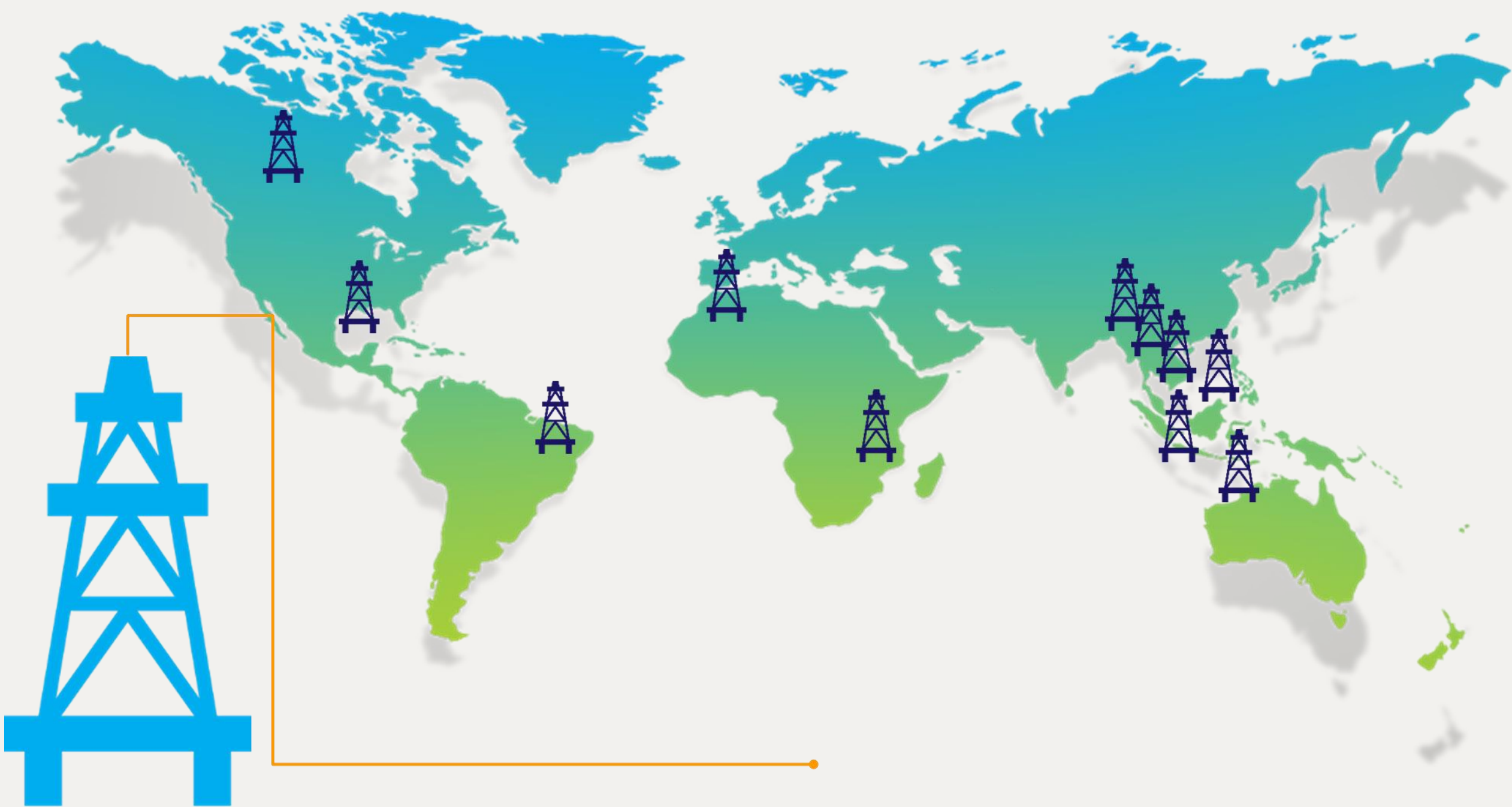
SSHE MS Element	Addressing
Leadership and Commitment	Top-down commitment and SSHE culture, essential to the success of the SSHE MS
Policy and Strategic Objectives	Corporate intentions, principles of action, and aspirations with respect to SSHE
Organization, Resources, and Documentation	Organization of people, resources, and documentation for sound SSHE performance
Evaluation and Risk Management	Identification and evaluation of SSHE risks, for activities, products, and services, and development of risk reduction measures
Planning and Operational Control	Planning the conduct of work activities, including planning for changes and emergency response
Implementation and Monitoring	Performance and monitoring of activities, and how corrective action is to be taken when necessary
Audit and Review	Periodic assessments of SSHE MS performance, effectiveness, and fundamental suitability

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PTTEP

SSHE MS

Elements



1

Element

Leadership and Commitment

Leadership and commitment from the top management are the foundation of the SSHE MS. Management at all levels shall:

- Adopt the PTTEP SSHE policy and strategic objectives.
- Effectively communicate the PTTEP SSHE policy to all personnel under their authority, including contractors, to ensure a safe, secure, and healthy workplace.
- Demonstrate strong, visible leadership and commitment.
- Have personal involvement and readiness to provide adequate resources for SSHE matters.
- Foster active involvement of employees and contractors in improving SSHE performance.
- Participate with employees and contractors in the development and maintenance of the "SSHE Culture".

2

Element

Policy and Strategic Objectives

The PTTEP SSHE Policy addresses the Corporate SSHE objectives, aspirations, principles of action, and commitments with respect to SSHE with the aim of improved performance. For the company to achieve its SSHE Vision and Missions:

- SSHE policy shall be:
 - Implemented and supported by all PTTEP organizations.
 - Communicated, provided, or readily available to all stakeholders in the local languages.
 - Displayed at companies' facilities and contractors' offices on site.
 - Contained in every invitation to tender, and in all contract requests.
 - Available in the SSHE Intranet.
- SSHE due diligence shall be conducted prior to deciding to proceed with an investment opportunity.
- Corporate SSHE will assist with influencing all stakeholders, including Joint Ventures to achieve standards equivalent to PTTEP SSHE requirements.

Supporting Standard

Corporate SSHE Plan, SSHE KPI's and Performance Monitoring Standard

This standard describes the process of developing, endorsing, implementing, and monitoring annual Corporate SSHE strategic direction, SSHE plans, and SSHE indicators at the Corporate and Function Group/ Division/Department level.

The Corporate SSHE strategic direction is set out to align with the Company's strategic direction. The means by which the Corporate SSHE strategic direction is translated into practical actions is by SSHE Plans at Corporate and Function Group levels. The outcomes of SSHE management are by measuring SSHE performance and comparing results to a set of leading and lagging SSHE indicators with defined targets. It is to ensure continuous improvement in SSHE performance and achieve the ultimate goal of becoming a zero-incident organization.

3 Element

Organization, Resources and Documentation

The key objectives of this element are to:

- Structure and allocate resources appropriate to the development and implementation of the SSHE MS.
- Standardize establishment, control, and periodically review of SSHE MS documents.
- Ensure all SSHE-related matters are acknowledged and resolved through the participation of and consultation with employees, contractors, and interested parties.
- Ensure PTTEP and contractor staff have the minimum SSHE competency levels.
- Ensure compliance with relevant legislation and other requirements.

Supporting Standards

Corporate Oversight of SSHE MS Standard

This standard summarizes the mandatory essential requirements written in the individual SSHE standards, procedures, and guidelines that assets, projects, and service providers to the assets/projects shall follow. It highlights how Corporate SSHE conducts this oversight activity.

SSHE Communication Standard

This standard describes the processes needed for internal and external communications relevant to SSHE management system, including the processes for consultation and participation of employees and contractors at all applicable levels and functions or their representatives to ensure that all SSHE information is effectively communicated throughout the organization. Consultation and involvement of all employees, contractors, and interested parties shall be effectively implemented to promote successful SSHE activities, programs, and a positive SSHE culture.

3 Element

Organization, Resources and Documentation

Supporting Standards

SSHE Training and Competency Standard

This standard outlines the minimum requirements of SSHE training and competency in PTTEP as a reference for all PTTEP and Subsidiaries to implement. It is to ensure that all staff and contractors have received adequate training and obtained sufficient knowledge and competency necessary for executing their assigned tasks and activities according to the requirements of the SSHE MS and related laws and regulations of the countries that PTTEP and Subsidiaries operate the business in, to ensure regulatory compliance of such countries.

SSHE Regulatory Compliance Standard

This document sets out a process to determine and access SSHE compliance obligations pertinent to PTTEP's hazards and environmental aspects and how these compliance obligations apply. The documented information regarding the applicability review of compliance obligations shall be maintained, kept up-to-date, and communicated to all employees and contractors working under the control of PTTEP, and other related stakeholders. In addition, to ensure the status of compliance with applicable compliance obligations and the effectiveness of prevailing controls, the SSHE MS compliance audits shall be carried out on a regular basis.

(Examples) Supplementary SSHE Procedures

- SSHE Contractor Management Procedure
- SSHE Documentation Management Procedure

4 Element

Evaluation and Risk Management

All activity significant risks shall be identified, prioritized, and managed effectively. The Hazard and Effects Management Process (HEMP) is used to identify, evaluate, and determine effective controls for SSHE hazards associated with all activities and at every project phase. Moreover, all identified risks shall be managed to be As Low As Reasonably Practicable (ALARP).

Supporting Standards

SSHE Risk Management Standard

The primary objective of SSHE Risk Management is to ensure that all SSHE risks, including Major Accident Events (MAE), to which people, environment, assets, and reputation are exposed, are systematically identified, risks are evaluated, and measures for reducing them to ALARP levels are put in place, documented, and maintained. This allows the management of uncertainty on PTTEP's SSHE objectives. The standard follows the principles of, e.g., ISO 17776, ISO 31000, ISO 31010, etc.

Safety Case Standard

The purposes of this standard are to define the requirements for Safety Case, outline the principle process of developing a Safety Case, and specify what shall be delivered at each phase throughout the facility life cycle.

The Safety Case is the means of ensuring and demonstrating that suitable and sufficient measures are in place to prevent MAEs or high-risk hazards and reduce the effects of these events. The regular reviewing and reference to the Safety Case shall also ensure continuous improvement in safety performance.

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Element

Evaluation and Risk Management

Supporting Standards

Process Safety Management Standard

Process Safety Management is concerned with the prevention of MAE that can occur during the drilling and servicing of wells, and production and processing of hydrocarbons, i.e., those accidents that may cause multiple fatalities or equivalent environmental damage, production loss, plant damage, and reputation damage as per PTTEP Risk Assessment Matrix. The most important aspect of process safety is ensuring that inherently safer designs are incorporated in early project phases, particularly concept selection, and basic and detailed engineering. The scope for making key decisions that can affect process safety significantly is optimal at this time.

(Examples) Supplementary SSHE Procedures

- Environmental Impact Assessment for Exploration, Production, and Decommissioning Procedure
- Health Risk Assessment Procedure

5 Element

Planning and Operational Control

The key objectives of this element are to:

- Address the planning of work activities through the SSHE plan.
- Provide guidance to SSHE activities.
- Manage permanent and temporary changes in people, processes, and plants to avoid adverse consequences.
- Establish and implement emergency and crisis management plans.

Supporting Standards

Emergency and Crisis Management Standard

Emergency and crisis management has three primary objectives, i.e., minimizing the probability of a threat or emergency, mitigating the impact if the event occurs, recovering from the emergency, and resuming normal operations. The typical emergency and crisis management process involves prevention and mitigation, preparedness, response, and recovery phases. The mitigation phase is the first process to gather results of hazard identification and risk assessments, impact analyses, operational experience, cost-benefit analyses, results of incident investigation, and lessons learned from previous emergencies. The preparedness phase is essential to the company's operations to prevent fatalities and injuries. Also, it reduces damage to the environment, property, and company reputation. The response phase describes notifications and team activations, including communication during emergencies. The last process is the recovery phase which is related to Business Continuity Management (BCM)

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Element

Planning and Operational Control

Supporting Standards

Environmental Management Standard

The Environmental Management Standard has been developed to provide an overview of our environmental management strategy and its requirements. The main objective of this standard is to assist all operating assets to properly manage the company's environmental aspects and impacts within environmentally sound management practices, which include compliance with regulations and the Company requirements, ensuring the mitigation and prevention of environmental pollution, and encouraging for a continuous improvement culture.

Climate Change Management Standard

The Climate Change Management Standard was developed to assist PTTEP in integrating climate change management into every phase of E&P activities, including all phases of project development. This standard demonstrates the company's commitment from the top management to reduce GHG emissions and align with the pathway of a low carbon future.

Security Management Standard

This standard covers Corporate level requirements for use by operations and activities undertaken by PTTEP at all levels. The process of regularly assessing Security risks along with their evaluation and reporting, design, and implementation of cost-effective security measures, and continually communicating and advising the workforce on how best to manage security risk shall be applied in all cases.

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Element

Planning and Operational Control

Supporting Standard

Operational Safety Management Standard

This standard provides a framework for managing operational safety in the activities which are carried out in the exploration and production of oil and gas, both onshore and offshore. The purposes of this standard are to:

- Ensure that all operational activities, which need to be carried out in PTTEP, have the necessary mechanisms and processes in place to manage hazards and risks, both in normal operating conditions (routine and non-routine activities), Simultaneous Operations (SIMOPS), and degraded condition when Management of Change (MOC) is required.
- Prevent all workplace injuries by encouraging active workforce participation in all aspects of safety including participation in the hazard management process.
- Ensure that all employees are competent to fulfill their duties.
- Protect, promote, and maintain workplace safety.

Management of Change Standard

The purpose of the Management of Change (MOC) Standard is to specify minimum requirements for systematically managing the changes to any operations, organization, administration, or regulation (codes and standards) to ensure that any risk or hazard arising from that change is identified, assessed and controlled, and business activities do not get overlooked.

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Element

Planning and Operational Control

Supporting Standards

Occupational Health Management Standard

The purposes of occupational health management are to:

- Protect, promote, and maintain the health, safety, and welfare of people at work.
- Advise on the provision of safe and healthy conditions by informed assessment of the physical/psychological aspects of the working environment.
- Identify and advise management on the causes of occupational disease and injury and the means of their prevention.
- Advise on the rehabilitation and placement in suitable work of those temporarily or permanently incapacitated by illness or injury.
- Assist in the planning and preparedness of emergency response plans.

This standard will cover, for example, Health Risk Assessment (HRA) and planning, industrial hygiene and control of workplace exposures, medical emergency management, fitness to work assessment and health surveillance, etc.

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Element

Planning and Operational Control

Supporting Standards

Life-Saving and Process Safety Rules Standard

The Life-Saving and Process Safety Rules Standard is adopted from The International Association of Oil & Gas Producers (IOGP) Life-Saving Rules Report No. 459, and Process Safety Fundamentals Report No. 638, respectively. It aims to provide PTTEP's employees and contractors with the actions they can perform to protect themselves and their colleagues from fatalities and to prevent process safety incidents. Implementing the Life-Saving and Process Safety Rules aims to achieve the company's vision of being a "Zero Incident Organization".

(Examples) Supplementary SSHE Procedures

- Chemical Management Procedure
- Crisis and Emergency Management Plan
- Lifting Operation Safety Procedure
- Permit to Work Procedure
- Spill Management Plan

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Element

Implementation and Monitoring

The key objectives of this element are to:

- Assess the implementation and effectiveness of existing controls
- Evaluate SSHE performance covering all aspects
- Manage accidents and near misses with real and potential consequences via the incident reporting and investigation process

Supporting Standards

Incident Management Standard

This standard provides an incident reporting and analysis process to ensure that all incidents are reported, investigated, and logged properly as a lesson learned. This standard sets the minimum requirements in PTTEP Asset for reporting, investigating, and following up on all incidents, including High Potential Incidents (HPIs), near misses, external complaints, non-compliance, and others. Key requirements of Incident Management are:

- Incident shall be immediately notified and reported as per severity criteria.
- All incidents shall be investigated and provided recommendations for corrective and preventive and followed up to close out those recommendations.
- All incident records and statistics shall be analyzed for reoccurrence prevention.
- Incident lessons learned shall be prepared and communicated to all concerned parties.

SSHE Culture Management Standard

The purpose of this standard outlines the consistent management and implementation of the SSHE culture management process. It also provides tools and techniques for SSHE Culture development to achieve the generative level. The key objectives of this standard are to:

- Implement the SSHE culture program by identifying their SSHE culture maturity level and having a plan in place to continuously improve their SSHE culture.
- Implement Behavioral Based Safety (BBS) programs to improve behavioral processes in reducing incidents triggered by unsafe acts or at-risk behaviors.

(Example) Supplementary SSHE Procedure

- Environmental Performance Reporting Procedure

7

Element

Audit and Review

The key objectives of this element are to:

- Periodically review and verify the effectiveness of SSHE MS implementation to ensure the adequacy of controls and status of compliance with applicable legislation and other requirements
- Document and manage audit results to closure

Supporting Standard

Audit and Review Standard

This standard describes the requirements for audit and review plans, the planning, execution, and closeout of audits, and continuous improvement of the SSHE auditing process. The audit standard establishes a uniform method for managing SSHE auditing in PTTEP to determine:

- If SSHE MS elements and activities comply with planned arrangements and are effectively implemented.
- The capability of the SSHE MS to fulfill the SSHE policy, objectives, and performance criteria of the asset.
- The fulfillment of pertinent legal requirements.
- Identification of areas for improvement that will result in progressively better SSHE management.

The outcomes of SSHE audits and reviews are managed to facilitate the implementation of changes to enhance processes and reduce risks.