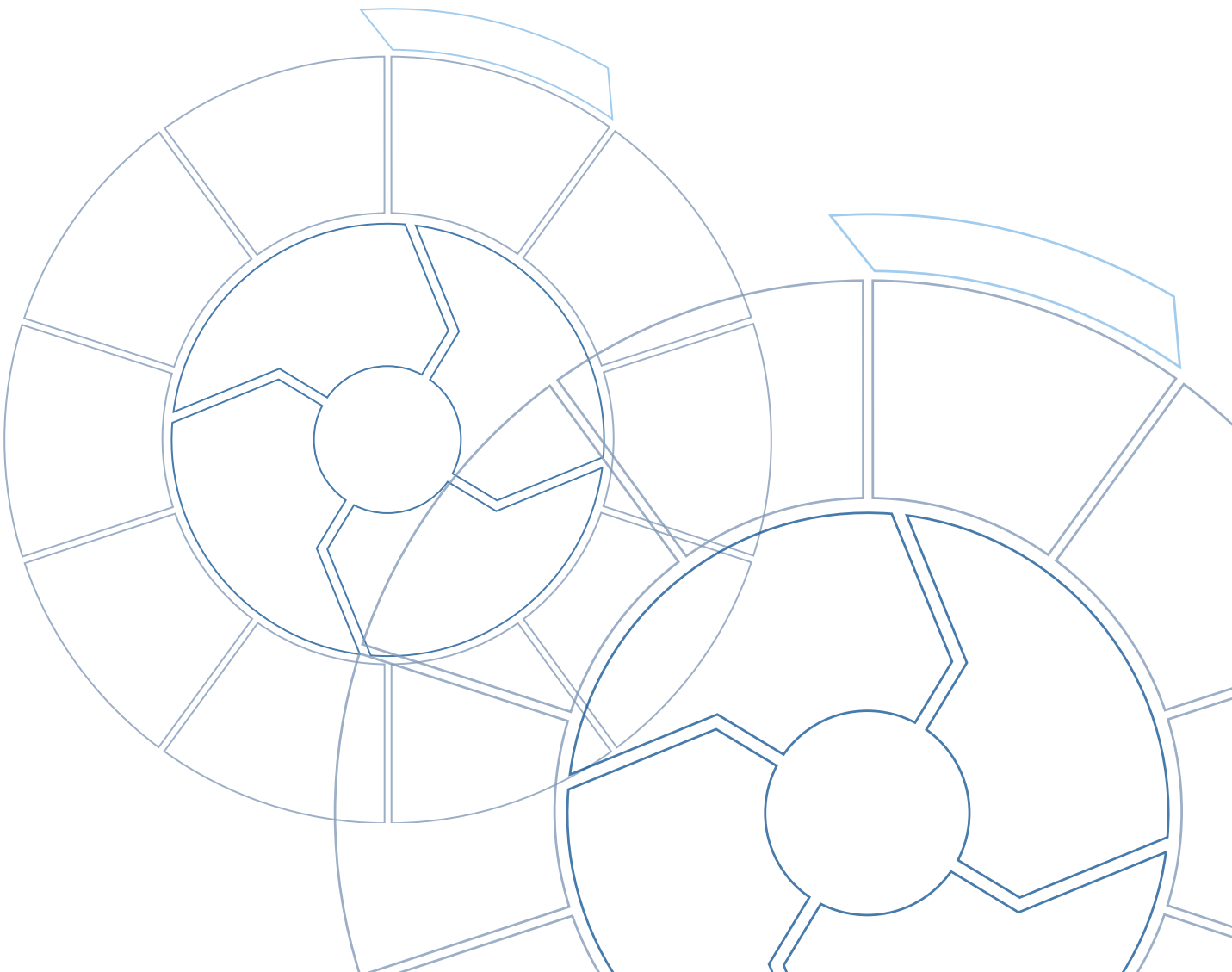




OMS in practice

OGP Report No. 511
June 2014

A supplement to Report No. 510, *Operating Management System Framework*



Disclaimer

Whilst every effort has been made to ensure the accuracy of the information contained in this publication, neither the OGP nor IPIECA nor any of their members past, present or future warrants its accuracy or will, regardless of its or their negligence, assume liability for any foreseeable or unforeseeable use made thereof, which liability is hereby excluded. Consequently, such use is at the recipient's own risk on the basis that any use by the recipient constitutes agreement to the terms of this disclaimer. The recipient is obliged to inform any subsequent recipient of such terms.

Copyright notice

The contents of these pages are © The International Association of Oil and Gas Producers and IPIECA. Permission is given to reproduce this report in whole or in part provided (i) that the copyright of OGP and (ii) the source are acknowledged. All other rights are reserved. Any other use requires the prior written permission of both the OGP and IPIECA.

These Terms and Conditions shall be governed by and construed in accordance with the laws of England and Wales. Disputes arising here from shall be exclusively subject to the jurisdiction of the courts of England and Wales.

About OGP

OGP represents the upstream oil and gas industry before international organisations including the International Maritime Organization, the United Nations Environment Programme (UNEP), Regional Seas Conventions and other groups under the UN umbrella. At the regional level, OGP is the industry representative to the European Commission and Parliament and the OSPAR Commission for the North East Atlantic. Equally important is OGP's role in promulgating best practices, particularly in the areas of health, safety, the environment and social responsibility.

About IPIECA

IPIECA is the global oil and gas industry association for environmental and social issues. It develops, shares and promotes good practices and knowledge to help the industry improve its environmental and social performance, and is the industry's principal channel of communication with the United Nations. Through its member-led working groups and executive leadership, IPIECA brings together the collective expertise of oil and gas companies and associations. Its unique position within the industry enables its members to respond effectively to key environmental and social issues.



OMS in practice

*OGP Report No. 511
June 2014*

A supplement to Report No. 510, Operating Management System Framework

Revision history

Version	Date	Amendments
1	June 2014	First issued

Acknowledgements

The OMS Framework and this supplement were produced by an OGP Task Force. It had substantial support and input of IPIECA, the global oil and gas industry association for environmental and social issues, over a four-year period. Over 40 people contributed to this work, representing oil and gas operators, and contractors and industry associations. They were supported throughout by the OGP and IPIECA secretariats, and a technical editor.

Contents

Acknowledgements	ii
Foreword	1
Introduction	3
Overview of the Operating Management System Framework	4
OMS Fundamentals	5
OMS Elements	5
Getting started	6
1.1 Establishing OMS at the corporate level	8
Step A. Leadership in practice	8
Step B. Understand context	8
Step C. Identify risks and controls	9
Step D. Set OMS objectives and conformance criteria	9
Step E. Document applicability and scope	10
Step F. OMS implementation plan/Management of Change (MoC)	10
Step G. Review and gap analysis	11
Step H. Document the company's OMS framework	11
Step I. Document the company's OMS processes and practices	12
Step J. Define success criteria	12
Step K. Implement OMS	12
1.2 Cascade the OMS to the business/asset/project level	13
Step A. Visible commitment of leaders and owners	13
Step B. Confirm risk and controls	13
Step C. Document applicability and scope	13
Step D. Management system review and gap analysis	13
Step E. Document specific requirements	14
Step F. Create a cascade plan	14
Step G. Implement the plan	14
Processes and practices	15
P1 Processes and practices for commitment and accountability	16
P2 Processes and practices for policies, standards and objectives (PSO)	20
P3 Processes and practices for organisation, resources and capability	21
P4 Processes and practices for stakeholders and customers	24
P5 Processes and practices for risk assessment and control	26
P6 Processes and practices for asset design and integrity	31

P7	Processes and practices for plans and procedures	32
P8	Processes and practices for execution and control of activities	35
P9	Processes and practices for monitoring, reporting and learning	39
P10	Processes and practices for assurance, review and improvement	43
Sustaining and improving the system		45
M1	Measures for commitment and accountability	46
M2	Measures for policies, standards and objectives (PSO)	46
M3	Measures for organisation, resources and capability	46
M4	Measures for stakeholders and customers	47
M5	Measures for risk assessment and control	47
M6	Measures for asset design and integrity	47
M7	Measures for plans and procedures	47
M8	Measures for execution of activities	48
M9	Measures for monitoring, reporting and learning	48
M10	Measures for assurance, review and improvement	48
General references on management systems		49
OGP and IPIECA references on processes and practices		51

Foreword

The new OGP–IPIECA Report No. 510, *Operating Management System Framework* provides an integrated and consistent approach to help companies define and achieve performance goals and stakeholder benefits, while managing the significant risks inherent to the oil and gas industry.

Here, “operating” applies to every type of activity, whether upstream or downstream, from construction to decommissioning, throughout the entire value chain and lifecycle of the business and its products.

The OMS Framework offers the flexibility to address some or all of a wide range of risks, impacts or threats related to occupational safety and health, environmental and social responsibility, and process safety, quality and security.¹

The Framework is supported by this supplement, Report No. 511, *OMS in practice*. It provides guidance on how to establish and sustain an OMS. It also provides many examples of industry specific processes and practices. It is a separate publication from the OMS Framework, so it can be updated to reference the latest OGP and IPIECA good practice publications and to provide links to other relevant publications.

¹ Financial risk and performance are not included in the scope of the OMS Framework.

Introduction

OMS in practice provides practical guidance on how to establish and apply the four Fundamentals and ten Elements of the Operating Management System Framework within a company and its businesses, assets and projects.

This supplement is in three sections:

- 1) **Getting started.** How to use the guidance for companies yet to establish an OMS and for those with existing systems under review as part of continuous improvement.
- 2) **Processes and practices.** The oil and gas industry has a range of standards, processes, practices, rules, methods, guides, tools, procedures and work instructions that aim to reduce and control its risks. They are referred to collectively as “processes and practices”. This section offers examples of these, called P1 to P10.
- 3) **Sustaining and improving the system.** This section offers examples of measures, called M1 to M10, to assess the successful implementation, improvement and effectiveness of an OMS.

The example processes and practices and measures are numbered to align with the ten Elements. A single process, practice or measure could contribute to meeting several Expectations in different Elements.

OMS Terminology

The terms used in Report No. 510 and defined in its glossary are intended to be generic. The report has a risk basis derived primarily from safety processes, so companies may need to interpret and adapt some terms to broaden their applicability and to meet the scope of their OMS.

Report No. 510 does not mandate requirements or use terms such as “must” or “shall” that imply requirements. Terms including “should”, “will” and “ensure” are used when an approach is recommended for a suggested or example process or action. The words “may” and “can” are generally applied to encourage consideration of one of several options.

A company’s OMS should use clear and consistent terms that clarify applicability of the system and to differentiate required processes or actions from optional ones.

Overview of the Operating Management System Framework

The OMS Framework provides a company-wide, integrated approach to manage risk (including effects, impacts and threats) to achieve benefits and to optimize performance.

An overview of the Framework is shown as Figure 1.

Depending on the scope of the system as defined by the company, an OMS can address a broad range of risks, including those associated with occupational safety and health, environmental and social responsibility, and process safety, quality and security.



Figure 1: The OMS Framework—Four Fundamentals underpin ten Elements

OMS Fundamentals

Four Fundamentals form the basis of an effective OMS:

- Leadership
- Risk Management
- Continuous Improvement
- Implementation.

These Fundamentals are not applied sequentially. Constant focus on each Fundamental will sustain the OMS, strengthening its performance and effectiveness.

OMS Elements

The OMS Framework helps the company responsibly manage operating activities and assets – the list of “What-to-do”. Ten Elements together form an OMS structure. The four Fundamentals apply equally to every Element of the OMS to drive its success.

Each Element includes an overview, a purpose statement and a set of Expectations.

Although documentation is not included as a Fundamental, every Element requires documentation and records. Processes for document control and record management are essential for an effective OMS.

Getting started

These practical steps to getting started are generic. They should be followed in an iterative process to define and address risks related to a company’s operating activities, including projects.

This will allow the company to develop an OMS scope appropriate to its own context and business, including environmental considerations, health and safety, social responsibility, quality, security or any other type of risk.

Figure 2 illustrates typical steps getting started with the OMS Framework. These steps can be used to develop an OMS for the first time or for a major revision. They can also be used to confirm that an established and mature system is aligned with this guidance.

A company will usually start to establish a structure and framework for its OMS for implementation across all its activities and assets. It could do this, for example, by starting with Elements 1 to 3 to ensure that appropriate company-wide accountabilities, policies and organisation are in place at the corporate level.

Once all the Elements are established at the corporate level, the OMS can then be cascaded and implementation plans can be set for other levels of the organisation. Typically, this will mean cascading corporate requirements into business and asset processes to develop and document the OMS at the local level.

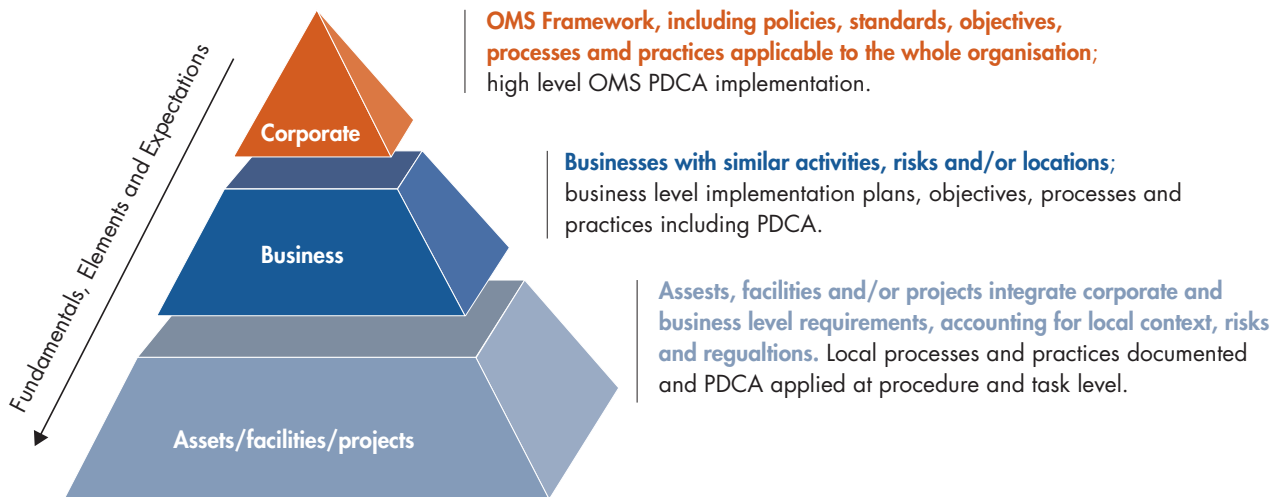


Figure 2: OMS implementation hierarchy

For larger organisations, intermediate steps may be required to tailor the OMS documentation for similar operations and areas with common risks (businesses or locations within regions or countries). This is illustrated in Figure 3.

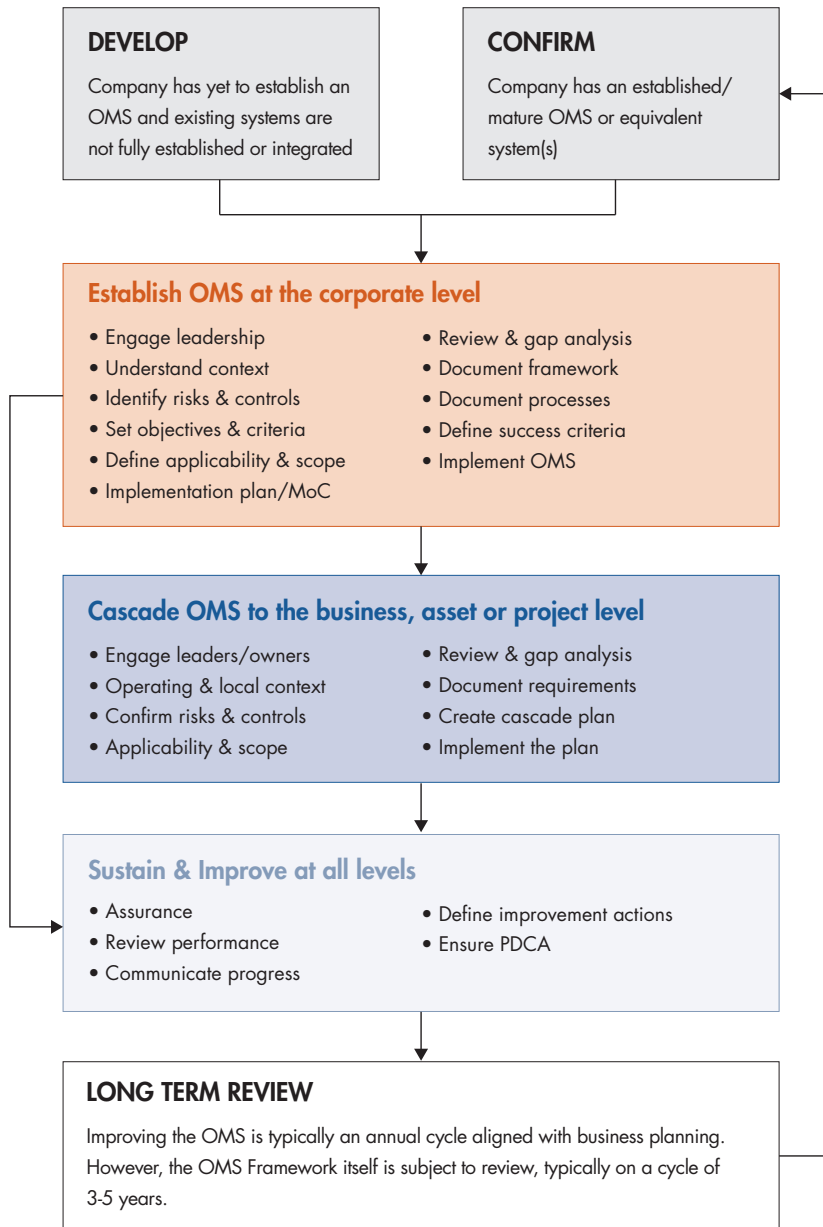


Figure 3: Establishing and sustaining an OMS flow chart

1.1 Establishing OMS at the corporate level

This guidance is intended to help companies get started on OMS development at corporate level. This development may be treated as a major project. It will depend on the scale and diversity of the organisation, and the extent of change expected.

Eleven steps are suggested here (steps A–K). Applicability of the steps will depend on the maturity of existing systems. The steps are usually followed as part of an iterative process.

When establishing the system for the first time, a lot of effort should be devoted to steps A to E.

The applicability and scope of the OMS may be revisited as a result of completing a gap analysis (step G).

Step A. **Leadership in practice**

Aligned with the OMS Leadership Fundamental, a first step should be to ensure strong ownership and engagement at all levels, and particularly at the highest management level of the company and each of the businesses and assets.

From the outset, leaders should demonstrate their commitment to the OMS through active consultation and involvement. They should ensure that those who will own the system in the future contribute to its establishment and development. To help forge discipline and ownership to support effective implementation, leaders should foster regular, consistent, two-way communication on the importance, benefits, challenges and progress of the OMS.

Step B. **Understand context**

To establish OMS, an initial step should be to assess and document the most significant factors affecting the context within which the company operates.

Examples are the different challenges posed by operating at a national or international level, with a narrow or wide range of activities, and with a range of technically similar or very diverse assets.

The development of an operating management system can also be influenced by governance structures, stakeholder expectations, legal and regulatory requirements, local culture, environmental sensitivities, social conditions, history of events and public perception.

Step C. Identify risks and controls

Applied from the start, the Risk Management Fundamental ensures that the OMS scope will methodically address risks for the whole company at all organisational and activity levels.

Taking into account the context established in step B, operating risks should be identified, assessed and recorded in a risk register. This ensures inclusion of risks with company-wide consequences.

A typical corporate risk register focuses on the potential health, safety and environment (HSE) social and security consequences of its directly owned and managed activities. The corporate risk register should also take account of the entire range of business activities, including outsourced activities, supply chain and customers through to end users, as well as the lifecycle of its products, services, activities and assets.

These company-wide risks then should be reviewed to determine which risk the OMS needs to control.

Generally, OMS risk controls/barriers are limited to those aspects of risk managed by the company itself.

Other risk controls may be “external” (i.e. managed by third parties, including suppliers, customers or governments) and the company may have limited or no influence on their effectiveness. In these cases, and depending on the nature of the risk, the OMS may have controls to monitor, respect and respond to the external controls, rather than seek to control the risk directly.

Step D. Set OMS objectives and conformance criteria

Taking into account the company’s most significant risks and envisaged controls, a useful next step is to clarify and update existing OMS objectives or to set new company-wide objectives for the OMS.

Objectives will differ depending on the company’s activities, assets and context. Such high level objectives should state what the OMS is intended to provide. For example, objectives can be in terms of consistently managing operations responsibly and safely, eliminating or reducing risks, complying with legal and other applicable external requirements, and continuously improving performance.

These objectives should be documented, widely communicated and taken into account when reviewing the OMS’s effectiveness.

Step D should also include decisions on conformance criteria for the system. Effectively, this is a list of internal and external requirements or practices that will be taken into account when developing the system.

Conformance criteria should include legislative and regulatory requirements, and existing mandatory requirements and processes from corporate or business levels. In addition, and again taking into account corporate-level risks and controls,

conformance criteria should include decisions on whether the system is intended to align with specified international or industry guidelines and/or standards.

The extent of the alignment also needs to be taken into account, particularly if there is intent to claim alignment publicly, or to seek third party verification or certification. Examples include deciding the extent to which the OMS Framework will be applied, or whether the company’s OMS aims to meet external standards or be certified against them.

General references on management systems are provided at the end of this supplement a starting point for companies to consider existing guidance and standards relevant to an OMS for oil and gas industry assets and activities.

Step E. Document applicability and scope

An OMS should have clear application boundaries. Applicable operational and project activities should be identified and documented to ensure coverage of all relevant assets.

The OMS scope is then defined. The scope should take into account the context and the types of assessed risks and controls that will be managed for the applicable activities and assets.

The integration of controls within an OMS allows different areas of risk to be addressed, so the system’s scope can potentially address any or all of the following:

- quality, including product stewardship
- occupational and community health
- personal and process safety
- local and global environmental impact
- security of people, assets, information and reputation
- social responsibility to employees, the local community and other stakeholders
- management of suppliers and contractors.

Its scope should also state the extent to which the system will align or conform with international or national management system standards and guidelines, whether required or voluntary.

Step F. OMS implementation plan/Management of Change (MoC)

Having determined the context, risks and scope, a transition plan should be developed that sets out how the company OMS will be developed or modified and documented. The plan should also identify the people and other resources to execute the plan, including how it will be communicated within the company, and the timetable for assets to implement the OMS locally.

The transition plan should detail the sequence of steps and actions required at each level of the organisation. It should include accountabilities, resources and measures to evaluate the progress of implementation.

An important aspect of the transition plan is a Management of Change (MoC) process to address risks related to the phasing out of existing systems or the need for additional checks to ensure transitional arrangements are effective.

The outcomes of the review and gap analysis (step G) should be considered and relevant actions should be incorporated in the transition plan.

Step G. Review and gap analysis

For the operating activities and assets within the defined scope, the company's existing systems and risk-control processes should be reviewed against the intended scope and applicability of the OMS. This review should include current policies, standards and objectives.

A gap analysis of the current systems against the objectives and conformance criteria should be a component of the review. The gap analysis aims to ensure the completeness of the system by documenting the full set of control and management processes needed within its defined scope.

When adopting all or parts of the OMS Framework, this gap analysis should cover the ten OMS Elements, as well as any other relevant management system guides or standards.

The identified gaps should be reviewed to take into account the context (including regulatory) and significant risks already documented.

This review can be time-consuming, but it is critical for the development of a holistic and precise description of the OMS at the corporate level. It is also important to candidly review the extent to which the company's current approach to management systems is aligned with the four OMS Fundamentals because this may highlight the most important gaps to be addressed.

Step H. Document the company's OMS framework

Based on the findings of the review and gap analysis, the system should be documented to set out the company's equivalent of Fundamentals, Elements and Expectations, customised to form an OMS Framework that is specific to the company.

Internal stakeholder consultation and external benchmarking are valuable to check that the company's OMS Framework-level requirements are clear, practical, assessable and fit-for-purpose.

Step I. Document the company’s OMS processes and practices

OMS documentation should provide clear direction and instruction on how to implement the company OMS framework requirements consistently. If they are not already in place, corporate processes and practices should be identified, developed and documented.

The next section of this supplement (*Processes and practice*) provides examples that are commonly applied in the oil and gas industry, and which are often the subject of published guidance from OGP, IPIECA and others.

Companies should clearly state whether the processes and practices are mandatory (to meet requirements) or discretionary (approaches and options intended for consideration).

Step J. Define success criteria

Before launching the OMS and its documentation, leaders throughout the company should understand how to judge the OMS implementation’s success. To support continuous improvement, processes, measures and criteria should be established to assess the effectiveness of the system and to ensure that everyone understands how its performance is evaluated, reviewed and improved.

For measures to evaluate OMS performance, see the *Sustaining and improving the system* section.

Step K. Implement OMS

Corporate leadership should actively communicate the company’s objectives, the OMS Framework and processes, and its success criteria. Implementation should continue through a planned roll-out to the organisation and may be in a number of stages. Monitoring and review of the OMS against the success criteria should start immediately.

1.2 Cascade the OMS to the business/asset/project level

Steps A to G here are similar to the steps in the *Establishing OMS at the corporate level* section, but they assume that the overall OMS, including applicability and scope, has already been developed at a higher level in the organisation.

Step A. **Visible commitment of leaders and owners**

It is critical that everyone involved in establishing the OMS is visibly committed. This is the case whether a leader is at the business, asset or project level, or is an appointed owner with specific responsibilities for parts of the OMS. As well as engaging proactively and enthusiastically, leaders should devote sufficient time and resources to establishing the system.

For a business, asset or project, the first step should be to consider and review the operational context and the local regulatory, environmental and socio-economic constraints. They may include the proximity and characteristics of communities and ecosystems, the culture and diversity of the workforce, a register of applicable legal and other requirements, and records of stakeholder engagements, including expectations and concerns.

Step B. **Confirm risk and controls**

The local risk register should take into account the corporate-level risk register, as well as known hazards, impacts, effects and threats. Examples include those associated with issues such as hydrocarbon containment, emissions and discharges, safe work systems, security and contingency measures, community concerns, product quality control, contractors and suppliers, and emergency preparedness at the facility, plant or project.

Step C. **Document applicability and scope**

Cascaded from the corporate OMS, applicability and scope at the business, asset or project level should be reviewed and potentially supplemented to reflect the local context and local risk register. This should include any specific requirements, including conformance with external standards and relevant agreements or partnerships.

Step D. **Management system review and gap analysis**

Existing risk control systems and processes of the business, asset or project should be reviewed to ensure that appropriate management controls are in place in the form of processes, practices and procedures.

An important component of this review is to perform a gap analysis of the asset's current systems against the corporate level OMS requirements and other relevant management system guides or standards. The gap analysis ensures the

system’s completeness by confirming the full set of control and management processes that need documenting within the OMS’s defined scope.

This review can be time consuming, but it is vital to develop a thorough understanding of what the OMS will deliver at a local level.

Step E. Document specific requirements

At the business, asset or project level, specific requirements should then be documented to address outcomes of the management system review and gap analysis. This may involve supplementing the corporate-level OMS to include local regulatory compliance requirements and risk controls specific to local activities.

Documentation may need to reflect any different target audiences to ensure clarity and understanding. For example, work instructions should be less complex and formal than engineering design or policy documents.

For businesses, assets and associated facilities, the OMS should provide an organised, comprehensive and hierarchical library structure for all operating documentation, including processes, practices and procedures. It should be supported by subordinate documentation such as templates, work instructions, forms and reference datasets. The documentation should address normal and abnormal operating conditions and situations, including emergency procedures and responses.

Step F. Create a cascade plan

Cascading an OMS to the business, asset or project level is likely to require a detailed plan comprising a sequence of sub-plans focused on communication to and training of employees and contractors.

The plan should identify the teams and other resources to execute it, as well as the timetable for implementation. It should include accountabilities, a Management of Change (MoC) process and measures to evaluate implementation progress.

Step G. Implement the plan

During implementation of the plan, communication and participation across all levels of the business or asset – especially management – is essential. The effectiveness of the OMS depends on the active involvement of employees. Progress should be monitored, including corporate measures, with records maintained of authorisation and action to address exceptions.

The OMS implementation should be embedded at this stage, so that the system becomes the consistent operating mode at the local level and continuous improvement becomes routine.

Processes and practices

This section provides example processes and practices (called P1 to P10) that are commonly adopted and adapted by oil and gas companies within their management systems.

The company should:

- clearly differentiate the processes and practices that are mandatory to meet OMS Expectations or other requirements from documentation that are not mandatory but provide approaches expected to be considered or offered as a choice
- consider which processes need to be company-wide or at a business, asset or project level to provide consistency of controls within the OMS
- select and develop processes in appropriate detail for their activities and assets.

These examples are grouped here according to the ten Elements defined in the OMS Framework.

Any one process or practice could address several OMS Expectations in different Elements. An Expectation may need to be supported by a combination of different processes and practices.

P1

Processes and practices for commitment and accountability

OMS leadership team

Establish a leadership team or committee to oversee and review the execution of the OMS at company level. Appoint a management representative to support the team who is accountable for co-ordination, oversight and performance reporting on the OMS. Leadership teams can also be established at business and asset levels.

OMS system owners

Establish and train owners for each part of the OMS, with appropriate authority in the organisation. System owners should be accountable for the oversight and co-ordination of activities within the scope of their part of the OMS. They should also be accountable for monitoring effectiveness, maintenance and improvement within this scope.

To assist the system owners, it is often helpful to designate an administrator to facilitate implementation of their guidance and requests. System owners can be established at company, business or asset levels in the organisation.

Roles of system owners typically include actions to:

- assess continuous improvement
- develop and seek agreement to improvement objectives and actions
- report performance based on key performance indicators (KPIs) and/or audit and assessment outcomes
- co-ordinate with other OMS system owners and line managers as appropriate
- manage change procedures for planned system enhancements
- review training requirements and complete training targets.

Communication

It is important to assign responsibility for prompt, appropriate and engaging communication to those involved in delivering OMS performance.

Good communication practice includes:

- understanding the topic and the audience
 - clarifying the objective of every communication
 - providing context to convey importance and key messages
 - using all available channels, particularly face-to-face opportunities
 - presenting information in several ways using multiple techniques
 - following through on what you say
 - developing a practical, useful way to receive and respond to feedback.
-

Management responsibilities

Managers have specific responsibilities and their behaviours set the tone for the organisation.

For example, managers should:

- be very clear about delegation, accountability and authority, so decisions are made responsibly and with ownership
- ensure the workforce are competent, with the ability, knowledge and experience to act promptly and correctly when needed
- ensure potential sources of risk are identified and eliminated or avoided where possible, or otherwise mitigated to reduce risk to acceptable levels
- communicate the most significant risks and how these are addressed through OMS controls
- welcome, encourage and respond positively to feedback from their teams, other members of the workforce and external stakeholders
- invest in the capabilities of their workforce and provide resources to improve risk management
- personally monitor and review performance, and transparently communicate status and progress
- visibly demonstrate commitment through personal engagement within the workforce and recognition of positive behaviours
- ensure the availability of appropriate and sufficient technical expertise and resources.

Leadership influence

Organisational culture can be strengthened through positive leadership qualities and behaviours.

Examples of good practices include:

- sharing strategies and clear objectives that drive the organisation to achieve high levels of performance
- reinforcing the importance of a strong culture, recognising teamwork and valuing individual behaviours
- embracing all outcomes—good or bad—as opportunities to learn and improve
- transparently reporting weaknesses, near-misses and incidents
- developing “constant vigilance” to be acutely aware of things that could go wrong and facing up to these risks
- clearly communicating that procedural short cuts or rule-bending are not tolerated

- ensuring that approved deviations are few and short-lived
- personally demonstrating visible OMS commitment by consistently adhering to the company’s policies, expectations and procedures
- surveying organisational culture assessment, and sharing outcomes and responses.

For further guidance, see Report No. 452, *Shaping safety culture through safety leadership*, published by OGP.

Documentation, data and records

The OMS Framework provides a structured and organised framework for processes, sub-systems, plans and procedures that the company implements to meet the Expectations within the Elements.

As the OMS is developed and established, it becomes a valuable repository of corporate knowledge, learning and performance history. To retain this value, documentation, data consolidation and record-keeping should be disciplined and well-organised.

Creating an accessible, accurate and complete repository of a company’s OMS information can be a considerable task, but it is repaid when this information supports continuous improvement and effective implementation.

Documentation, data and records should be regularly maintained to keep it reliable and up-to-date. It is important that OMS requirements do not generate documentation, data and records for the sake of it.

Typically, an effective documentation, data and record-keeping system will have:

- clear relationship of documents, data and records to OMS Elements and Expectations
 - assigned ownership and approval authorities
 - consistent language, terminology and document formats
 - version control, revision date and management of change (MoC) procedures
 - evidence of periodic review and approval
 - verification and tracking of data, including key performance indicators (KPIs) and actions
 - accessibility to current documentation and removal of obsolete versions at point of use
 - security classifications and information protection and archival measures (including back-up).
-

Documentation systems are often allowed to grow “organically”. System integration can then become a challenge.

Inconsistency can prevent sharing of data and good practices. Inconsistency can also lead to a lack of common language, interpretation differences and greater complexity or confusion relating to OMS responsibilities.

To avoid this, effort should be devoted—ideally in advance—to planning, document control and establishing a common terminology. Enhancing the accessibility of system information and the simplicity of language will support the effectiveness of the entire OMS.

P2 Processes and practices for policies, standards and objectives (PSO)

Periodic PSO review

Establishing a regular review process will confirm alignment of policy, standards and objectives (PSO) to changed requirements, benchmarks, changes in risk, or significant lessons from past experiences such as investigations. It is essential to establish a process for review of applicable regulations and standards at the local, national, regional and international levels to ensure PSO are aligned and remain up-to-date.

Review outcomes and actions should be subject to MoC (Processes and practices, P5, *Management of change*).

Organisation programmes and objectives

To demonstrate and communicate PSO commitment, programmes, initiatives or campaigns should be developed at an appropriate level of the company to meet short and long-term strategic objectives. They should have clear responsibilities and timelines, and have measureable success criteria. Programmes should stress communication and accessibility of PSO to the workforce.

PSO feedback mechanisms

As input to PSO review, processes to gather and consolidate feedback on their applicability and effectiveness can be used to identify shortfalls against Expectations. Feedback (whether attributed or anonymous) can be from the workforce to company PSO owners, or it can be from the company to partners, third parties or external policy makers and regulators.

Exemption/deviation process

An exemption/deviation process allows an exemption or deviation from an OMS requirement that has been risk-assessed and approved by an appropriate level of management.

P3 Processes and practices for organisation, resources and capability

Organisation charts

Hierarchical organisation charts showing the current relationship between assets, activities and individuals (job titles and roles) should be put in place. A system should also be in place so this data is continually updated.

The optimum solution is a web-enabled database, accessible to all members of the workforce. It could also provide unique input to other databases—for example, for training and competency assurance records, and OMS documentation.

Personal objectives

Inclusion of tasks as personal objectives in performance contracts can increase the ownership and engagement of the workforce. Personal objectives should be supported by training and related to continuous improvement or other aspects of OMS effectiveness.

Organisation change

Robust and comprehensive management of change (MoC) is essential to assess, mitigate and review actual and potential risks, as well as impacts on operating activities and the OMS itself.

Workforce participation

Organisational mechanisms and programmes that encourage consultation between managers and workers can enhance a co-operative culture in the workforce.

They can cover a range of topics, such as:

- representation on development of policies, standards and objectives
- understanding and responding to change (proposed or confirmed)
- aligning and embedding OMS Fundamentals
- reviewing company, business, asset or project performance, including unplanned events or incidents and continuous improvement
- identifying new impacts, threats, effects or hazards, followed by risk assessment and control
- contributing to initiatives that support and provide benefit to others—inside the company or externally—such as local communities
- involving and supporting contractors who are part of the workforce, as well as suppliers of goods and/or services, again both inside the company or external.

Standards such as BS OHSAS 18001:2007, *Occupational Health and Safety Management Systems* recommend participation and consultation practices.

Training and competence assurance programme

There is considerable value in establishing a programme at the corporate, business, asset or project level to provide sufficient competence across the organisation. There should be documented processes in place that clearly define the competencies required for the individual roles and jobs within teams.

Records should be retained and kept up-to-date to assure that training has been completed and competencies have been assessed as adequate.

Attention should be paid to individuals and teams when reviewing capability. Risk-based measures should be in place to address temporary gaps.

Critical roles in terms of operating risk may also be identified, documented, tracked and regularly reviewed. This ensures appropriate priority is given to assessment, training requirements, fitness-to-work, development plans, mentoring, performance review and succession plans.

Succession planning

To support business continuity and development of resources, a regularly updated plan—including actions to support management of change (MoC)—should be established to ensure people in identified critical roles can be replaced if they retire, transfer or leave their role for other reasons. Similar plans should be established by suppliers and contractors.

Supplier and contractor programmes

Specific training, tools and initiatives can be provided to improve the risk awareness and performance of suppliers and contractors who provide goods and services.

Local content

The capability and capacity of the labour force, suppliers and contractors should be assessed. Programmes may be put in place to enhance opportunities for local sourcing of people, goods and services.

For further guidance, see *Local content strategy: a guidance document for the oil and gas industry*, published by IPIECA.

Resource mapping

For large or complex organisations based in multiple locations, tools to identify and access specific resources, skills and knowledge can be an advantage and support consistent OMS implementation.

Contractor management

Managers and workers should be trained and be able integrate operating risk management where they are responsible for contracting activities and oversight of contractors.

Based on the criticality of the products or services to be provided, the contracting process should incorporate specific health, safety and environment (HSE), social responsibility and security criteria for:

- *Planning*—including scope of work, schedule, deliverables and performance indicators, risk assessment and mode of contracting
- *Capability assessment*—of suppliers and contractors before tendering and award
- *Approval*—a list of qualified, approved contractors and suppliers is established and maintained
- *Risk controls*—to ensure they are planned, communicated, implemented and verified during the mobilisation, execution and demobilisation of the contract
- *Performance evaluation and feedback*—to ensure it is regularly provided during the contract and at close-out.

For further guidance, see Report No. 423, *HSE management – guidelines for working together in a contract environment*, published by OGP.

Interface and bridging

For activities involving multiple parties using different management systems, the processes that will prevail should be agreed on. How the interfaces and other bridging mechanisms will operate should also be agreed on.

Bridging may also be applied where there is no contractual relationship, such as with other operators, non-oil activities or emergency services. Typically, this means identifying alignment and relevant gaps (including roles, responsibilities and actions) in the different management systems of the participants.

P4 Processes and practices for stakeholders and customers

Stakeholder mapping

Significant stakeholder groups should be identified to allow the company, its businesses or individual assets to consider the current status of relationships, and to prioritise and manage their engagement activities. These groups can include investors, partners, employees, suppliers, local communities, regulators, academics, non-governmental organisations and trade associations.

Mapping should be provided as a starting point for communication, active engagement, actions, planning and regular review.

Local community engagement plans

Having a consistent and context-based strategy for engaging significant stakeholders is critical for establishing constructive and long-lasting relationships. This strategy should recognise local context—for example, culture, language, gender and educational levels.

An engagement plan should typically include early establishment of communication forums and other mechanisms that can support:

- inclusion of diverse and vulnerable groups and sub-groups in the community
- early communication and response to assessment and mitigation of potential risks, impacts or threats related to safety, environmental, health, social or security issues
- confirmation of compliance with stakeholder requirements where appropriate
- documentation of commitments and agreed actions, including partnerships, local content and other sustainable development and community relations initiatives
- awareness of emergency and preparedness planning so if there is an incident, all necessary actions protect company people and assets, the community and the environment
- monitoring and follow-up throughout the lifecycle of business activities
- accessible mechanisms to register complaints and resolve conflicts or grievances.

For further guidance, see *Operational level grievance mechanisms: good practice survey*, published by IPIECA

Partnership programmes

Formal programmes can be established to include sites or community locations involving partners, such as collaborative ventures or community projects. By engaging and co-ordinating, mutual benefits can be realised where the company has shared responsibilities, or limited control or influence.

See *Partnerships in the oil and gas industry*, published by IPIECA.

Providing services

Operating risk management should be integrated into activities when supplying services to customers, partners or other parties.

Agreements and contracts should incorporate specific health, safety and environment (HSE), social responsibility and security criteria, such as:

- processes to ensure regulatory compliance as appropriate
- communication of risks associated with the services provided or with the product, including its foreseeable misuse
- a way to deal with non-conformances and complaints.

Product stewardship

Sources of internal and external expertise should be established to provide support for the company's products marketed through its value chain, particularly in the areas of:

- *handling and transport* of raw materials, intermediates and final products
- *waste management*—handling, disposal and recycling of materials
- *health, safety and environment (HSE) hazard mitigation of materials*, including acute and chronic toxicity and environmental effects of substances
- *cumulative risk consideration* during the product life-cycle
- *compliance with product and chemical regulations* in countries and regions where the company's products are marketed and supplied
- *product information*, including labelling and safety data sheets (SDS)
- *provision for product recall* throughout distribution to end-users
- *Quality assurance and control (QA/QC)* of the company's products.

Statistical testing and analysis, response to non-conformances and complaints, and design and manufacturing improvements are examples of processes that ensure customers consistently receive high-quality products and services.

To enhance customer confidence, QA/QC systems integrated in an OMS can be implemented to conform to an accepted standard, such as the ISO 9000 family, or to be audited under the ISO 19011 regime.

P5**Processes and practices for risk assessment and control***Risk management processes*

An organisation-wide risk management process should be established to meet the Expectations of Element 5 and to embed the Risk Management Fundamental in all the organisation's practices and processes. The company can apply risk management to a particular product, process or project, and to parts of or the whole organisation.

The risk management process will typically address:

- the organisation's rationale for managing risk and determining risk acceptability
- its preferred methods for undertaking risk assessments
- links between the organisation's objectives and policies, and the risk management process
- accountabilities and responsibilities for managing risk
- the way conflicting interests are dealt with
- committing appropriate resources to support those accountable and responsible for managing risk
- the way risk management performance will be measured and reported
- the commitment to review and improve risk management and associated processes periodically, and in response to an event or change in circumstances.

A common practice to support risk management consistency is to establish a company-wide risk assessment process. Companies can apply this during the life-cycle of their activities to account for changing risks during project and operational phases (i.e. from access, design, construction, and operations through to decommissioning and abandonment).

Assessments should be reviewed periodically to ensure continued validity.

They can also recognise positive impacts and the optimisation of benefits that the business activity may provide. These could include the development of people, local capacity building, environmental conservation opportunities, infrastructure (e.g. water wells, clinics and roads) and community health, education and road safety.

Risk controls/barriers should be implemented to eliminate or mitigate the assessed risks. Controls take many forms, including "hard" engineered barriers and "soft" controls based on rules and procedures that rely on people's actions.

“Plant, process, people” risk controls are used in combination. Individual controls/barriers are generally insufficient to manage significant risks so several “layers” of protection” may be necessary.

There are a number of useful, commonly applied processes to help risk and control planning, including a matrix to support risk prioritisation/acceptability and use of the “Swiss Cheese” or “Bow-Tie” models for review of risk controls/barriers.

It can be helpful to standardise the corporate OMS approach on techniques to support risk management consistency and assessment terminology at the business and asset level.

Another supporting practice is to identify options for innovation and improvement using new technologies or methodologies to improve risk controls.

There are also many standards and guides on risk management. A starting point is ISO 31000:2009.

Risk acceptability

To support consistent, company-wide application of an OMS, it is important to confirm that implementation of planned risk controls/barriers will be sufficient and that any residual risk is accepted by the company and its stakeholders.

The process should be supported by management endorsement of risk reduction and mitigation plans commensurate with the risk level.

“As Low as Practicable” and “As Low as Reasonably Practicable” (ALARP) are commonly applied risk management approaches to assess whether risk controls are adequate for acceptability of the residual risks.

Similarly, “Best Available Techniques” (BAT) and “Best Available Techniques Not Entailing Excessive Costs” (BATNEEC) are widely used to assess whether risk controls are sufficient to manage environmental impact.

Risk management tools

A number of risk assessment, review and mitigation tools are used across the oil and gas industry. They should be fit-for-purpose. Companies should review external practices and learning by looking at experience and history in the oil and gas industry, and other high-hazard sectors.

Examples of tools for specific applications are as follows.

- *Quantitative risk assessment*, which uses accepted criteria to place a numerical value on risks.
 - *Qualitative risk assessment* allows risks to be identified, categorised, compared and prioritised where it is impractical or unnecessary to develop a quantitative risk estimate.
 - *Threat and vulnerability assessment* identifies and addresses security risks.
 - *Business-level risk assessment* gives a broad view of risk early in an activity's life-cycle, followed by more detailed assessments of specific areas as necessary (e.g. before an acquisition, early exploration or asset abandonment).
 - *Risk assessment matrix*—a qualitative basis to consider the severity of possible consequences and their probability of materializing (likelihood) to help to consistently evaluate different types of risks.
 - *Hazard and operability studies (HAZOP, also HAZID for identification of hazards)* provide detailed analysis of planned or existing operating processes and facilities.
 - *Environment, Social and Health Impact Assessment (ESHIA)* provides a focused evaluation of risks associated with actual or potential environmental, social and health impacts.
-

The OGP risk assessment data directory provides data and information sheets for common upstream categories of risk. See Report No. 434, *Risk assessment data directory*, published by OGP, and the related 434 series.

The OGP Environmental-Social-Health Risk and Impact Management Process (referred to as e-SHRIMP) are methodologies to identify and manage impacts. See Report No. 389, *Environmental-Social-Health Risk and Impact Management Process*, published by OGP.

The IPIECA guide to social impact assessment focuses on the likely impact oil and gas operations may have on the societies of host countries, regions and communities. See *Guide to social impact assessment in the oil and gas industry*, published by IPIECA.

Health risk assessment evaluates the potential for individual harm and protects against adverse exposures in the workplace. It includes health hazard identification, health risk evaluation, setting priorities, reducing risks, and taking remedial actions and formulating remedial action plans. See *A roadmap to health risk assessment*, published jointly by IPIECA and OGP.

Identification, assessment and management of water availability and quality risks across a portfolio of operations mean understanding a company's water needs in relation to local external factors. This can be more consistently carried out using approaches such as *Water Management Framework* and the *Global Water Tool for oil and gas*, both published by IPIECA.

A due diligence process related to human rights can be an important part of a company's overall risk management strategy, especially in countries where issues may be more prevalent. *Human rights due diligence process: a practical guide to implementation for oil and gas companies*, published by IPIECA.

Offshore production operations and installations have specific safety hazards and risks. Guidance on tools can be found in ISO 17776:2000.

Human factors

Human factors should be considered when assessing risks and establishing controls. Human factors include the interaction of cultures and individual behaviours with work activities, facilities, equipment, and management systems. They focus on psychological, physiological and engineering factors and the linkages with hardware or system controls that experience shows can affect behaviours.

Companies can incorporate human factors into activity management via a number of improvement programmes or processes, including:

- accounting for human factors engineering and ergonomics
- incorporating human factors in risk assessments
- recognising the importance of cognitive bias in risk perception and decision-making (intervening and interpreting “weak” signals)
- Awareness and understanding of critical tasks to reduce the risk of human error.

The degree to which these different approaches are applied will depend on the local situation, organisational maturity and the ability to learn from past experience (positive and negative).

See Report No. 423, *Human Factors – a means of improving HSE performance*, published by OGP.

Management of change

The risk of an OMS non-conformance or failure in any Element is increased whenever there is planned or unexpected change. An important OMS process is therefore management of change (MoC). MoC recognises that any change brings increased risk and embeds awareness with all system owners, managers and the workforce.

A number of guiding principles can be followed.

- A reliable process for MoC should be developed, documented and implemented, overseen by competent personnel.
- Changes should be foreseen and identified, including the implications of new or amended legal and regulatory requirements, and the implications across the lifecycle of activities impacted by the change.

- The workforce should be trained via examples to look for and question change situations.
 - A clearly written procedure for the MoC should be developed and available.
 - The potential impacts of changes should be assessed by competent personnel to decide if additional risk control measures are needed.
 - The authorisation for a change should be made by a person competent to make an appropriate evaluation.
 - Deviations from the MoC procedure should be recorded, approved and be subject to regular review.
 - Permanent or temporary change should be fully documented and communicated when implemented (and on reinstatement for temporary change).
 - If required, training associated with the change should be timely and competence should be verified.
-

P6 Processes and practices for asset design and integrity

Critical equipment

Establish an accessible register of critical facilities or equipment and their minimum performance criteria. Include any long-term effects that may degrade integrity, and the expected rate of degradation of static equipment.

The register can also include or provide links to:

- inspection intervals and acceptance criteria
 - design basis
 - identification of the technical authority responsible for establishing the performance criteria for the facility, component or equipment
 - process engineering flow schemes / process and instrumentation diagrams
 - safety alarms documentation showing the basis for operation
 - plot plans
 - hazardous areas classification.
-

For further processes on managing asset integrity and process safety risks, see Report No. 415, *Asset integrity – the key to managing major incident risks*, published by OGP.

P7**Processes and practices for plans and procedures***Emergency preparedness and response plan (ERP)*

The consequences of almost any incident can be significantly reduced if effective emergency preparedness and response plans (ERPs) are in place. ERPs should be in place at different levels, including those that are asset-specific.

ERPs are typically developed by specialists for execution by managers and workers, in coordination with local authorities as applicable. Because emergencies are infrequent, effective training, practice drills, emergency equipment maintenance and continuous improvement are essential. Emergency plans need sufficient resources and response equipment, as well as the means to communicate with all affected stakeholders if an incident occurs.

Plans should incorporate procedures for:

- personnel refuge, evacuation, rescue and medical treatment
- prevention, mitigation and monitoring of environmental effects of
- emergency response
- communication with authorities, relatives and other relevant parties
- mobilisation of company equipment, facilities and personnel, as well as third party resources.

IPIECA and OGP have published a range of guidance on safety, security and environmental aspects of emergency preparedness and response, including:

Guidance on evacuation from a country/region in the event of significant safety or security threats to employees and dependants. See Report No. 472, *Country evacuation planning guidelines*, published by OGP.

Oil spill response—IPIECA have produced a full series of guidance documents: *Oil spill preparedness and response report series summary* and related reports in the series, *Guide to oil spill exercise planning*, *Guide to contingency planning for oil spills on water* and *Oil spill responder health and safety*.

Business continuity plan (BCP)

A business continuity plan (BCP) should complement the emergency preparedness and response plan. It should identify an asset or company's exposure to internal and external threats.

The plan should describe how physical and human resources will be deployed during and following a threat such as a security incident, information technology failure or disease epidemic. It should aim to provide effective prevention, necessary redundancy, and recovery for the organisation, while maintaining system integrity and value chain commercial activities.

Corporate crisis management plan (CMP)

A crisis is any incident that can focus negative attention on a company and which can have an adverse effect on its employees, the company's overall financial condition, or its reputation and relationship with its stakeholders. A corporate crisis management plan (CMP) is a systematic, organised response.

Risk control and regulatory compliance plans

The preceding three plans (ERP, BCP and CMP) are essential to prepare for abnormal conditions or events. Risk control and regulatory compliance plans are also necessary to manage “normal” conditions.

They might need to be developed, for instance, to respond to specific areas of risk, specific contexts or specific requirements such as local regulations. These plans might typically include responses to issues including health, safety and environment (HSE), community engagement, environmental discharge, biodiversity and waste management.

These plans should be fit for purpose for the business need, the organisational complexity/autonomy, and the specific context and regulatory framework in which the operations are located.

For example, a community engagement plan in a mature and politically stable country will be very different to one in a remote, less developed and politically unstable location. Having a suite of plans in the OMS allows the organisation to manage risks locally while maintaining full compliance with relevant requirements and legislation.

See *Guide to developing biodiversity action plans for the oil and gas sector*, published jointly by IPIECA and OGP, and Report No. 413, *Guidelines for waste management*, published by OGP.

Critical activity procedures

Activities with potentially higher risks should have well-documented procedures that provide workers with clear guidance on how to perform the related tasks safely and reliably.

These procedures typically require verification that each step has been carried out and often include a checklist of actions. Specialists should develop the procedures. Deviation from them requires MoC.

Work instructions

Work instructions provide simple, clear and often brief documented directions on how a task is conducted by individuals or teams at workplace level. Work instructions are generally at a lower level in terms of scope and complexity than procedures.

Work instructions should be issued in accordance with the risk controls within defined plans and procedures, which typically address activities involving many tasks. They may be communicated verbally and be supported by written directions to a trained and competent member of the workforce.

Monitoring requirements and the need for protective measures or other controls can be specified in work instructions.

Technological automation of workflows can often help to further guard against the risk of human error by reducing or eliminating work instructions.

Health, Safety & Environment (HSE) plan

An HSE plan defines what should be in place during the various phases of a project or (contracted) activity and the steps that should be taken, by whom and when, to meet client and contractor requirements.

An HSE plan should demonstrate how:

- the project or activity has effective management for the complexity of specific work and each phase of execution
- risks have been identified, assessed and controlled, and that, where required, recovery measures are in place
- responsibilities for undertaking and maintaining all control and recovery measures are assigned to specific people throughout the work.

For further guidance, see Report No. 423, *HSE management – guidelines for working together in a contract environment*, published by OGP.

P8**Processes and practices for execution and control of activities***Situation awareness*

Incident investigations frequently identify a lack of situation awareness. On the part of managers or workers, this is usually an impaired understanding of—or habituation to—the current situation, or a failure to predict situations.

Situation awareness tools typically take one of two forms: small group discussions or individual evaluations of the work.

Group discussions should include “tool-box talks” and job safety analysis (JSA) discussions before starting an activity where specific concerns are raised regarding procedures and risk controls.

Individual evaluation tools include last-minute risk assessment or personal task risk assessment. These encourage people to review and evaluate the potential risks, impacts or threats faced at each stage of a task as it is being performed.

Observational tools

There are a variety of well-established tools for work observations. These tools range from observation and intervention by supervisors to advanced tools whereby workers reinforce and train one another, such as behaviour-based safety (BBS).

These techniques can vary considerably based on the culture of the organisation. While observations are primarily focused on identifying areas for improvement, the tools may also reinforce positive actions and consolidate information for analysis and organisation-wide learning.

Pre-startup review

Establish a process so that reviews are held when new or significantly modified processes are commissioned and before restarting processes that have been idle for extended periods. This process should ensure that health, safety and environment (HSE) and other relevant measures are in place and working as per design.

Reviews should confirm:

- that changed construction, equipment and instrumentation are installed and commissioned in accordance with specification
- that safety, operating, maintenance and emergency procedures are in place and adequate
- performance of process hazard analysis for new facilities; recommendations have been resolved or implemented before start-up; and modified facilities meet MoC requirements
- training of all affected personnel in the new or modified operation.

Operational readiness review (ORR)

Pre-start-up reviews are often thought of as a subset of operational readiness reviews (ORRs).

ORRs cover management practices dealing with pre-start-up reviews of:

- new processes
- processes that have been shut down for modification, and
- processes that have been administratively shut down for other reasons.

When developing, evaluating or improving any system addressing readiness, consider:

- *maintaining a dependable practice.* This could mean a written programme documenting intentions, roles and responsibilities; where and when readiness activities should be carried out; technical issues that should be addressed; and the necessary technical expertise of personnel.
- *conducting appropriate readiness reviews as needed.* Ensure a review is thorough and is flexible enough to be appropriate for simple and complex restart situations. Consider the use of appropriate tools. Document the review results.
- *making start-up decisions based on readiness results.* The results should drive action—either that the start-up can go ahead or that conditions have to be met beforehand. And communicate the results to affected personnel.
- *following through on decisions, actions and the use of readiness results.* Where conditions have to be met before start-up, track their completion and modify records as appropriate.

The same principles are applicable to other type of activities such as drilling operations or construction of facilities that involve contractors and facilities owned by contractors.

Stop work authority

Intrinsic to any approach to safety and environmental management is involving everyone in a safety culture and implementing a defence system that catches and prevents unsafe actions.

Under stop work authority (SWA), every worker is empowered to watch for potentially unsafe situations or processes and is empowered to stop a job until the problem is corrected.

Establish a process whereby it is clearly everyone's duty to stop work in the event of an unsafe condition or act that could affect personnel and/or the environment.

Discuss the use of the SWA in pre-job planning and job safety analyses. Include specific steps to take if unsafe conditions or acts are observed, including who is notified, a corrective action process, review or revision of job safety analysis (JSA) as necessary, and communication of corrective measures and required approvals before restarting work.

A successful SWA programme means training and retraining staff on the process, and driving home the message that the company will support those who stop the job. SWA only works if people know they have a responsibility and mandate to ensure safety.

Permit to work

A permit to work is a formal, written system of work control for higher risk activities with potential health, safety and environment (HSE) consequences. The permit details the work to be done and the controls and other precautionary measures to be applied.

Permits are issued, analysed, checked and closed out when completed by a competent manager or worker not involved in undertaking the work. They are usually required when a contractor's work interfaces with normal operating activities, when the work must be isolated from hazards, or when work takes place in a potentially hazardous location, such as in a confined space or at height.

The process also needs to take account of "simultaneous operations", i.e. other permitted or normal operating activities taking place in proximity to the work. An asset will normally have a single permit to work system applicable to all its activities.

See Report No. 189, *Guidelines on permit to work (PTW) systems*, published by OGP.

Fitness to work

Fitness to work, also associated with Element 3, is a systematic, structured process for identifying, assessing and managing risks associated with tasks that place specific physical or psychological demands on employees. It offers processes and tools that help to reduce the risk of injury or harm to employees, the company and third parties.

See Report No. 470, *Fitness to work*, published jointly by OGP and IPIECA.

Fatigue management

Fatigue is a highly complex issue. Approaches to its management should be tailored to considerations of culture, organisational structure and operational need.

Fatigue management should take into account the influence of circumstances outside of work on the overall risk and successful measures depend on individual behaviour. Data and information relating to fatigue management (both “leading” and “lagging” indicators) can include work hours or incident investigation outcomes involving human factors. Actions to address fatigue can include job design, shift rotation and ergonomics.

See Report No. 392, *Managing fatigue in the workplace*, published jointly by IPIECA and OGP.

P9

Processes and practices for monitoring, reporting and learning

Company-wide reporting system

The effort of systematically monitoring and reporting can be significant. An efficient company-wide reporting system should address internal needs, benchmarking and external needs. This system should be simple and relevant to encourage data reporting and avoid unnecessary complexity and burden.

Reporting system data should be collected and classified against clear definitions, using accepted industry guidelines where possible to facilitate benchmarking and public reporting.

Annually, companies should critically assess the reporting system – its practicality, indicators, definitions, severity levels, accuracy, frequency, analysis, results and risk basis. All stakeholders should be fully involved in decisions to change the system because there can be multiple uses of established data and learnings.

It is also important to ensure that low-risk events that occur more frequently do not dominate reporting at the expense of a focus on high-risk events. The former can be given prominence via indicators related to such events, especially leading indicators.

Further guidance on reporting processes, including indicators, includes *Safety performance indicators*, *Environmental performance indicators* and *Health performance indicators*, all published annually by OGP; Report No. 393, *Health Performance Indicators. A guide for the oil and gas industry*, which was published jointly by OGP and IPIECA in 2008; and Report No. 456, *Process safety – recommended practice on key performance indicators*, published by OGP.

Data recording tools

Data should be recorded for consistency and comparability using accessible input tools and be organised for ease of retrieval, reporting, analysis or audit. The tools should provide clarity on data ownership and support the accountable manager in confirming data completeness and consistency.

Immediate follow-up after events and incidents

Whether events are near-miss situations or escalate into incidents with consequences, they should be investigated to establish root cause. Actions that minimise potential recurrence should be investigated. It is also necessary to satisfy any statutory requirements for reporting and investigation.

The investigation process should comprise the following basic steps:

- initial documentation and preliminary event or incident assessment in the reporting system
- notification to an appropriate level of management (depending on the actual or potential severity)
- decision on the need for further investigation and appointment of investigation team
- actual investigation if required, comprising review of the event or incident circumstances; evidence and witness statements; and analysis of operating conditions
- determination and documentation of root causes and OMS risk control/barrier failures
- preparation of investigation report, including agreed, immediate remedial actions
- completion of actions as planned
- incorporation of findings in scheduled assurance, review and learning processes (Element 10)
- mechanism to review serious events that occurred elsewhere.

Culture surveys

An understanding of organisational culture is a valuable leading indicator of the workforce's attitude and behaviour.

Combining the use of questionnaires and focus groups is useful to collect the views and opinions of teams within a single asset or from people across the whole company.

Questionnaires are subjective, but they provide statistical baseline and trend data to identify culture issues across part of or the entire company.

Focus groups use a trained facilitator to allow deeper investigation of specific aspects of an organisation's culture, and evaluation of its strengths and weaknesses.

Plans can be developed based on survey results to address weaknesses in, for example, leadership, commitment, communication, recognition, competency and compliance with procedures.

For further guidance on culture tools, see Report No. 435, *Guide to selecting appropriate tools to improve HSE culture*, published by OGP.

Reporting boundaries

When classifying data, reporting boundaries should be to carefully defined and constructed to ensure inclusion of all events and incidents relevant to the company's OMS.

Boundaries should ensure completeness when aggregating indicator data related to activities and risks managed within the scope of the OMS. They separately identify data outside the boundary.

Depending on the focus of each indicator, boundaries can vary, e.g., safety of the workforce versus social responsibility for local communities. Consistency of boundaries between organisations can help support comparison, e.g. for industry benchmarks or external reporting.

Data analysis

To derive the maximum benefit from data collection, analysis should go beyond a brief summary of what happened: it should aim to identify underlying causal factors.

Primary causes—such as procedural defects or errors—can be better understood and addressed when there is also a deeper understanding of enabling factors such as culture, leadership and capability.

Performance should be understood relative to peers through the use of benchmarking and good practice sharing. Sources for external benchmarks can include peer company sustainability or corporate citizenship reports.

Action tracking

Corrective and preventative actions stem from reviewing the results of observations, events, conditions and other information sources recorded as key performance indicators (KPIs). Implementing the actions is critical to changing the individual or company's exposure to the identified hazard.

Verifying that actions have been completed is an indicator of the health of the reporting and feedback process. Typically, a company's reporting system includes functionality to track and log the progress of implementing identified actions to prevent recurrence of events or to correct conditions.

A good practice is to establish a KPI to ensure actions are completed in a timely manner.

Voluntary public reporting

When a company publicly shares relevant environmental, social, health, safety, security and related sustainability information, it is an opportunity to transparently engage stakeholders on its operating management approach, progress and performance. Public reporting can be integrated with processes such as stakeholder mapping (see Element 4) to target different stakeholders with appropriate communications.

See *Oil and gas industry guidance on voluntary sustainability reporting*, produced by IPIECA, OGP and API.

Transfer of learning

Multiple communication channels should be established for outcomes from monitoring and reporting processes. The types of communication will vary and be based largely on the nature of the lesson to be shared and the recipients of the message.

Commonly used communication and sharing mechanisms include:

- *Alerts or bulletins*—briefly summarising lessons from events or assessments that can be widely disseminated through the workforce
- *“Tool-box talks”*—onsite workgroup discussions to apply learnings in preparation for an upcoming task
- *Communication packs*—prepared presentations and supporting information to equip a manager, supervisor, or team leader to reinforce applicable lessons more thoroughly than they could in a standalone bulletin
- *OMS feedback*—communicating learnings to applicable OMS owners and administrators so they can be incorporated in the system as part of continuous improvement
- *Training*—updating course content and competency profiles to reflect learnings.

Lessons learned from external sources should also be part of the company’s information sharing. Lessons and good practices from peer companies, regulators or other industries can reinforce and supplement internal lessons learned.

It is also important that the processes the company uses to share lessons learned are reviewed periodically. This verifies that information is reaching the intended audience in a timely way and in a form that maximizes benefit by supporting improved performance within the OMS’ scope.

P10 Processes and practices for assurance, review and improvement

Audit planning

An audit schedule should be systematically planned to ensure the whole OMS is covered within a defined period for all assets and activities.

The frequency and focus of audits should then be determined by:

- the assessed risk of the activity to be audited
- the status of the OMS processes to be covered
- the OMS maturity of the assets to be audited
- findings of previous audits.

OMS management review

Annually reviewing OMS objectives and effectiveness at different levels of the organisation (corporate, business, and asset) ensures senior managers understand the OMS performance and creates opportunities for continuous improvement.

On a risk basis, the review can address the outputs from monitoring, reporting and learning (Element 9) as well as assurance and audit findings, and account for owner feedback on the other Elements. The successes and failures of other companies, as well as external benchmarking, can provide additional review input.

Audits/assessments

Planned audits (often referred to as assessments) provide independent verification that the OMS delivers the expected outcomes in respect of the Fundamentals and Expectations.

For all levels of the organisation, audit outcomes should be one of the primary inputs to management review. Their conclusions can confirm system requirements are being met. They can also provide observations related to general approach, individual behaviours and accepted practices that contribute to underlying performance and culture.

An essential part of an audit process is that outcomes are addressed through agreed improvement actions, owned and tracked to completion. Auditors should have appropriate levels of confirmed competency and be independent of the activity or location being audited. Based on their competency and experience, auditors should make improvement recommendations that are considered and incorporated by the audited organisation via the agreed actions.

The degree of independence of the planned audits should be varied to provide a range of internal and external perspectives. This means that auditors familiar with facilities and processes are engaged, as well as those with “fresh eyes”. The latter auditors may come from different areas of the company, or be third parties with experience of other oil and gas companies as well as other high-risk industries.

The OMS should be implemented at each level of the organisation (corporate, business or asset) at the appropriate level of detail. A number of audits should be designed and applied to form a hierarchy of scope and applicability (often called “tiers”).

In larger organisations, this design aims to ensure OMS requirements have been cascaded to create company-wide, consistent implementation. This is supported by protocols (hierarchical checks and questions) to ensure verifications are complete and accurate in terms of the OMS requirements.

The planning of the hierarchy of audits with associated protocols should confirm and demonstrate consistency—vertically and horizontally—and allow comparative assessment of different parts of the organisation. In addition to OMS requirements, the scope of audits may be aligned with particular objectives, such as compliance with regulations.

Documentation audit/review

An additional aspect of auditing and review is to ensure that OMS documentation, including processes and practices, remains effective and fit for purpose. A history of review dates and the deadline for the next review should be stated on the document for verification during audits. Review should confirm that the documentation is being applied correctly, and that it is understood and integral to the activity/work.

The documentation should be monitored for its ongoing suitability for addressing assessed risks. It particularly needs to account for new or changed hazards, effects, and impacts or threats that could increase the level of operating risk. This should include non-routine or abnormal situations, simultaneous activities, or adverse environmental or societal conditions.

Sustaining and improving the system

Once the OMS is established and processes are in place, it should be sustained and improved by ensuring that:

- leaders demonstrate ownership through direct involvement in, and application of, system processes, and by constantly mandating the workforce’s adherence to the OMS
- all parts of the system (whether at corporate, business, asset or project level) have appointed owners to ensure their part of the system is reviewed and continuously improved, including updates to reflect learning from incidents and audits
- the corporate OMS and supporting processes and practices are documented and up-to-date, openly communicated and accessible
- at the asset level, an OMS manual or handbook is in place and up-to-date with version control, and that it is readily accessible at point of use, with supporting processes and practices, and local plans and procedures
- OMS processes are effectively implemented, consistently complied with and controlling assessed risks.

System owners should have evidence of the OMS effectiveness in driving continuous improvement. Evidence can only be provided by measuring the performance of the OMS. This measurement can be across all Elements of the system, as well as associated processes and practices that support conformance with the Expectations.

There are many possible measures of system effectiveness.

- Quantitative metrics—often referred to as key performance indicators (KPIs)—are the most objective records for analysis and evaluation of performance trends over time and across an organisation. KPIs based on standard industry measures allow benchmarking.
- Qualitative measures based on observations, surveys and verifications provide important complementary indications that culture and attitudes are aligned with the OMS Fundamentals and Expectations.

A balance between pro-active “leading” and retrospective “lagging” performance measures is good practice. Leading measures help ensure that monitoring of important risk controls/barriers is more predictive of emerging weaknesses and reduce the risk of severe consequences.

As the OMS matures, KPIs should be reviewed regularly to ensure measures remain effective and to support continuous improvement.

Report 260, *Quantitative performance measures of HSE management system effectiveness*, published by OGP, is a guide to leading indicators.

The following list of example measures can help assess implementation and effectiveness of the OMS Elements. This list is not a rigorous OMS compliance or audit protocol.

M1

Measures for commitment and accountability

- Management participation in OMS plans and assessments of OMS effectiveness to meet performance objectives
- Active management participation in the OMS processes, including worksite visits, participation in audits, incident investigations and management reviews
- Actions to address gaps in organisational leadership or accountability identified through audit findings and incident investigation
- Assessment of managers regarding their effectiveness in leading and supporting the OMS, and in empowering others to lead OMS efforts
- Undertaking and responding to surveys that assess employee attitudes and organisational culture.

M2

Measures for policies, standards and objectives (PSO)

- PSO are appropriate, up-to-date and easily accessible to users
- They are communicated and understood throughout the organisation
- Confirmation that PSO have been reviewed on schedule by a competent authority, subject to management of change (MoC), with changes documented and approved
- Documentation to clearly demonstrate that approved deviations and exemptions from PSO are regularly risk-assessed and reviewed
- Documentation and regular review of a compliance register (or equivalent) of applicable regulatory and other requirements.

M3

Measures for organisation, resources and capability

- Organisational effectiveness survey results are reviewed and acted on
- Confirm roles and responsibilities are defined and performance management is in place
- Monitoring of staff retention / turnover, time-to-fill tracking and succession management
- Completion of planned competency evaluation and review for individuals
- Competency and training of the workforce is up-to-date and gaps identified and actioned
- Training programmes are completed and evaluated for effectiveness
- Organisational capability is regularly assessed and reviewed, and gaps addressed
- Evaluate supplier and contractor performance as input to continuous improvement
- Track outcomes of monitoring processes for products or services from suppliers to the company.

M4

Measures for stakeholders and customers

- Review of conformance data for products or services provided to customers, measured by QA/QC processes
- Assess results of satisfaction surveys and related processes that actively seek and respond to feedback from customers, communities and other stakeholders
- Monitor number of stakeholder grievances received and closure of actions to address concerns (e.g. concerns of local communities).

M5

Measures for risk assessment and control

- All levels of the organisation (corporate, business and asset) and major projects have risk assessments and registers in place, appropriate for the activities
- Appropriate authority regularly reviews actions from risk assessments
- Learning from incidents, events, non-conformances and good practices from internal and external sources are incorporated into risk assessments and their review.

M6

Measures for asset design and integrity

- Check designs are well-documented and validated with HSE critical operating limits clearly identified, and that technical review actions are closed with deviations documented
- Verify inspection and maintenance work has been executed according to plans and schedules
- Ensure certifications and calibrations are kept up-to-date
- Monitor, record and analyse overdue inspection and maintenance, and unscheduled downtime
- Monitor, record and analyse excursions from operating envelopes
- Monitor status of critical risk controls/barriers that prevent major incidents
- Ensure recalls, service bulletins and modifications are addressed.

M7

Measures for plans and procedures

- Monitor activities (exercises, drills, response times) related to emergency response, crisis planning and business continuity
- Confirm completion of quality reviews and timely delivery for plans that address significant risks
- Regularly benchmark procedures against industry good practices for potential improvement.

M8

Measures for execution of activities

- Undertake pre-job briefing or tool-box talks to verify job controls are defined (i.e. the right procedures and method statements)
- Test task understanding through observations and other techniques in the workplace
- Monitor conformance with work controls (e.g. job planning, permit to work, work authorisation)
- Monitor frequency and results of regular observations of work tasks
- Monitor timely closure of follow-up actions identified through work control monitoring or task observations
- Record fines, citations or other enforcement actions.

M9

Measures for monitoring, reporting and learning

- Confirmation that managers and leaders are actively analysing and using performance data
- Lagging indicators to record events, consequences and other outcomes to assess retrospective performance
- Sufficient leading input-based indicators to monitor the application of OMS processes and risk controls
- Indicators are reviewed to ensure alignment and fitness-for-purpose in relation to risk controls and barriers to prevent major incidents
- Indicators that support a state of “mindfulness” and continuous awareness of performance
- Trends and statistical analysis of reported indicators to identify early warning signs and weak signals that can be acted on
- Monitor the timeliness of corrective and preventative action implementation.

M10

Measures for assurance, review and improvement

- Track that audits are executed as per plan, with timely implementation of action items
- Monitor trends, including repeat findings and significant new findings
- Review and analyse significant events to detect commonalities and trends, and to confirm appropriate learning is incorporated in the OMS
- Confirm formal management reviews are completed to schedule, with full participation of managers
- Confirm outcomes of management reviews have been fed into the annual planning cycle and objectives.

General references on management systems

- API. *Recommended Practice for Development of a Safety and Environmental Management Program (SEMP) for Offshore Operations and Facilities*. RP75. 2004.
- BS OHSAS 18001. *Occupational Health and Safety Management*. [British Standard for occupational health and safety management systems.]
- BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT (BOEMRE) [USA]. *Safety and Environmental Management System (SEMS) requirements for oil and gas companies*. 2012.
- CENTRE FOR CHEMICAL PROCESS SAFETY (CCPS). *Guidelines for Risk-Based Process Safety*. March 2007. [Provides guidelines for industries that manufacture, consume or handle chemicals by focusing on new ways to design, correct, or improve process safety management practices.]
- ENERGY INSTITUTE. *High level framework for process safety management*. London: December 2010.
- HEALTH AND SAFETY EXECUTIVE (HSE) [UK]. *Successful health and safety management*. HSG 65. London: HSE, 1997.
- HEALTH AND SAFETY EXECUTIVE (HSE) [UK] and INSTITUTE OF DIRECTORS [UK]. *Leading Health and Safety at Work—Actions for directors, board members, business owners and organisations of all sizes*. INDG417(rev1). London: HSE, June 2013.
- ISO 9001:2008, *Quality management systems—Requirements*. [Part of the ISO 9000 family of standards related to quality management systems. Designed to help organisations ensure they meet the needs of customers and other stakeholders while also meeting statutory and regulatory requirements related to products.]
- ISO 14001:2004, *Environmental management systems—Requirements with guidance for use*. [Part of the ISO 14000 family of standards related to environmental management.]
- ISO 17776:2000, *Petroleum and natural gas industries—Offshore production installations – Guidelines on tools and techniques for hazard identification and risk assessment*.
- ISO 19011:2011, *Guidelines for auditing management systems*. [An international standard that sets guidelines for quality management systems auditing and for environmental management systems auditing.]
- ISO 31000:2009, *Risk management—principles and guidelines*. [Part of the ISO 31000 family of standards relating to risk management.]
- ISO 26000:2010, *Guidance on social responsibility*. [Offers guidance on socially responsible behaviour and possible actions, but does not contain requirements and is therefore not certifiable.]
- ISO 55000:2014, *Asset management—Overview, principles and terminology*. [This series replaces PAS 55, Optimal management of physical assets, which was published by BSI.]
- ISO 55001:2014, *Asset management—Management systems—Requirements*.
- ISO 55002:2014, *Asset management—Management systems—Guidelines for the application of ISO 55001*.
- ISO/IEC 27001:2005, *Information technology—Security techniques—Information security management systems—Requirements*. [Part of the ISO/IEC 27000 family of standards on information security management systems (ISMS) standard.]

- OECD. *Guidelines for Corporate Governance on Process Safety*. Paris: OECD Publishing, June 2012.
[The recent OECD guidelines for “Corporate Governance on Process Safety include a set of self-assessment questions aimed at senior leaders and process safety. They can also be adapted more broadly as a useful checklist as to whether leadership has sufficient focus on managing all its most significant risks.]
- OECD. *OECD Guidelines for Multinational Enterprises*. Paris: OECD Publishing, May 2011.
[Provides recommendations on environmental, human rights, and other principles and standards for responsible business conduct.]
- OGP. Report No. 210, *Guidelines for the Development and Application of Health, Safety & Environmental Management Systems*. 1994.
- OGP. Report No. 362, *Catalogue of international standards used in the petroleum and natural gas industries*. February 2012.
- PAS 99, *Specification of common management system requirements as a framework for integration*. [A publicly available specification published by the British Standards Institution that helps visualise the common requirements for ISO 9001, ISO 14001, OHSAS 18001, ISO 27001 and several other standards.]

OGP and IPIECA references on processes and practices

- OGP. Data series. *Environmental performance indicators*. Published annually.
- OGP. Data series. *Safety performance indicators*. Published annually.
- OGP. Data series. *Health performance indicators*. Published annually.
- OGP. Report No. 189, *Guidelines on permit to work (PTW) systems*. London: January 1993.
- OGP. Report No. 254, *Environmental Management in Oil and Gas Exploration and Production*. London: May 1997.
- OGP. Report No. 260, *Quantitative performance measures of HSE management system effectiveness*. London: July 1997.
- OGP. Report No. 307, *Strategic Health Management – Principles and Guidelines*. London: June 2000.
- OGP. Report No. 384, *Human Factors...a means of improving HSE performance*. London: June 2005.
- OGP. Report No. 389, *Environmental-Social-Health Risk and Impact Management Process*. London: April 2007.
- OGP. Report No. 413, *Guidelines for waste management*. London: September 2008.
- OGP. Report No. 415, *Asset integrity—the key to managing major incident risks*. London: December 2008.
- OGP. Report No. 423, *HSE management – guidelines for working together in a contract environment*. London: June 2010.
- OGP. Report No. 434, *Risk assessment data directory*. London: March 2010.
- OGP. Report No. 435, *Guide to selecting appropriate tools to improve HSE culture*. London: March 2010.
- OGP. Report No. 452, *Shaping safety culture through safety leadership*. London: October 2013.
- OGP. Report No. 456, *Process safety—recommended practice on key performance indicators*. London: November 2011.
- OGP. Report No. 472, *Country evacuation planning guidelines*. London: September 2012.
- OGP–IPIECA. Report No. 393, *Health Performance Indicators. A guide for the oil and gas industry*. London: January 2008.
- OGP–IPIECA. Report No. 470, *Fitness to work*. London: February 2012.
- IPIECA. *A guide to contingency planning for oil spills on water*. London: October 2000.
- IPIECA. *Global Water Tool for oil and gas*. London: September 2011.
- IPIECA. *Guide to contingency planning for oil spills on water*. London: October 2000.
- IPIECA. *Guide to oil spill exercise planning*. London: April 1996.
- IPIECA. *Guide to social impact assessment in the oil and gas industry*. London: April 2004.
- IPIECA. *Human rights due diligence process: a practical guide to implementation for oil and gas companies*. London: November 2012.

- IPIECA. *Improving social and environmental performance: good practice guidance for the oil and gas industry*. London: September 2012.
- IPIECA. *Local content strategy: a guidance document for the oil and gas industry*. London: October 2011.
- IPIECA. *Managing oil and gas activities in coastal waters*. London: June 2011.
- IPIECA. *Oil spill preparedness and response report series summary*. London: December 2008.
- IPIECA. *Oil spill responder health and safety*. London: February 2013.
- IPIECA. *Operational level grievance mechanisms: good practice survey*. London: November 2012.
- IPIECA. *Partnerships in the oil and gas industry*. London: April 2012.
- IPIECA. *Petroleum refining water/wastewater use and management*. London: October 2010.
- IPIECA. *Preparing effective flare management plans: guidance document for the oil and gas industry*. London: November 2011.
- IPIECA. *Refinery Air Emissions Management*. London: June 2012.
- IPIECA. *Voluntary Principles on Security and Human Rights—Implementation Guidance Tools*. London: January 2012.
- IPIECA. *Water Management Framework*. London: September 2013.
- IPIECA–OGP. *Ecosystem services guidance: Biodiversity and ecosystem services guide*. London: May 2011.
- IPIECA–OGP. *Guide to developing biodiversity action plans for the oil and gas sector*. London: July 2005.
- IPIECA–OGP. Report No. 331, *Guidelines on minimum standards for HSE governance in joint ventures*. London: September 2002.
- IPIECA–OGP. Report No. 343, *Managing health for field operations in oil and gas activities*. London: October 2011.
- IPIECA–OGP. Report No. 384, *A roadmap to health risk assessment in the oil and gas industry*. London: December 2006.
- IPIECA–OGP. Report No. 392, *Managing fatigue in the workplace*. London: August 2007.
- IPIECA–OGP. Report No. 396, *Drilling fluids and health risk management*. London: October 2009.
- IPIECA–OGP–API. *Oil and gas industry guidance on voluntary sustainability reporting—2010 update*. London: January 2011.



**International
Association
of Oil & Gas
Producers**

209-215 Blackfriars Road
London SE1 8NL
United Kingdom
Telephone: +44 (0)20 7633 0272
Fax: +44 (0)20 7633 2350

165 Bd du Souverain
4th Floor
B-1160 Brussels, Belgium
Telephone: +32 (0)2 566 9150
Fax: +32 (0)2 566 9159

Website: www.ogp.org.uk
e-mail: reception@ogp.org.uk



209-215 Blackfriars Road
London SE1 8NL
United Kingdom
Telephone: +44 (0)20 7633 2388
Fax: +44 (0)20 7633 2389

Website: www.ipieca.org
e-mail: info@ipieca.org