

# HEALTH SAFETY & ENVIRONMENT MANAGEMENT SYSTEM (HSE-MS)

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## **Introduction**

The Africa Oil Corporation HSE Management System defines the principles by which we conduct our operations with regards to health, safety, and the environment.

All management communicates the HSE philosophy to all employees, customers, contractors, and third parties associated with our business, and each Africa Oil Corporation organization must provide positive evidence of conformance to the system in its day to day business.

The HSE Management System Oil and Gas Industry Standard model comprises eight interrelated components:

- Management Leadership and Commitment
- Policy and Strategic Objectives
- Organisation, Responsibilities, Resources, Standards and Documentation
- Hazards and Effects Management
- Planning and Procedures
- Implementation and Performance Monitoring
- Audit
- Review

These are continuously improved by conformance checks on day-to-day standards and procedures (controls) on the management system (correction) through modifications to the management system (improvement).

## **Glossary of terms**

AOC	Africa Oil Corporation
HSEMS	Health Safety Environmental Management System
CEO	Chief Executive Officer
COO	Chief operations Officer
HEMP	Hazard and Effect Management process

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**HSE Management System (HSEMS) at a glance**



## **1 Management Leadership, Commitment and Accountability**

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### **1.1 Management Leadership and Commitment**

Africa Oil Management is required to lead all aspects of HSE Management by committing to positive actions in all operations, and demonstrating to employees and contractors working for the company their personal leadership. Management establishes policy, provide perspective, set expectations and provide the resources for successful operations. HSE leadership and commitment starts at the top and is visible in all activities at all times.

Africa Oil Corporation ensure that employees delegated with the responsibility to lead others are qualified and experienced enough to make the right decisions, oversee operations and ensure targets are responsibly met. The board defines policies which are committed to. These are carried out by the chief executive officer or CEO. Managers organise and coordinate business activities in order to achieve defined strategic and agreed local objectives.

Africa Oil Corporation Leaders are required to step up in times of crisis, they are able to think and act creatively in difficult situations and lead by example. Management lead a group of people or organization to success by;

- establishing a clear vision for the working group
- sharing that vision with others so that they will follow willingly,
- providing information, methods and resources to realize that vision, and
- co-ordinating and balancing conflicting interests of all members and stakeholders.

### **1.2 Accountability**

This is requiring Africa Oil Corporation management, company individuals and contractors to account for their actions, accept responsibility for them, and to disclose the results in a transparent manner.

## 2 Policy and Strategic Objectives

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### 2.1 Policy

Africa Oil Corporation HSE Policy requires the company to follow a systematic approach to HSE management and is designed to ensure compliance with the law and to achieve continuous performance improvement. The HSE Management System accompanying the Policy describes the elements of an HSE-MS and the minimum requirements in each element or heading.

An HSE management system facilitates the management of HSE hazards and effects associated with the business of the organisation. This includes the organisational structure, planning activities, responsibilities, standards, documentation and resources for developing, implementing, achieving, reviewing and maintaining the organisation's HSE Policy and meeting its stated objectives.

The system concentrates on critical activities and should ensure that they are properly controlled and that measurements are made and reported so as to enable monitoring of overall performance and identification of areas for improvement. Management systems shall provide a structured process for the achievement of continual improvement, the rate of that is generally set by the organisation itself taking into account client and parent company requirements.

An HSE MS will bring improvement in HSE performance in the longer term but only after the company is 'working and improving the system'. This requires time for behavioural and attitudinal changes to support compliance with a system.

### 2.2 Strategic Objectives

A systematic risk based approach to the management of HSE is in place as an integral part of business planning, with HSE goals, objectives and targets established and measured. A philosophy of continual improvement is applied to HSE.

#### 2.2.1 Performance Requirements

Business planning activities at all levels of Africa Oil Corporation include HSE considerations.

On an annual basis Africa Oil Corporation sets company-wide HSE goals, objectives and targets consistent with the HSE Policy and HSE Management System to drive performance improvement. These goals, objectives and targets are linked to leading and lagging indicators that are measurable, documented, communicated and reviewed.

Business Units set annual targets that support the achievement of Africa Oil Corporation company-wide targets and take into account significant risks, legal and other compliance requirements and the interests of relevant stakeholders.

Managers, team and individual KPIs are set that support the achievement of company and Business Unit targets. These KPIs are assessed as part of reward schemes and individual performance evaluation.

HSE action plans are established which include clearly designated responsibilities, time-frames, resources and actions to achieve goals, objectives and targets. HSE risks are considered in the development of goals, objectives and targets in HSE action plans.

Systems are established to periodically monitor and report the implementation of these goals, objectives and targets including the tracking of KPIs.

Where conflicts exist between HSE goals, objectives and targets and other business goals, objectives and targets, resolution is consistent with the requirements of these HSE Standards.

*Fig1. HSE Policy*





### 3. Organisation, Responsibilities, Resources, Standards and Documents

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#### 3.1 Organisation

The organisation and resources shall be adequate for its purpose. Responsibilities at all levels shall be clearly described, communicated and understood. Staff shall be developed following structured competency assessment and training systems.

The organisational structure, roles, responsibilities, authorities, accountabilities and interrelations (e.g. partners, contractors, regulators) necessary to implement the HSE MS shall be defined, documented, communicated and reviewed at regular intervals.

The management of the organisation shall appoint (a) management representative (s) who shall have clearly defined roles, responsibilities, authority and resources for ensuring that HSE MS requirements are established, implemented and maintained in all locations and spheres of operation within the organisation.

The Management Representative shall be accountable to senior management and should have sufficient knowledge of the company and its activities, and of HSE issues, with sufficient authority to undertake the role effectively. They shall regularly report on the performance of the HSE MS to top management for review and as a basis for improvement. They shall ensure the implementation of the HSE MS in accordance with this Guideline.

All HSE Critical Activities shall be identified and recorded in the HSE Plan for each applicable project site. Responsibilities shall be assigned to every HSE critical activity and inputs and outputs necessary for its control recorded. Performance standards and mechanisms for verification shall also be in place.

Employee (company and contractors) competencies for HSE critical activities shall be defined and responsibilities and requirements associated with the control of the activities understood by the employee.

HSE responsibilities shall be updated and revised in conjunction with employees (company and contractor).

#### 3.2 Responsibilities

##### Management Representatives and HSE Advisors

The management representative for HSE (or) HSE Advisor shall have direct access to top/senior management.

Management Representatives or HSE advisors shall be HSE competent persons who meet the relevant regulatory and professional requirements to be able to provide professional HSE advice to the line.

Management Representatives or HSE advisors can be the custodian of the HSE MS but shall not be responsible for the management of HSE critical activities. This is the responsibility of the line. Management Representatives or HSE advisors are responsible for the quality and timeliness of HSE advice.

Management Representatives or HSE advisors shall monitor and communicate information on HSE issues (Africa Oil Corporation, national and international, legal requirements, stakeholder concerns) and best practice from internal and external sources.

Management Representatives or HSE advisors shall collate HSE performance reports and maintain HSE performance data for internal use - including input to the review by top management and co-ordinate the preparation and verification of the annual HSE Report.

Management Representatives or HSE advisors shall maintain an independent schedule of HSE audits/inspections and participate in the review of findings from all audits / inspections / incident investigations.

### **3.3 Resources**

Senior management shall ensure that sufficient resources are available to ensure the effective operation of the HSE MS and effective management of risks. This shall include resources available for:

- prompt rectification of HSE-related deficiencies identified by the company or regulators
- on-going verification that HSE Critical systems function in accordance with the design intent and objectives
- ongoing training to maintain and enhance competencies
- high calibre line staff to be posted in HSE function.

Staffing HSE Critical Activities as specified.

Current resourcing levels shall be sufficient to meet the requirements for staffing all HSE critical roles and shall be regularly reviewed.

Procedures shall ensure that any changes in resource level do not increase HSE risk e.g. leave rotations shall ensure resourcing does not drop to a level that will compromise HSE Critical Activities.

### 3.4 Standards and Documents

A system shall be in place for the management and control of documents in paper and/or electronic format. This shall include formal administration, custodianship for technical correctness and communication of correct use.

There shall be a manual that describes an HSE MS compliant with the guidance contained in this document and international standards. This information shall be accessible to employees and contractors in the most effective format. The manual shall be updated and upgraded in line with requirements for continuous improvement.

The function of the manual is to describe or reference the processes, documents and standards used to manage HSE and assist employees and contractors in understanding how the company will meet the objectives of the HSE Policy.

The HSE MS may be described in different ways but typically this is done in a 4-part manual as follows: -.

**Part 1: Management System Elements** (as described in this Guideline). A description of the management system under the same headings as this Guideline.

**Part 2: HSE Management System Activities Catalogue.** A catalogue of HSE Critical Activities and the specification of these activities and their associated tasks.

**Part 3: References, Documents, Codes and Standards.** A list of all the documents and standards referred to in Parts 1 and 2 with details.

**Part 4: HSE Hazards, Effects and Aspects.** A register of the significant HSE hazards, effects and aspects.

These parts are described in more detail in APPENDIX 1.

#### 3.4.1 Standards Alignment

The HSE Management standards are aligned with the requirements of company HSE Policy and recognised international and national standards including ISO 14001, OHSAS 18001, ISO 31000 and AS 4801 and support the company in its efforts to comply with legal obligations regarding HSE. The objectives of the standards are to:

- set and formalise expectations for the progressive development and implementation of more specific requirements within Africa Oil Corporation
- provide auditable criteria against which the HSE Management System can be measured
- provide a basis from which to drive continual improvement

The HSE Management Standards mandate what must be achieved rather than how to achieve it. Therefore Africa Oil Corporation has the flexibility to meet the requirements of the standards in a way which best suits their own business while maintaining consistency of approach across the company.

The system also provides mechanisms for assurance of diligence, so that in the event of a failure, it can be demonstrated that all reasonable and foreseeable steps have been taken to avoid the failure.

### **3.4.2 Health and Safety**

The HSE Management Standards outline requirements in the areas of HSE and Community with the aim to:

- Protect, promote and improve the health and wellbeing of Africa Oil Corporation employees
- Minimise and manage occupational exposures to all personnel
- Minimise adverse impacts of our operations to host communities
- Provide a work environment where people are able to work safely and understand their rights and obligations towards a safe workplace
- Promote a rewarding workplace for Employees by encouraging personal development, recognising good performance, valuing teamwork and fostering equality of opportunity

### **3.4.3 Environment and Community**

- Promote the reduction and prevention of pollution, efficient use of resources and energy and biodiversity protection
- Promote a culture of benefiting and respecting the rights and interest of the Communities in which we operate, consideration of the environmental and social impact of the resources, products and services we use or provide to others and caring about our impact on customers, colleagues, the Community, Environment and shareholders

### **3.4.4 Competency**

All HSE critical activities shall have defined competency levels recorded in the HSE MS.

- All personnel who perform HSE critical activities are HSE critical staff and require appropriate experience, qualifications and training to ensure their competence to undertake these important risk control measures.
- An HSE competency assurance process should be in place for all HSE critical employees (company and contractor). This shall document the required and actual HSE competence of employees.
- The competency requirements of all HSE critical activities shall be periodically reviewed and improved where possible. The

competence of employees shall be reassessed and shortfalls addressed.

### **3.4.5 HSE Plan**

The company shall identify and document those critical operations and installations, which require a fully documented demonstration that risks have been reduced to a level as low as reasonably practicable (ALARP) (*Refer to part 5 and Hazard and Effect register & section 4 Hazard and Effects Management*). HSE Plans compliant with regulatory requirements and EP guidelines shall be available for these operations and installations defined as critical. The HSE Plan shall be endorsed by the Asset or Process Owner and by those managing the asset or operation.

- The HSE Plan should also accurately reflect current practice at the location or site and be reviewed as per described plan review cycles.
- Contractors managing HSE critical activities shall have HSE Plan or equivalent documented demonstration in place.
- The HSE Plan should demonstrate that controls in place reduce risks to ALARP.

The HSE Plan shall detail activities that must be discontinued or restricted in given circumstances. These circumstances might be when HSE critical equipment is not available, during adverse weather or when particular non-routine hazardous activities are being carried out.

The HSE Plan is typically described in a 7-part document as follows: -.

#### **Part 1 Management Summary and Introduction**

This includes summary of the Case objectives, the main findings and risks, and a brief introduction to the main document. Sometimes the management summary is extracted as an executive document for easy distribution to senior managers, leaving Part 1 as the Introduction.

#### **Part 2 HSE MS for facility or operation**

A description of those elements of the HSE Management System that are directly applicable to the operation or facility.

#### **Part 3 Activities Catalogue**

A description of those HSE-critical activities applicable to the operation or facility. This is recorded at a level, which shows that the controls are in place, and that these are suitable and sufficient for the risks addressed.

#### **Part 4 Description of operation or asset**

A description of the operation or facility, adequate to provide background information to the hazards and effects analysis, to enable a clear

understanding of HSE-critical aspects. This will include, for example, safeguarding systems and emergency response capabilities.

#### **Part 5 Hazard and Effects Register**

This contains a demonstration that all hazards and effects have been identified, and the necessary risk evaluation has been carried out and that necessary controls to manage the causes and consequences are in place for those risks identified as significant through a process of ranking. Significant environmental effects\* will be included if the case is to be used for compliance with ISO-14001, (\*) For ISO 14001, this will include a description of those 'aspects' which result in environmental effects.

Typically, the controls and procedures in place to manage environmental, occupational health and workplace hazards and effects (aspects) which occur across the company are described in one place and referred to from the Plan. Those responsible on the facility for ensuring that the procedures are followed are identified in the management system in Parts 2 & 3 of the Plan.

#### **Part 6 Shortfalls**

This summarises any shortfalls identified, with a plan to resolve the findings and thereby improve the operation.

#### **Part 7 Statement of Fitness**

The Statement of Fitness explains that the hazards and effects associated with the installation or operation have been evaluated and measures have been taken to reduce the risks to the lowest level that is reasonably practicable. The Statement of Fitness must affirm that conditions are satisfactory to continue the operation.

## 4. Hazard and Effect Management Process (HEMP)

### 4.1 OVERVIEW OF HEMP

The objective of undertaking HEMP is to ensure that all the hazards involved with a specific operation are identified, evaluated and the risks associated with these hazards are managed to a level that is deemed 'As Low as Reasonably Practicable (ALARP).'

To reduce a risk to a level which is as low as reasonably practicable involves balancing reduction in risk against the time, trouble difficulty and cost of achieving it. This level represents the point, objectively assessed, at which the time, trouble, difficulty and cost of further reduction measures become unreasonably disproportionate to the additional risk reduction obtained.

#### Fig1: Hazard Ranking

HEMP basically provides a structured approach of ranking hazards into three main categories, as follows:

Major Hazards	Those hazards that, if realised, could result in consequences of Level 5 for People, Environment and Assets and Level 4 or 5 for Reputation.
Medium Hazards	Those hazards that, if realised, could result in consequences of Level 3 and 4 for People, Environment and Assets and Level 3 for Reputation
Low Hazards	Those hazards that, if realised, could result in consequences of Level 0, 1 or 2 for People, Environment and Assets and Reputation

The 'Risk Levels' mentioned in the above definitions relate to the AOC Risk Matrix. A *rough* guide is given in Fig 2 below:

**Fig 2: Risk Types**

<b>C/R</b>	<b>People (P)</b>	<b>Environment (E)</b>	<b>Reputation (R)</b>	<b>Assets (A)</b>
0	No Injury	No Effect	No Impact	No Damage
1	Slight Injury	Slight Effect	Slight Impact	Slight Damage
2	Minor Injury	Minor Effect	Limited Impact	Minor Damage
3	Major Injury	Localized Effect	Considerable Impact	Localized Damage
4	Single Fatality	Major Effect	National Impact	Major Damage
5	Multiple Fatality	Massive Effect	International Impact	Extensive Damage

**C/R consequence rating**

The method of evaluating the causes and consequences associated with the 'realisation' of any particular hazard is related to its risk ranking:

**Fig 3: Evaluation Methodology**

<b>Risk Ranking</b>	<b>Cause/Consequence Evaluation Methodology</b>
Major Hazard	Thesis 'Bowtie' Analysis (*) + other appropriate techniques (**)
Significant Hazard	Non-Bowtie analysis techniques, as appropriate to the hazard (**)
Routine Hazard	Non-Bowtie analysis techniques, as appropriate to the hazard (**)

Based on the Cause/Consequence analysis, each hazard is assigned a particular co-ordinate in the risk matrix.



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**Fig 4 Risk Assessment Matrix (RAM)** - In order to determine whether a particular risk has been reduced to ALARP apply the criteria using the **RISK ASSESSMENT MATRIX** below

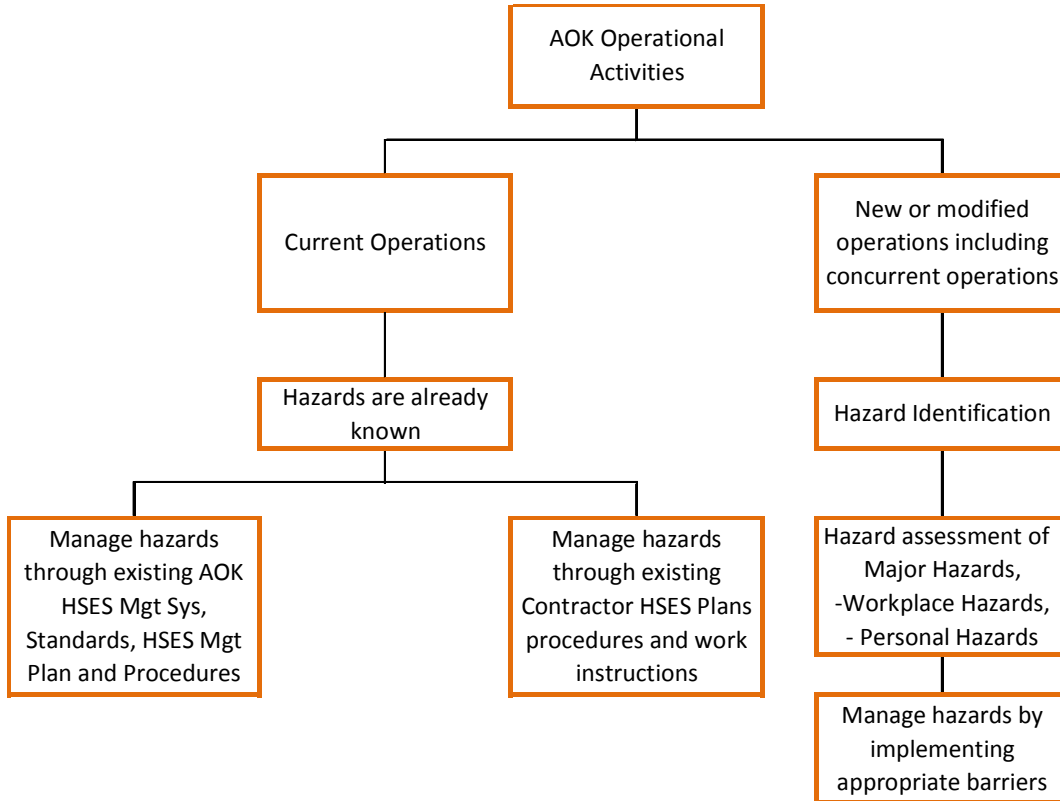
CONSEQUENCE					INCREASING ANNUAL FREQUENCY					
Severity rating	People	Assets	Environmental	Reputation	0	A	B	C	D	E
					Not been observed in the Exploration Industry (EI)	Has rarely occurred in the EI	Has occurred several times in the EI	Has occurred in the Operating Company	May occur several times a year in the Operating Company	Will occur routinely in the Operating Company work areas
0	Zero Injury	Zero Damage	Zero Effect	Zero Impact	0	0A	0B	0C	0D	0E
1	Slight injury	Slight Damage	Slight Effect	Slight Impact	10	1A	1B	1C	1D	1E
2	Minor injury	Minor Damage	Minor Effect	Minor Impact	20	2A	2B	2C	2D	2E
3	Major Injury	Local Damage	Local Effect	Considerable Impact	30	3A	3B	3C	3D	3E
4	Single Fatality	Major Damage	Major Effect	Major National Impact	40	4A	4B	4C	4D	4E
5	Multiple Fatalities	Extensive Damage	Massive Effect	Major International Impact	50	5A	5B	5C	5D	5E
<b>Low Risk</b>	Tolerable risk - No further impact reduction measures necessary. Monitor performance and manage for continuous improvement.									
<b>Medium Risk</b>	Compulsory impact reduction required - Risk is tolerable when appropriate control measures have been identified in implemented									
<b>High Risk</b>	Intolerable without detailed justification - Does not satisfy initial screening criteria. Additional risk reduction measures required. Justifiable if in compliance with ALARP principle and individual and societal risk criteria are demonstrated.									

**Fig 5: Barriers and Recovery**

<b>CONTROLS</b>	<b>INTOLERABLE RISK</b>	<b>TOLERABLE RISK</b>	<b>LOW RISK</b>
Threat Barriers	Minimum of 3 independent effective barriers to be in place for each identified threat.	Minimum of 2 independent effective barriers to be in place for each identified threat.	No acceptance criterion because outside scope of hazard analysis.
Recovery Preparedness Measures	Minimum of 3 independent effective recovery preparedness measures required for each identified consequence  (Including one to detect automatically occurrence of top event, and one other to prevent automatically further escalation).	Minimum of 2 independent effective recovery preparedness measures required for each identified consequence  (One to detect occurrence of top event and other to prevent further escalation).	No acceptance criterion because outside scope of hazard analysis.
Escalation Factor Controls	Minimum of 1 independent effective control for each identified escalation factor.	Minimum of 1 independent effective control for each identified escalation factor.	No acceptance criterion because outside scope of hazard analysis.

**4.2 APPLYING HEMP TO OPERATIONS**

The way in which HEMP is applied to AOC Operations is shown below:



### **4.3 Current operations**

The hazards are known and have been assessed in the Operations HSE Plan or the Contractor's HSE Plans; they have been reduced to ALARP and are managed on a day to day basis by the AOC or the Contractor's HSE-MS's.

### **4.4 New or Modified Operations**

The HEMP process for new or modified operations (including Concurrent Operations) is essentially:

- Identify the hazards involved
- Assess the severity of the identified hazards
- Implement appropriate controls to reduce the risks to ALARP

The scale of the HEMP is commensurate with the scale of the operation concerned:

New operations that include new facilities or civil works will generally require the preparation of an HSE Plan, with the associated HEMP generally being carried out as part of the design/detailed engineering process.

New operations using existing equipment and existing/new contractors may also require the preparation of a new HSE Case, the revision of an existing HSE Case or, for less complex operations, the preparation of a job specific risk assessment.

The exact HEMP scope will be as set out in the contract documents, but generally the Contractor will be responsible for undertaking the work and AOC operations will be responsible for over-viewing the adequacy of such work. A range of HEMP techniques may be required, depending on the nature of the operation concerned.

#### **4.4.1 Hazard Management**

HSE hazards and risks associated with the company's activities are identified, assessed and managed to prevent or reduce the likelihood and consequence of incidents.

#### **4.4.2 Performance Requirements**

Africa Oil Corporation has established a Risk Management Policy. As required under that Policy, HSE risk management is applied to all Activities that Africa Oil Corporation controls or significantly influences.

Simply put risk is managed by identifying hazards, assessing consequences and probabilities, evaluating risk and implementing preventive and mitigation measures.

Risk Assessments are conducted by competent personnel with the relevant knowledge and experience.

Potential health, safety and environmental hazards are identified and recorded for existing operations, products, business developments, acquisitions, modifications, new projects, closures and divestments. This process takes into account risks to personnel, facilities, the public, customers and the Environment.

Business Units establish and maintain a Risk register containing identified hazards and risks. Risk register contents include the risk title and classification, risk causes, consequences, exposure, probability, likelihood, plus existing controls and monitoring or control effectiveness as well as links to HSE action plans and the setting of goals, objectives and targets.

Business Units must identify all Critical Activities/tasks that have the potential to result in serious injury to people, serious environmental impact or a Major Accident Event. Critical Controls designed to mitigate the risks of serious injury to people, serious environmental impact or a Major Accident Event include Critical Systems, Critical Equipment and Critical Procedures and must be recorded in the Risk Register.

Africa Oil Corporation maintains an enterprise-wide Risk Register containing those risks escalated from the Business Units plus any additional risks identified at the company and/or Board level.

Risk registers are reviewed at least annually, and following a significant change or Significant Incident to reflect lesson learned and changes.

Where risk cannot be eliminated, control measures are selected and prioritised using the hierarchy of controls and implemented to effectively manage identified risks.

Where risks identified exceed specified threshold and immediate mitigation is not possible, the level of risk being tolerated and managed by the Business Unit must be escalated to corporate level and reviewed.

#### **4.2.3 Performance Criteria for Maintaining Controls**

Performance indicators shall be in place for all HSE-critical activities. These shall be documented in the specification of the activity together with parties responsible for each indicator.

Performance against each indicator shall be monitored and measured routinely. The results shall be trended and reviewed (Refer 6.1 Performance Monitoring).

Procedures for reviewing employee performance shall include HSE performance indicators. Good team/employee HSE performance shall be rewarded by team/staff appraisal systems.

## 5. Planning and Procedures

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This section addresses the planning of work activities, including the risk reduction measures (selected through the evaluation and risk management process). This includes planning for existing operations, managing changes and developing emergency response measures.

### 5.1 Procedure Requirement

Relevant legal and regulatory requirements and voluntary commitments are identified, documented, made accessible, understood and complied with wherever Africa Oil Corporation operates. Effective HSE document control systems are in place to ensure clarity of company expectations and to facilitate efficient and accurate information management.

#### 5.1.1 Performance Requirements

HSE-related acts and regulations are maintained and available.

Legislative and regulatory requirements (including licences, permits and approval conditions) and voluntary commitments applicable to specific Africa Oil Corporation operations are identified and documented in a Site register.

Regulatory registers are reviewed and kept up-to-date and all changes are communicated to all relevant personnel.

Where Africa Oil Corporation or its Business Units undertake voluntary public commitments in relation to HSE, these commitments are to be regarded and implemented with the same diligence as regulatory requirements.

Wherever possible, legislative and other external requirements are incorporated into the relevant operational procedures to ensure consistent, ongoing compliance with these requirements.

Compliance with legal and other requirements is demonstrated, evaluated and reported.

Where local legal requirements diverge from these Standards, Activities comply with the more stringent of local legal requirements and these Standards.

In countries where local legislation does not require an adequate level of HSE performance, Activities are conducted in a manner that is consistent with the requirements of these Standards, and relevant international standards, taking into account social and cultural sensitivities.

Systems are in place to identify which documents are to be controlled and to ensure that these documents are controlled with current versions readily available.

Systems are in place to ensure that HSE records are established, maintained, accurate, legible and identifiable and also to manage the archiving and disposal of HSE records.

HSE records have established retention times, consistent with legal requirements and knowledge preservation, and are assigned to responsible custodians.

Employee health, medical and occupational exposure records are maintained and retained as necessary, with appropriate confidentiality in place.

## **5.2 Procedures and Work Instructions**

All HSE-critical activities and the supporting tasks shall have written procedures or work instructions in place as necessary. HSE Critical Activities for the company shall be listed in Part 2 of the HSE MS.

HSE standards and procedures shall be listed in Part 3 of the HSE MS. The appropriate standards and procedures shall be readily accessible to employees, suppliers and contractors and be written in a way that users will understand. Managers shall ensure that relevant HSE procedures and requirements for their assets are communicated to suppliers and contractors.

A defined process for the development and review of HSE standards, procedures and work instructions shall be in place, which includes employee involvement. This process must ensure that HSE objectives are achieved, best practices are incorporated and legislative requirements are met.

There shall be evidence that in addition to the formal review cycle, modifications to standards, procedures and work instructions are initiated by operations personnel and reviewed in light of incidents.

## **5.3 Management of Change**

Africa Oil Corporation shall maintain written procedures for the planning and control of all changes (i.e. not only equipment changes but also organisational restructuring), both permanent and temporary, in people, plant, plant controls, processes, and procedures, to assess HSE impact and avoid adverse HSE consequences.

Change control procedures for projects shall document the evaluation and approval process, and the responsibilities and competencies of those involved.

Comparative analysis and documentation of the HSE impact of implementing the change as well as the HSE impact of the implemented change shall be an integral part of all change control procedures.

#### 5.4 Contingency and Emergency Planning Expectations

Africa Oil Corporation shall document and maintain plans for responding to abnormal situations and potential emergencies.

A process shall be in place to identify and document credible medical, operational, and environmental incident scenarios. Contingency and emergency response procedures (including medical, operational and environmental emergencies) shall be developed and maintained to identify responses to incidents and emergency situations and for preventing and mitigating the HSE impacts that may be associated with them.

There shall be a comprehensive tiered emergency response plan, which is integrated with individual site plans and external agencies as appropriate. This shall be compliant with the relevant legislation and company standards. The plan shall include:

- Organisation and responsibilities, identification of the incident command structure (command and control personnel)
- Systems and measures for minimising potential HSE effects e.g. through the mobilisation of support, evacuation procedures
- Communications to: command and control personnel, emergency services, employees and contractors who may be affected, others likely to be impacted, e.g. local communities
- Requirements for training, emergency drills and assessment

There shall be a process for addressing the management of crisis in the company. A crisis in this context is a relatively infrequent event that covers any significant disruption to the normal business routine and requires an immediate response from senior management.

Emergency Plans shall be periodically tested where practicable.



## 6. Implementation and Monitoring

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This section addresses how activities are to be performed and monitored, and how corrective action is to be taken when necessary.

### 6.1 Procedure Requirement

HSE performance targets shall be set to ensure progression towards the long-term goals of no harm to people and no damage to the environment.

Performance indicators shall be established, monitored and results reported in a way that can be externally verified.

All HSE incidents and near misses with significant actual or potential consequences shall be thoroughly investigated and reported.

### 6.2 Performance Monitoring

Activities and tasks shall be conducted according to the procedures and work instructions of the company (Refer 5.2 Procedures and work instructions). The management of the company shall ensure that there are systems in place to verify that the tasks and activities are carried out in accordance with these procedures and work instructions.

The HSE MS shall include documented and maintained procedures to monitor the implementation of the HSE MS (proactive e.g. progress on close out of audit action items) and HSE performance (reactive statistics e.g. incidents, deviations) on a regular basis.

HSE critical activities with their performance indicators shall be specified in the HSE MS Manual. Each critical activity shall be assigned to the correct accountable party who shall monitor and regularly report the performance of their activity(s) using the indicators.

Proactive measures of performance shall be put in place to measure the implementation of the HSE MS and the evaluation of stakeholder concerns. Proactive measures such as 'unsafe act auditing' and 'site inspections', shall be in use to monitor performance and identify shortcomings.

A documented procedure for the periodic evaluation of compliance with relevant HSE legislation and regulations shall be maintained.

The company shall regularly measure, record, track and report HSE performance against targets set in the HSE Plan and in maintaining control (Refer 4.2.3 Performance Criteria for Maintaining Controls).

Where monitoring equipment is required for performance measurement and monitoring, the company shall establish and maintain procedures and retain records for the calibration and maintenance of such equipment.

Procedures shall be established for data handling and interpretation (including the calibration of equipment).

The progress of individuals in undertaking their HSE Critical Activities and also in meeting planned HSE targets shall be monitored through the staff appraisal system.

The company shall establish and maintain procedures for the identification, maintenance and disposition of HSE records. These should include:

- Reports of audits and reviews
- Audit tracking data
- Register of or a means of identifying and accessing legislation applicable to the company activities
- Legally required documents
- Situations of non-compliance with HSE policy, and of improvement actions
- Any incidents and follow-up actions
- Any complaints and follow-up actions
- Appropriate supplier and contractor information
- Inspection and maintenance reports of HSE critical equipment i.e. equipment providing a control and recovery function.
- Product identification and composition data
- Data obtained from monitoring as input to performance records
- Results of emergency drills and exercises
- Training records which include HSE competency requirements which include HSE

HSE records shall be legible, identifiable; traceable to the activities involved with retention times defined. They shall be stored and maintained to prevent loss and unintended use.

Records supporting the performance data provided to the Africa Oil Corporation on an annual basis shall be kept in an auditable form.

Records shall be maintained, as appropriate to the system and to the organisation, to demonstrate conformance to the HSE Management System, Group requirements and international standards and are used in HSE improvement planning.

### **6.3 Non Compliance & Corrective Action**

The company shall maintain procedures for defining responsibility and authority for:

- the handling and investigating of non conformances with legislation, regulations, HSE MS policies, procedures and standards
- identify root causes and taking action to mitigate any consequences arising from such non conformances
- the initiation and completion of corrective and preventative actions
- confirmation of the effectiveness of corrective and preventative action taken

Any corrective or preventative action taken to eliminate the causes of actual and potential non-conformances shall be appropriate to the magnitude of problems and commensurate with the HSE risks encountered.

Africa Oil Corporation shall implement and record any changes in the documented procedures resulting from corrective and preventative action.

To prevent non-compliance with standards and procedures a documented system for variance/change control shall be in place. Employees shall be aware of the system. (Refer 5.3 Management of Change).

### **6.4 Incident Reporting & Follow Up**

Africa Oil Corporation maintains procedures for the reporting and investigation of hazardous situations, near misses and incidents, which are compliant with its policies, procedures and international standards.

Incidents shall be investigated in a timely manner, with accountabilities assigned, and progress on recommended actions monitored until close out.

The company shall foster a culture of openness in reporting all incidents and near misses.

Employees shall be aware of the near miss and incident reporting procedures and participate in incident investigations.

Any corrective or preventative action taken to eliminate the causes of potential incidents shall be appropriate to the magnitude of problems and commensurate with the HSE risks encountered.

Training shall be provided in incident investigation to appropriate staff throughout the company.

The company shall implement and record any changes in the documented procedures resulting from corrective and preventative action. Lessons learnt from accidents and incidents shall be disseminated to relevant personnel and contractors.

## 7. Audit

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### 7.1 HSE MS Procedure Requirement

An audit programme shall be in place to review and verify effectiveness of the management system. It shall include audits by auditors independent of the process or facility audited.

#### 7.1.1 Audit Plan

The company shall establish and maintain an audit programme and procedure for HSE audits to be carried out in accordance with Africa Oil Corporation and international standards and regulatory requirements.

A one year audit plan shall be established including HSE audits of all facilities and operations on a fixed time scale appropriate to the facility and the risks associated with the activity or the operation.

Audit programmes shall include:

- HSE MS audits
- ISO 14001 audits (where appropriate)
- independent audits (that is, audits led by auditors approved by the EP Business HSE Advisor on behalf of the Company)
- specific activity audits (facilities, start up, drilling, seismic, occupational health).

A detailed annual plan for audits shall be in place that shall cover the whole HSE MS including operations and projects that have been contracted out.

Only personnel, who have received adequate training, shall lead audits. (Refer 7.1.2 Auditor Competencies).

The company shall maintain an effective control process to ensure that audit findings are recorded, prioritised, corrective actions identified, action parties are assigned and targeted completion dates are identified and findings tracked to final close-out. Best practices and key lessons learned should be shared with all locations/assets as appropriate.

A periodic review by management of audit findings/trends and follow up action plans shall take place (Refer: 8. Review).

#### 7.1.2 Auditor Competency

Audit procedures shall specify the requirements of audit teams in terms of competency, experience in subject area of the audit and impartiality.

An audit focal point or department responsible for the audit process shall coordinate the appointment of competent HSE auditors.

A competence assurance system shall be in operation to define auditor competence and ensure that relevant HSE auditor training is provided.

A number of staff from different areas of the company shall be competent to carry out HSE audits.

### **7.1.3 Contractor Audits**

Contractors shall provide senior personnel to participate in company led integrated HSE audits of the operations contracted to them.

Contractors shall have an HSE Audit process and schedule for audits, which includes audits carried out by independent auditors. Records of results of audits, findings and corrective actions are retained.

## **8. Review**

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Management shall regularly review the suitability and effectiveness of the system.

### **8.1 Review**

A formal process shall be in place for top/senior management to review the effectiveness and suitability of the MS in managing HSE risks and ensuring continuous improvement in HSE performance.

The Review shall address but not be limited to:

- the findings of previous reviews;
- the need to change HSE policies and strategic objectives;
- the impact of significant organisational, location or activity changes;
- the HSE concerns of employees, contractors and external stakeholders;
- the provision of adequate resources and competent personnel to achieve HSE targets objectives and strategies;
- audit findings;
- Self Appraisal Assessment (HSE-MS);
- verification of closure of corrective actions resulting from HSE reviews, audits, inspections and incident investigations and
- review of legal compliance.

Management Reviews of the MS shall take place on an annual basis.

Performance against annual HSE Plans and Department HSE Plans shall be reviewed regularly.

Results of Management reviews and identified remedial actions shall be documented and monitored until conclusion.