

**NATIONAL OCCUPATIONAL STANDARDS**

**HEALTH, SAFETY & ENVIRONMENTAL  
MANAGEMENT IN THE EXTRACTIVE & MINERALS  
PROCESSING INDUSTRIES**

**LEVEL 5**

## **INTRODUCTION**

This document contains the National Occupational Standards for Health, Safety & Environmental Management in the Extractive & Minerals Processing Industries at Level 5.

These National Occupational Standards have been produced at the request of industry. They are a minor rewording of the National Occupational Standards – Health, Safety & Environmental Management in Quarries to permit the application and access to these standards by staff with supervisory and managerial responsibility within the industrial sector who are not currently operating in a quarry but are involved in other sector operational sites that is: processing plants; mines; transfer and storage sites (wharves and railheads); recycling plants. [Please refer to Glossary in Appendix A].

The recommended qualification structure for the N/SVQ at Level 5 based on these standards is for all 10 units to be mandatory units in the attainment of a full N/SVQ.

**HEALTH, SAFETY & ENVIRONMENTAL MANAGEMENT IN THE EXTRACTIVE  
& MINERALS PROCESSING INDUSTRIES  
LEVEL 5**

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# **EPIC**

## **Assessment Strategy for: Health, Safety & Environmental Management in the Extractive & Minerals Processing Industries Level 5**

**Endorsed Edition of 2004,  
with amended Annex 8 approved October 2004.**

# An Assessment Strategy to cover the EPIC Group of NVQ and SVQ Awards

## Assessment Strategy for the Extractives and Mineral Processing Sector

### A General Requirements

- 1 The Assessment Strategy for all EPIC units and qualifications is detailed below. It applies throughout the standards and should be used as the basis for all individual assessments.
- 2 The requirements have been brought together in this single document in order to avoid repetition and they represent a key part of the assessment process. They are supplemented by award-specific Assessment Guidance which identify appropriate forms of evidence for the particular competence being assessed.
- 3 In the development and implementation of all EPIC standards and awards, reference should be made back to this strategy when specifying the assessment requirements for each element of competence. The Internal and External Verifier will seek evidence that they have been addressed by candidates and Assessors at all times.

### 4.0 Requirements

#### 4.1. Assessment must take place

- within the workplace (or in specialist centres which replicate the workplace in terms of equipment and environment)
- during normal working situations.
- using relevant industrial or commercial standards and procedures
- in accordance with the Assessment Plan jointly prepared by and agreed between the Candidate and their Assessor

4.2. At levels 2 and 3 observation of normal working activity should be the primary assessment method used. At higher levels, review and questioning of documentation held in the candidate's file that is relevant to work activities and decision-making will also play a significant part in assessment.

4.3. Observation should be supported by documentary evidence of having met specific components of the standard. This should be detailed in the Assessor's reports of observation. At higher levels, where more of the evidence will be in documentary form, it is particularly important that the material is clearly presented and cross-referenced to the National Occupational Standards.

4.4. Simulation generally is not acceptable, but may be allowed as an alternative to direct observation in appropriate situations e.g. where real task performance in the normal working environment is clearly not possible. This includes situations where generation of performance evidence would only be possible during emergencies where risks to people, the environment and the facility were present.

- 4.5. In addition to inferring knowledge from performance, knowledge will be assessed via questioning by the Assessor. This illustrates the importance of the level of the Assessor's occupational competence. Whilst not precluding the use of pre-set questions, the Assessor will use planned 'free-form' questioning on all aspects of competence referred to in the Standards but not adequately demonstrated by other forms of evidence.
- 4.6. Assessment of knowledge at higher levels will need to be sufficiently rigorous to reveal the candidate's understanding of the theories and principles that inform key actions and decision making.
- 4.7. Evidence should be produced over a period of time sufficient to demonstrate consistency of competent performance and application of knowledge for each element. A minimum period of time is specified in the Specific Guidance for each award. However, where the evidence for any Unit is more than two years old, the Assessor must review the evidence to ensure it remains valid in terms of current practice.
- 4.8. Evidence should be drawn from separate assessments taken over a period of time in order to demonstrate all components of the standards. The time period between assessments should fit the complexity, variability and duration of the activity and the frequency of normally occurring opportunities for assessment. Assessment of simple, routine and regularly occurring tasks can be carried out over a much shorter timescale than those in which there are significant variables, such as weather conditions or technical complexity or where opportunities to demonstrate competence are relatively infrequent.
- 4.9. Wherever possible, evidence for assessment should be drawn from work activities in which the candidate has been continuously involved throughout the process i.e. preparing for and setting up the task, carrying out the task, completing the task and accounting for / recording actions taken.
- 4.10. While bits and pieces of evidence can usefully be drawn from different contexts to complement the candidate's file, to demonstrate breadth in competence and to fill gaps, ill-assorted material should not constitute the main part of the evidence presented for assessment
- 4.11. A single assessment event and the accompanying evidence can be used to demonstrate more than one competence and as such may apply to more than one element of the standards. This 'integrated (or holistic) assessment' approach is strongly recommended by EPIC NTO.
- 4.12. Individual pieces of evidence should be substantially different from each other and should be representative of the range of activities and conditions encountered within the job role of the candidate.
- 4.13. Evidence presented should be accompanied, where appropriate, by a clear statement of the specific context in which it has been generated. The evidence should be cross-referenced to other forms of evidence including observation.
- 4.14. Overall, the evidence presented should reflect realistic work activities which seek to satisfy all of the standards.

## B Specific Requirements

- 5 Each component of the Evidence Requirements has implications for designing an effective assessment procedure to ensure valid and reliable measurement of the standards. These are clarified below.

### 5.1. Location and context of assessment

There must be evidence of candidates' demonstrating competence in the real (or, at least, realistic) work environment. For most candidates this means his/her normal place of work. Short work placements or non-realistic work environments, which do not replicate the pressures and requirements of normal commercial or industrial activities, will not be acceptable. The bulk of the candidate's evidence should be drawn from their normal working activity and not consist of artificially contrived opportunities for one-off demonstration of competence. Similarly equipment must be that used in current commercial and industrial contexts. Procedures and standards used should be those that are nationally or internationally recognised or devised by specific companies as standard operating procedures. In the assessment of knowledge, particularly where this relates to legislation, regulations and procedures, it is essential that currently applicable documentation be used as a basis for assessment

### 5.2. Acceptable forms of evidence

- 5.2.1 Candidates will need to present evidence that will include the following components:
- 5.2.2 Proof that qualified Assessors or third parties such as line managers have **observed** the candidate correctly performing the competences required in the standards. The specified number of observations **must<sup>1</sup>** be made and details of the nature of the work being performed during the observation must also be available for external verification. Third parties involved in providing 'witness testimony' must be competent to make judgements about the activity (ies) for which they are providing the testimony. They act as secondary and corroborating sources of evidence and must be carefully selected and approved. The Assessor will make all decisions on the candidate's competence. See 7 below.
- 5.2.3 For the more experienced candidate, the Accreditation of Prior Learning (APL) method of proving competence should also be considered.
- 5.2.4 Observations must be formally recorded, in hard copy or electronic form, and fully describe what has been observed and how the activity/ task has met the standard. In addition, documentation can be used to support the successful performance of an activity when not directly observed by the Assessor where this is permitted. Normally this evidence would consist of specifications or standard operating procedures, production or process records, quality assurance records and final records of end results. If the candidate proposes to use such supplementary documentation, they should list what it is

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<sup>1</sup> More observations than the minimum may be necessary where the Assessor remains uncertain about the consistency of the candidate's performance or the work context offers only limited opportunities for making a rounded judgement about the candidate's capability.

and identify where it is stored and only bring it forward if the Assessor agrees it will be helpful in the assessment process.

- 5.2.5 The supporting documentation<sup>2</sup> must be validated as relating to the candidate's normal work and must be clearly cross-referenced to the standards and, where appropriate, to the specific requirements for each award. This is usually confirmed by line manager or QA signatures on work documents. In particular cases, specified in the Assessment Guidance for an award, additional evidence such as customer endorsements or reports of results may be required.
- 5.2.6 To avoid the unnecessary assembly of supporting documentation, the Assessment Plan should seek to define:
- what evidence is to be collected
  - what will be acceptable sources of evidence
  - what will constitute sufficient evidence for assessment purposes

### **5.3. Candidates with special assessment requirements**

- 5.3.1 Where candidates have poor reading and writing skills or where they have a physical and/or a sensory impairment and where their impediment does not constrain their ability to operate competently and safely in the workplace, the Assessor should adapt the method(s) of assessment to ensure that the candidate is not put at a disadvantage because of the assessment process (e.g. the Assessor might use oral questioning in place of written tests).
- 5.3.2 The language of assessment will normally be English but can be bilingual or in any other language providing that:
- There is a translation<sup>3</sup> of the relevant standards, approved by the awarding body and available to the candidate
  - The Assessment Centre, Internal Verifier and Assessor(s) are competent to carry out such assessments and to give feedback to candidates in their own language.
  - The Assessment and Verification reports are in English to facilitate External Assessment

### **5.4. Simulation**

- 5.4.1 Simulation, where permitted, can be used to demonstrate particular competences that would be difficult or dangerous to demonstrate directly (e.g. in dealing with emergencies). They should only be used where direct evidence of candidate performance cannot be obtained.
- 5.4.2 The External Verifier must approve in advance the use of simulation and will require clear reasons for its planned use. Details of planned assessment using simulation should be provided to the External Verifier and should include the following details:
- Which competence (and standards) the simulation is designed to assess

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<sup>2</sup> At higher levels, documentation in the form of a 'portfolio' will be a very important source of evidence. Not only should it contain material that provides an audit trail of decision-making where the candidate has been involved in critical incidents, but also should reveal the candidate's systematic approach to the management and control of health, safety and environmental matters.

<sup>3</sup> It is not the responsibility of the Awarding Body to provide translations from English unless specifically commissioned to do so by the responsible Government Departments and/or National Accreditation Authorities.

- The kind of equipment, facilities and physical environment proposed for the simulation of performance
- How the simulated activity will relate to the candidate's normal work context
- How the simulation is to be set up and conducted, preferably supported by physical evidence such as photographs or inspection of a test rig

5.4.3 If approval is given, all specific Awarding Body guidance and requirements for simulation should be observed. Also, Assessors, Internal Verifiers and External Verifiers should monitor the proportion of evidence generated via simulations to ensure that it will not be the primary source of a candidate's claim to competence.

5.4.4 Simulation is therefore reserved for aspects of competence illustrated by the following contexts:

- Where demonstration, for example, of emergency shutdown and related safety procedures would be; **dangerous and/or disruptive** to plant/environment/individuals; **too costly** such as total plant shutdown or dealing with spillage of dangerous substances; where **issues of confidentiality/security** restrict access to real work opportunities
- Demonstrating specific aspects of contingencies which rarely or never occur due to effective QA systems
- The capacity to integrate disparate knowledge to cope with unforeseen events and to solve problems

## 5.5. Knowledge and Understanding

5.5.1 Knowledge and Understanding will be assessed via (pre-set and/or free form) questions and by evidence of performance, which cover three primary types of knowledge:

- Knowledge of facts and procedures
- Understanding of principles and concepts underpinning procedures
- How to apply principles and procedures in specific contexts

5.5.2 All questions must be asked by the Assessor at appropriate moments throughout the assessment process, preferably linked to observed activity and/or review of documentary evidence. The questions asked of, and answers provided by, the candidate may be recorded and used as the basis for a useful question/answer bank. The order in which the candidate provides the response is not material. Where the candidate fails to provide a complete answer, the Assessor should carry out further questioning to check whether or not the candidate has the necessary knowledge and understanding. This can take the form of further open questioning or providing a guided opportunity to acquire the missing knowledge and re-present for assessment.

5.5.3 There must be some form of verification that the questions have been asked either by detailed cross-referencing to other forms of evidence, by a sample selection of candidate's responses provided in writing or by an Assessor report on when and how the questions were asked. The precise form of verification must be agreed between the Assessor, the Internal Verifier and the External Verifier applying specific Awarding Body procedures.

5.5.4 The second form of knowledge and understanding questioning encouraged is the free-form questioning of the candidate during other forms of assessment e.g. during observation or when reviewing

procedures and related documentation. Assessors should ask “What if?” questions that test the candidate's depth of understanding. For example: how they would deal with anomalies and special requirements; how they would go about tackling rare occurrences; cope with new situations or solve problems. Sometimes this requires the description by the Assessor of different 'scenarios' that help to reveal whether the candidate has an adequate grasp of what action is required in situations that only occur infrequently. Using 'scenario testing' should not be confused with 'simulation'. The former is based on evidence that the candidate has already demonstrated the essentials of competence in the workplace and tests versatility and depth; the latter is used as a substitute for evidence of work based competence.

- 5.5.5 At higher levels, it may be necessary to establish and confirm candidates' understanding of underlying theory and principle through more formal measures such as professional and/or guided discussions, written tests, case studies, work based projects. Where this is the case, the selected method/s should be designed to realistically reflect the range of circumstances and contexts in which candidates are likely to have to demonstrate their understanding. Scenario testing is used quite frequently at higher levels

## 5.6. The sufficiency and balance of evidence required

- 5.6.1 Candidates will be expected to bring together evidence over a period of time which, collectively, meets all the requirements of the Unit, the individual components of each Element and adequately reflects the range of work situations and contexts. The broad requirements of section A of this document must also be met and the evidence must follow the detailed assessment guidance for the award as well as meeting the requirements set out and agreed in the Assessment Plan by the Candidate and their Assessor.

- 5.6.2 The following features of sufficiency should be addressed:

- **Sustained performance over time** is required to show competence and consistency in performance across the full range of normal working conditions, meeting all the requirements and providing an adequate number of examples of varied work activity. What is being looked for is the capacity to consistently perform what is required of the candidate in the work environment over the full range of activities, conditions and contexts.
- Much will depend upon the nature of the activity in question, as some complex activities may take a considerable period of time and involve a series of mutually independent stages. Some simple sampling or testing activities are frequent and repetitive and may be demonstrated over a relatively short period of time.
- Assessors should always attempt to achieve an appropriate **balance of types of evidence**.
- As a safety critical industry, no assessments are valid unless the health, safety and environmental requirements set out in the National Occupational Standards have been fully met (even where health and safety issues are not the primary focus of the assessment event).
- Similarly, Assessors, Internal and External Verifiers must not conduct work-based assessments in contexts, and under conditions where they are dissatisfied with the health and safety arrangements in place.

- In such situations, the Assessor must give appropriate feedback to the candidate and, as necessary, to the appropriate employer's representative.

## 5.7. Expertise of Assessor and Verifiers

### 5.7.1 Assessors and Internal Verifiers must:

- be registered by an approved centre
- be competent to make qualitative judgements about the units they are assessing/verifying. This may be illustrated by:
  - the Assessor/Internal Verifier having achieved the award themselves and/or
  - having substantial current or recent (within the past 5 years) experience at a fully skilled level in the job function(s) being assessed (including working with current legislation, regulations, procedures and technology), or
  - being in a day to day line management, technical or quality assurance role that involves making detailed appraisals and/or assessments of those carrying out work covered by the units they are assessing/verifying (and will have substantial experience in this post) (see Award Specific Guidance).
- be in possession of the appropriate Assessor award(s)<sup>4</sup>.
- carry out their duties in accordance with the National Occupational Standards for Assessment and Verification and current guidance on best assessment practice issued by the regulatory authorities.

### 5.7.2 External Verifiers must:

- be registered with an approved Awarding Body
- be sufficiently familiar with and/or experienced in the quarrying, mining, or mineral processing industries to be able to verify that candidate evidence has met the National Occupational Standards.
- be in possession of the appropriate External Verifier Award<sup>4</sup>.
- carry out their duties in accordance with the National Occupational Standards for Assessment and Verification and current guidance on best verification practice issued by the regulatory authorities.

### 5.7.3 Also, the Assessor/Verifier will have a working knowledge of awards and a full understanding of that part of the award for which they have responsibility<sup>5</sup>.

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<sup>4</sup> These are currently referred to as the D-units. As a minimum requirement the Assessor must be in possession of units D32 and D33 (or those designated units which replace these). Where a new centre wishes to deliver an award, or an existing centre wishes to deliver an award from a different functional area, then the centre may be approved if it can provide evidence that the potential Assessors satisfy the experience criteria (above) and are registered and actively undertaking the D32 and D33 units. Internal Verifiers must be in possession of D34 (or the designated unit which replaces this). External Verifiers must be in possession of D35 (or the designated unit which replaces it).

<sup>5</sup> **The Awarding Body will confirm this through examination of relevant CVs supported by relevant references.**

5.7.4 The appointment of Assessors and Internal Verifiers at levels 4 and 5 may require the prior approval of the Awarding Body Executive on the recommendation of the External Verifier.

5.7.5 Third party 'Witnesses' referred to in section 5.2 must also be competent to make judgements about the activity (ies) for which they are providing the testimony. **As the assessment *decision* lies with the Assessor, it is their responsibility to verify this and, where challenged, to justify their acceptance of third party 'witness testimony' to the Internal Verifier.**

## 5.8. External Quality Control

5.8.1 The external quality control of assessment is to be provided, in this highly regulated and safety critical sector, by the use of External Verifiers employing 'Enhanced External Verification' and 'Enhanced Internal Verification'.

### 5.8.2 **Enhanced External Verification Strategy**

This will involve the 'traditional' External Verification role supplemented by verifying a representative sample of candidates work from each Assessor. However, it will cover **all** Assessors in each Centre over an agreed period of time, and for **each** Assessor will always include:

- The Key Unit within the award (specified in the award specific guidance)
- Plus all evidence from simulations
- Plus a minimum of one other unit (agreed with the External Verifier)
- Plus the evidence of internal verification

### 5.8.3 **Enhanced Internal Verification Strategy**

The Internal Verifier must provide evidence of having verified:

- The Key Unit(s) for 100% of candidates
- Every simulation
- Additional Unit(s) - as specified in the Supplementary Assessment Guidance for each award
- For each Assessor a sample of **all** units they are qualified to assess
- Verification of **all** assessment methods and **all** assessment stages (e.g. induction; assessment planning; feedback to candidate)

5.8.4 The Key Unit in each award is identified by the sector, through EPIC (as the industry Standard Setting Body) and is identified in the Award Specific Guidance.

5.8.5 Awarding Bodies (ABs) will continue to ensure that external quality control for EPIC awards will be through the use of External Verifiers thus:

- External Verifiers will visit the centre as soon as possible after the centre has become approved to deliver the award. This initial External Verification will be shortly after the Centre Approval, candidate registrations and first assessments. This will normally be within 3 months and must be before the completion of any unit for any candidate. At this initial meeting, the External Verifier will meet a selection of Centre Staff to confirm understanding of the quality standards expected by the awarding body in terms of

evidence requirements, assessments, documentation and support systems.

- There will be at least two External Verification visits to each centre each year
- Centres will have full access to the External Verifier for guidance on the assessment process and related matters.
- External Verifier visits will review candidate evidence, the judgements made by workplace Assessors and Internal Verifiers, and the support systems required to deliver the awards. Only after the External Verifier is satisfied that the centre is meeting the quality standards will the first certificates be issued to candidates.
- If centres are not able to meet the requirements then the External Verifier will state in writing what improvements are to be made and the date by which they are to be made. The External Verifier will then return to the centre on an agreed date to confirm that the centre has remedied the non-compliance. If the centre is not satisfied with the External Verifier's judgement then it can appeal to the awarding body according to the Awarding Body's published Appeals Procedure.
- Centres will be required to conduct internal networked events attended by Assessors and verifiers. The purpose of these events will be to compare evidence sources and judgements made to ensure that assessments comply with best current practice. The frequency of these events will be determined by the size, scope and degree of risk of the centre. There will be a minimum of one event per year and formal records will be maintained of attendees, agenda, communications with the Awarding Body and action points arising.
- In order to ensure that all centres are meeting the quality standards, the External Verifier will be responsible for comparing the work of different centres. The Awarding Body may facilitate this by convening meetings or events attended by staff from different centres, who will be expected to attend, to ensure that consistency is being maintained between centres. These meetings may take place at intervals determined by the awarding body who will also be responsible for the agenda.
- The Approved Centre must retain all documentation and evidence related to all submissions for certification which have occurred since the last satisfactory External Verification visit.

**Annex 8 Award Specific Assessment Guidance linked to Assessment Strategy to cover the EPIC Group of Awards Health, Safety & Environmental Management in the Extractive and Minerals Processing Industries<sup>6</sup> SVQ/NVQ at Level 5**

**General Please note the following:**

- This award will be implemented in accordance with the EPIC Assessment Strategy
- The following information should be read alongside the EPIC Assessment Strategy
- The following information is intended to complement the EPIC Assessment Strategy
- Evidence of performance will normally be drawn from activities carried out regularly over a period of no less than **26 weeks**

**1 External Quality Control**

The Enhanced Internal and External Verification method of achieving External Quality Control will be adopted. It has been agreed that the unit requiring 100% Internal Verification will be:

**Unit HSE 1 - Promote a health, safety and environmental culture in extractive industries sites**  
**External Verification**

It has been agreed that the enhanced External Verification Quality Control to be adopted will be as specified in the General Assessment Strategy i.e. section 5.8.2.

**2 Workplace Assessment**

It has been agreed that all of the units are suitable for Workplace Assessment. Although performance from Assessor observation is expected, the primary source of performance evidence for this award could be products of work/works documentation.

**3 Supporting Evidence**

This evidence *may* be supported by additional evidence such as:

- Candidates appointments and certificates
- Witness Testimony (see Assessment Strategy)
- Health, safety and environmental management policies & plans for implementation
- Training policies and plans & performance appraisals
- Training needs reviews
- Evaluation reports on training provision and external providers
- Hazard and environmental risk assessments
- Analysis of site safety and environmental management performance
- Safety and environmental audits
- Reports advising on improvements to safety & environmental management:
- Statutory reports relating to emissions to air, releases to water and contamination of ground
- Incident & accident investigation reports

**4 Simulation**

**Simulation is only permitted for Performance Criteria 9.1.h.**

In the event of a candidate being unable to generate workplace evidence for this particular Standard of Performance, then the use of this method of assessment must be agreed in advance with the External Verifier (See Assessment Strategy)

**5 Knowledge Assessment**

- Responses to pre-set questions (oral/written) and/or
- Responses to Assessor devised questions. (Assessor devised questions and responses to be recorded)

**6 Assessor/Verifier Expertise**

See EPIC Assessment Strategy. Assessors must have sufficient competence in health, safety and environmental management, at or above the level they propose to assess, and an understanding of its applications in the extractives sector. [Under normal circumstances someone with less than 3 years experience in a similar, or higher level job, in the extractive and mineral processing sector, would not normally be considered to have sufficient occupational competence].

Internal Verifiers must have sufficient technical understanding of health, safety and environmental management, its application and scope covered by the qualification.

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<sup>6</sup> Sites for the purposes of these National Occupational Standards cover all sites involved in the extraction, processing and storage of rocks and minerals and mineral products.  
[See Glossary of Terms – Appendix A]

## **Unit 1        Promote a health, safety and environmental culture in extractive industries sites**

### **Unit Summary**

#### **Overview**

This unit is about encouraging a culture of efficiency within the extractive and mineral processing site/s in relation to health, safety and the environment. It is also concerned with promoting the achievements of the site and organisation to all people who work at the site, encouraging them to understand their role and responsibilities and how they can bring about improvements to health, safety and environmental performance. To assist in achieving these ends appropriate training must be identified, implemented and then evaluated.

This unit is for you if you are:

- A manager with responsibility for all operational aspects of a site or sites. It is likely that you will be responsible for subordinate managers
- A manager with responsibility for a section or sections of an operational site working under the direction of a site manager. It is likely that you will be responsible for subordinate supervisors

This unit contains two elements

*1.1        Promote health, safety and environmental issues continuously*

*1.2        Identify, implement and review training activities for health, safety and environmental performance*

#### **Performance requirement**

*In performing effectively in this unit you will need to demonstrate that you do the following:*

*In order to promote health, safety and environmental issues continuously you need to communicate the benefits of health, safety and environmental efficiency to the people on site. You need to enlist their support and that of others to develop a health, safety and environmentally efficient culture. You also need to encourage everyone on site to play an active role in the drive for improvements and facilitate a two-way exchange of views and ideas. To do this you will need to utilise a number of different presentational methods to promote the benefits of improved health, safety and environmental performance. Your presentations will need to be both formal and informal*

*In order to identify, implement and review training activities for health, safety and environmental performance you need to be able to implement and evaluate not only those training requirements that are required by the organisation but those which are site specific and those required by individuals working at the site. This will include the needs of groups of people other than direct employees, particularly contractors. You are operating in a highly regulated safety and environmentally specific industry and as such you will need to review the effectiveness of the training at individual level and ensure that complete and accurate records are kept*

**Knowledge and understanding**

*To perform effectively in this unit you need to have a knowledge and understanding in the areas of*

- communication, involvement and motivation
- health, safety and environmental efficiency in terms of the site and also industry best practise
- information handling and record management
- health, safety and environmental training requirements
- health, safety and environmental legislation
- identification of training needs

## **Unit 1        Promote a health, safety and environmental culture in extractive industries sites**

### **Element 1.1        Promote health, safety and environmental issues continuously**

#### **The National Standard**

This section provides criteria to assess whether you promote health, safety and environmental issues continuously to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you identify and present the benefits of continuous improvements to health, safety and environmental performance in the **workplace**, clearly and accurately
- b) you consistently take opportunities to promote awareness and achievements in health, safety and environmental matters using effective **promotional methods**
- c) the information you provide on health, safety and environmental achievements is accurate and up to date
- d) you encourage individuals in the **workplace** to take an active role in the drive for increased health, safety and environmental efficiency
- e) you encourage individuals to offer suggestions, ideas and views on improvements to health, safety and environmental performance
- f) you enable individuals in the workplace to understand their role and responsibilities in health, safety and environmental issues and help them to make an active contribution to performance
- g) you evaluate the effectiveness of the communication process and use the results to improve future practice
- h) you report progress on the level of health, safety and environmental awareness regularly with recommendations for further improvements
- i) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

*Benefits of improved health, safety and environmental performance*

- 1. the benefits to individuals and the organisation from improved health, safety and environmental performance
- 2. how to identify the costs of improved health, safety and environmental performance
- 3. the consequences of failing to improve health, safety and environmental performance
- 4. the benefits of participation of persons at work

*Communication*

- 5. the principles, process and practice of effective communication and how to apply them in the workplace
- 6. how to identify and use effective opportunities to promote awareness, understanding of, and enthusiasm for health, safety and environmental issues
- 7. sources of supporting materials

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8. how best to publicise achievements
9. the range of available presentational techniques and how to use them effectively
10. how to encourage and analyse feedback for patterns and trends and how to respond positively
11. reasons for keeping others updated on company and workplace performance
12. Awareness of the skills required for successful public and community relations

*Organisational context*

13. the organisation's policies and procedures with regard to publicising health, safety and environmental matters
14. the organisation's achievements in health, safety and environmental management and how these came about
15. organisational and statutory requirements in respect of record keeping

*Health, safety and environmental management*

16. examples of best practice and best available techniques from other organisations
17. current and proposed legislation applicable to the workplace
18. organisation and workplace health, safety and environmental performance and identified improvement needs
19. details of operational activities and associated hazards and risks

## **Unit 1        Promote a health, safety and environmental culture in extract industries sites**

### **Element 1.2        Identify, implement and review training activities for health, safety and environmental performance**

#### **The National Standard**

This section provides criteria to assess whether you identify, implement and review training activities for health, safety and environmental performance to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) **training** is identified that satisfies **workplace** needs and organisational objectives
- b) **training** meets the occupational needs of **individuals**
- c) effective **training** is implemented and monitored
- d) **training** is reviewed and evaluated to measure effectiveness
- e) clear individual **training records** are kept which conform to relevant statutory and company requirements
- f) advice is sought from specialist trainers when appropriate
- g) you keep up to date with recent developments in technology and legislation

#### **Knowledge requirements**

*You need to know and understand*

1. use of job descriptions to help ensure that the workforce understand their responsibilities and authority in relation to health, safety and environmental requirements, and how these relate to those of others
2. principles of effective communication
3. how to identify skills and knowledge individuals require
4. how to encourage feedback and assess the effectiveness of training
5. organisational and statutory requirements in respect of record keeping
6. identification of training needs

*Training requirements in relation to:*

7. health and safety induction
8. environmental induction
9. refresher/retraining
10. use of fire extinguishers
11. first aid
12. safe methods of manual handling
13. methods of dealing with incidents and emergencies
14. use of personal protective equipment
15. use of safe systems of work
16. office and workshop safety
17. safe use of mobile plant
18. safe use of fixed plant
19. permit to work systems
20. use of rescue equipment

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21. handling of waste to include recycling
22. reporting of problems in connection with emissions to air, releases to water and contamination to ground
23. material and product handling to include
  - handling of drums
  - control and reporting of spills
  - loading and unloading of transport
24. legislation applicable to the site
25. hazard and aspect evaluation
26. risk assessment
27. *where applicable* training requirements in relation to use of explosives to include:
  - shotfirers
  - explosives supervisor
  - blasting specifications

## **Unit 2        Implement effective health and safety systems in extractive industries sites**

### **Unit Summary**

#### **Overview**

This unit is about implementing effective health and safety systems at the extractive industry operational site/s. This includes implementing centralised company systems and policy as required and also establishing health and safety systems that are specific to the site. It involves improving health and safety by making sure these systems operate effectively throughout the site. It also covers making recommendations for improvements to existing health and safety systems.

This unit is for you if you are:

- A manager with responsibility for all operational aspects of a site or sites. It is likely that you will be responsible for subordinate managers

This unit contains two elements

2.1        *Establish and maintain health and safety systems*

2.2        *Monitor and improve the effectiveness of health and safety systems*

#### **Performance requirement**

*In performing effectively in this unit you will need to demonstrate that you do the following:*

In order to *establish and maintain health and safety systems* you need to analyse the processes at the site and decide upon appropriate systems that will reduce risks or improve the control of hazards. You need to discuss and develop plans that will meet your objectives for implementation in terms of detail and timescale and which, are consistent with organisational and legislative requirements and represent good practice. To do this you will need to involve interested parties in the process, take account of any obstacles and recognise the need for additional expertise where this is required. You will on occasions need to secure funds and resources. After implementation you will need to audit the system, taking corrective action, if necessary to ensure achievement of objectives. Systems are only effective if the people using them understand them and are committed to their introduction and maintenance, as such it is important that this is confirmed at each stage of the process. You will need to be able to accomplish this over a wide range of health and safety systems.

In order to *monitor and improve the effectiveness of health and safety systems* you will need to critically examine existing systems for potential improvements which take into account patterns and trends and to some extent are dependent on feedback from others at the site. Where known breaches of health and safety systems have occurred you will take action to improve the deficiencies in the system. You will also take into account health and safety audits and suggestions from others as part of the monitoring process. Where changes are made to health and safety systems you will have to demonstrate that they are evaluated against previous performance and you will need to keep records of system changes.

### **Knowledge and understanding**

*To perform effectively in this unit you need to have a knowledge and understanding in the areas of*

- benefits of improved health and safety performance
- how to identify the risks and costs of improved health and safety performance
- implementing plans
- managing information
- how to develop plans to improve health and safety performance which are measurable time-tabled and systematic
- methods for monitoring and evaluating the effectiveness of implementation
- communication, involvement and motivation
- health and safety efficiency in terms of the site and also industry best practice
- analysis of information and interpretation of patterns and trends
- record keeping
- legal definitions
- operational aspects of the site with regard to health and safety
- relevant health and safety legislation

## **Unit 2        Implement effective health and safety systems in extractive industries sites**

### **Element 2.1        Establish and maintain health and safety systems**

#### **The National Standard**

This section provides criteria to assess whether you establish and maintain health and safety systems to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you give opportunities to **appropriate people** to make recommendations for the establishment of **health and safety systems** in the **workplace**
- b) you agree the scope and objectives of the proposed system with **appropriate people**
- c) your recommendations for establishing **health and safety systems** are consistent with the company health and safety policy, meet standards set by legal requirements, comply with recognised industry standards and represent good practice
- d) your recommendations clearly specify the procedures required to ensure that objectives are achieved and where possible set measurable targets
- e) you obtain and provide sufficient resources for the **health and safety systems** to be effective
- f) you agree implementation plans and timescales taking account of feedback from **appropriate people**
- g) you implement the proposed **health and safety systems** in the **workplace**
- h) you evaluate the **health and safety systems** at regular intervals and implement corrective action where required
- i) you confirm your subordinates understanding of, and commitment to the changes at appropriate intervals
- j) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

##### *Legal*

1. breach of statutory duty and lines of defence
2. difference between qualified and absolute duties.
3. meaning of vicarious and strict liability
4. responsibilities of employers, employees and others in relation to trespass
5. tort of negligence, remedies, joint and several liability, possible defences for negligence
6. relevance of individuals and bodies corporate
7. rights of enforcement officers and maximum penalties on conviction for bodies corporate, directors, managers, employees and others
8. rights of accused persons and witnesses in connection with statements to enforcing officers which may incriminate them at trials, inquests and enquiries
9. meaning of 'so far as is reasonably practicable'
10. legislation in relation to health and safety systems
11. legislation in relation to the site

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12. duty of operator with regard to the rights of the workforce

*Safe use of electricity*

13. nature and dangers of electricity, importance of earthing, first aid implications and when to involve specialist electrical engineer

14. electrical interlock systems and permit-to-work systems to cover high voltage switching

15. strategies to deal with overhead or buried cables, battery charging procedures, and testing of portable electrical equipment

*Safe use of fixed plant and integrity of structures*

16. nature and frequency of statutory inspections (pressure vessels, air receivers, hoists and lifting equipment)

17. specification, limitations and advantages of fixed and other guarding techniques

18. safety when working on buildings, safe access for work at heights, sheeting, safety equipment

19. non-destructive testing techniques

*Safe use of mobile plant*

20. need for vehicle rules, safe vehicles, safe workplace and safe practices

21. basic requirements relating to use of vehicles on public roads

22. competence assessment techniques for drivers

*Safety in Complex or hazardous processes*

23. hazards related to excavation and tipping if in use on the site

24. hazards related to blasting and use of explosives if in use on the site

25. hazards related to common physical operations in processes (e.g. feeding, crushing, grinding, screening, mixing, solid and slurry transfer, heat-treatment operations in relation to the site)

26. types of guarding and interlock systems

27. techniques for storage, transfer, handling and use of explosive, flammable, toxic, corrosive and irritant materials in relation to the site

*Fire prevention and precaution*

28. types, use, maintenance and siting of fire-fighting equipment, types of fires, effects of smoke and toxic fumes, use of extinguishers and evacuation procedures

*Miscellaneous*

29. instructions, rules and schemes

30. permit to work systems

31. principles and design of safe systems of work

32. contractors: rules of entry and conditions of contract

33. operation and application of various types of personal protective equipment for foot, body, head, eye, ear, skin, respiratory protection and the management and maintenance of personal protective equipment schemes

34. occupational health surveillance

35. principles of manual handling

36. principles of dust control

37. principles of noise control

38. safe use of compressed air

39. safe use of abrasive wheels

40. safe use of bottled gas (oxygen, acetylene, LPG)

41. first aid requirements

42. benefits of improved health and safety performance

43. how to identify hazards and risks

44. implementing plans

45. managing information

46. how to develop plans to improve health and safety performance which are measurable time-tabled and systematic

47. communication, involvement and motivation

48. health and safety efficiency in terms of the site and also industry best practice

49. organisational and statutory requirements in respect of record keeping

## **Unit 2        Implement effective health and safety systems in extractive industries sites**

### **Element 2.2        Monitor and improve the effectiveness of health and safety systems**

#### **The National Standard**

This section provides criteria to assess whether you monitor and improve the effectiveness of health and safety systems to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you assess the outcome of continuous monitoring and evaluate current **health and safety systems** in the **workplace**
- b) you correctly identify and analyse **trends and developments** and this is sufficient to take into account all critical factors
- c) you encourage **appropriate people** to report actual and potential breaches of **health and safety systems**, when they occur in the **workplace**
- d) you take effective action to rectify breaches in **health and safety systems** consistent with the company health and safety policy, standards set by legal requirements, recognised industry standards and best practice
- e) you regularly monitor the results of health and safety audits and communicate the results to **appropriate people**
- f) you provide opportunities for **appropriate people** to suggest improvements to **health and safety systems** in the **workplace**
- g) changes to **health and safety systems** are made where necessary in the **workplace** and evaluated against previous health and safety performance
- h) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

##### *Legal*

1. breach of statutory duty and lines of defence
2. difference between qualified and absolute duties.
3. meaning of vicarious and strict liability
4. responsibilities of employers, employees and others in relation to trespass
5. tort of negligence, remedies, joint and several liability, possible defences for negligence
6. relevance of individuals and bodies corporate
7. rights of enforcement officers and maximum penalties on conviction for bodies corporate, directors, managers, employees and others
8. rights of accused persons and witnesses in connection with statements to enforcing officers which may incriminate them at trials, inquests and enquiries
9. meaning of 'so far as is reasonably practicable'
10. legislation in relation to health and safety systems
11. legislation in relation to the site
12. duty of operator with regard to the rights of the workforce

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*Safe use of electricity*

13. nature and dangers of electricity, importance of earthing, first aid implications and when to involve specialist electrical engineer
14. electrical interlock systems and permit-to-work systems to cover high voltage switching
15. strategies to deal with overhead or buried cables, battery charging procedures, and testing of portable electrical equipment

*Safe use of fixed plant and integrity of structures*

16. nature and frequency of statutory inspections (pressure vessels, air receivers, hoists and lifting equipment)
17. specification, limitations and advantages of fixed and other guarding techniques
18. safety when working on buildings, safe access for work at heights, sheeting, safety equipment
19. non-destructive testing techniques

*Safe use of mobile plant*

20. need for vehicle rules, safe vehicles, safe workplace and safe practices
21. basic requirements relating to use of vehicles on public roads
22. competence assessment techniques for drivers

*Safety in Complex or hazardous processes*

23. hazards related to excavation and tipping if in use on the site
24. hazards related to blasting and use of explosives if in use on the site
25. hazards related to common physical operations in processes (e.g. feeding, crushing, grinding, screening, mixing, solid and slurry transfer, heat-treatment operations in relation to the site)
26. types of guarding and interlock systems
27. techniques for storage, transfer, handling and use of explosive, flammable, toxic, corrosive and irritant materials in relation to the site

*Fire prevention and precaution*

28. types, use, maintenance and siting of fire-fighting equipment, types of fires, effects of smoke and toxic fumes, use of extinguishers and evacuation procedures

*Miscellaneous*

29. instructions, rules and schemes
30. permit to work systems
31. principles and design of safe systems of work
32. contractors: rules of entry and conditions of contract
33. operation and application of various types of personal protective equipment for foot, body, head, eye, ear, skin, respiratory protection and the management and maintenance of personal protective equipment schemes
34. occupational health surveillance
35. principles of manual handling
36. principles of dust control
37. principles of noise control
38. safe use of compressed air
39. safe use of abrasive wheels
40. safe use of bottled gas (oxygen, acetylene, LPG)
41. first aid requirements
42. benefits of improved health and safety performance
43. how to identify hazards and risks
44. implementing plans
45. managing information
46. how to develop plans to improve health and safety performance which are measurable time-tabled and systematic
47. methods for monitoring and evaluating the effectiveness of implementation
48. communication, involvement and motivation
49. health and safety efficiency in terms of the site and also industry best practice
50. analysis of information and interpretation of patterns and trends
51. organisational and statutory requirements in respect of record keeping

## **Unit 3        Implement improvement to health and safety in extractive industries sites**

### **Unit Summary**

#### **Overview**

This unit is about implementing effective improvements to health and safety activities at the extractive industries site/s. This includes implementing centralised company initiatives but in particular is concerned with looking in detail at the health and safety requirements of the site/sites under the manager's control. This unit is not concerned with evaluation and implementation of systems for the management of health and safety but with actual improvements to the workplace which may include site security, plant and equipment, methods of working, layout, use of substances etc.

This unit is for you if you are:

- A manager with responsibility for all operational aspects of a site or sites. It is likely that you will be responsible for subordinate managers

This unit contains two elements

- 3.1        *Identify and evaluate the opportunities for improvement to health and safety activity*
- 3.2        *Implement and monitor the improvement to health and safety activity*

#### **Performance requirement**

*In performing effectively in this unit you will need to demonstrate that you do the following:*

In order to *identify and evaluate the opportunities for improvement to health and safety activity* you need to analyse the processes in the workplace and decide upon appropriate improvements that will reduce risks or improve the control of hazards. You need to discuss and develop plans that will meet your objectives for implementation in terms of detail and timescale and which, are consistent with organisational and legislative requirements and represent good practice. To do this you will need to involve interested parties in the process, take account of normal, abnormal and emergency situations and recognise the need for additional expertise where this is required. You will on occasions need to secure funds and resources and this will involve preparation of a clear case supported by sound evidence. You will need to demonstrate that you have identified and evaluated a number of improvements covering a wide range of health and safety issues.

In order to *implement and monitor the improvement to health and safety activity* you will need to ensure that you provide sufficient resources for the implementation of the improvement and allow all concerned to contribute to the process effectively. You will be prepared to make modifications to the implementation programme to resolve any problems which may arise and ensure that all concerned are committed to the improvement programme at all times. After implementation you will need to demonstrate that improvements are evaluated against previous performance and you will keep records of changes. Implications of the improvements need to be taken into account particularly in terms of how people at the site will be affected.

### **Knowledge and understanding**

*To perform effectively in this unit you need to have a knowledge and understanding in the areas of:*

- benefits of improved health and safety performance
- how to identify the risks and costs of improved health and safety performance
- implementing plans
- managing information
- how to develop plans to improve health and safety performance which are measurable, time-tabled and systematic
- methods for monitoring and evaluating the effectiveness of implementation
- communication, involvement and motivation
- health and safety efficiency in terms of the site and also industry best practice
- record keeping
- legal definitions
- operational aspects of the site with regard to health and safety
- relevant health and safety legislation

## **Unit 3        Implement improvement to health and safety in extractive industries sites**

### **Element 3.1        Identify and evaluate the opportunities for improvement to health and safety activity**

#### **The National Standard**

This section provides criteria to assess whether you identify and evaluate the opportunities for improvement to health and safety activity to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you give opportunities to **appropriate people** to make recommendations to improve health and safety in the **workplace**
- b) evaluation of recommendations takes into account all relevant **information** concerning the work activity
- c) the **improvement(s)** you identify are measurable, consistent with the company health and safety policy, meet standards set by legal requirements, comply with recognised industry standards and represent good practice
- d) your recommendations take into account the effects of normal, abnormal and emergency situations
- e) you make a clear case for the proposed **improvement** and support your case with sound evidence
- f) you agree implementation plans and timescales taking account of feedback from **appropriate people**
- g) your plans clearly identify the implications for, and the roles of all involved in the proposed **improvement**
- h) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

##### *Legal*

1. breach of statutory duty and lines of defence
2. difference between qualified and absolute duties.
3. meaning of vicarious and strict liability
4. responsibilities of employers, employees and others in relation to trespass
5. tort of negligence, remedies, joint and several liability, possible defences for negligence
6. relevance of individuals and bodies corporate
7. rights of enforcement officers and maximum penalties on conviction for bodies corporate, directors, managers, employees and others
8. rights of accused persons and witnesses in connection with statements to enforcing officers which may incriminate them at trials, inquests and enquiries
9. meaning of 'so far as is reasonably practicable'
10. legislation in relation to health and safety systems
11. legislation in relation to the site
12. duty of operator with regard to the rights of the workforce

*Safe use of electricity*

13. nature and dangers of electricity, importance of earthing, first aid implications and when to involve specialist electrical engineer
14. electrical interlock systems and permit-to-work systems to cover high voltage switching
15. strategies to deal with overhead or buried cables, battery charging procedures, and testing of portable electrical equipment

*Safe use of fixed plant and integrity of structures*

16. nature and frequency of statutory inspections (pressure vessels, air receivers, hoists and lifting equipment)
17. specification, limitations and advantages of fixed and other guarding techniques
18. safety when working on buildings, safe access for work at heights, sheeting, safety equipment
19. non-destructive testing techniques

*Safe use of mobile plant*

20. need for vehicle rules, safe vehicles, safe workplace and safe practices
21. basic requirements relating to use of vehicles on public roads
22. competence assessment techniques for drivers

*Safety in Complex or hazardous processes*

23. hazards related to excavation and tipping if in use on the site
24. hazards related to blasting and use of explosives if in use on the site
25. hazards related to common physical operations in processes (e.g. feeding, crushing, grinding, screening, mixing, solid and slurry transfer, heat-treatment operations in relation to the site)
26. types of guarding and interlock systems
27. techniques for storage, transfer, handling and use of explosive, flammable, toxic, corrosive and irritant materials in relation to the site

*Fire prevention and precaution*

28. types, use, maintenance and siting of fire-fighting equipment, types of fires, effects of smoke and toxic fumes, use of extinguishers and evacuation procedures

*Miscellaneous*

29. instructions, rules and schemes
30. permit to work systems
31. principles and design of safe systems of work
32. contractors: rules of entry and conditions of contract
33. operation and application of various types of personal protective equipment for foot, body, head, eye, ear, skin, respiratory protection and the management and maintenance of personal protective equipment schemes
34. occupational health surveillance
35. principles of manual handling
36. principles of dust control
37. principles of noise control
38. safe use of compressed air
39. safe use of abrasive wheels
40. safe use of bottled gas (oxygen, acetylene, LPG)
41. first aid requirements
42. benefits of improved health and safety performance
43. how to identify hazards and risks
44. implementing plans
45. managing information
46. how to develop plans to improve health and safety performance which are measurable time-tabled and systematic
47. communication, involvement and motivation
48. health and safety efficiency in terms of the site and also industry best practice
49. organisational and statutory requirements in respect of record keeping

## **Unit 3        Implement improvement to health and safety in extractive industries sites**

### **Element 3.2        Implement and monitor the improvement to health and safety activity**

#### **The National Standard**

This section provides criteria to assess whether you implement and monitor the improvement to health and safety activity to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) the resources and support you provide are sufficient for the **improvement(s)** to be implemented within agreed timescales
- b) **improvement(s)** to health and safety are implemented in the **workplace**
- c) the way in which you implement the **improvement(s)** enables **appropriate people** to contribute to the process effectively
- d) the modifications you make to the implementation activity are sufficient to resolve any problems arising
- e) you monitor and evaluate **improvement(s)** at appropriate times against agreed implementation plans
- f) you confirm **appropriate peoples** understanding of, and commitment to the **improvement(s)** at appropriate intervals
- g) you carry out a post-implementation audit and compare the outcome with the original recommendations
- h) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

*Legal*

1. breach of statutory duty and lines of defence
2. difference between qualified and absolute duties.
3. meaning of vicarious and strict liability
4. responsibilities of employers, employees and others in relation to trespass
5. tort of negligence, remedies, joint and several liability, possible defences for negligence
6. relevance of individuals and bodies corporate
7. rights of enforcement officers and maximum penalties on conviction for bodies corporate, directors, managers, employees and others
8. rights of accused persons and witnesses in connection with statements to enforcing officers which may incriminate them at trials, inquests and enquiries
9. meaning of 'so far as is reasonably practicable'
10. legislation in relation to health and safety systems
11. legislation in relation to the site
12. duty of operator with regard to the rights of the workforce

*Safe use of electricity*

13. nature and dangers of electricity, importance of earthing, first aid implications and when to involve specialist electrical engineer
14. electrical interlock systems and permit-to-work systems to cover high voltage switching
15. strategies to deal with overhead or buried cables, battery charging procedures, and testing of portable electrical equipment

*Safe use of fixed plant and integrity of structures*

16. nature and frequency of statutory inspections (pressure vessels, air receivers, hoists and lifting equipment)
17. specification, limitations and advantages of fixed and other guarding techniques
18. safety when working on buildings, safe access for work at heights, sheeting, safety equipment
19. non-destructive testing techniques

*Safe use of mobile plant*

20. need for vehicle rules, safe vehicles, safe workplace and safe practices
21. basic requirements relating to use of vehicles on public roads
22. competence assessment techniques for drivers

*Safety in Complex or hazardous processes*

23. hazards related to excavation and tipping if in use on the site
24. hazards related to blasting and use of explosives if in use on the site
25. hazards related to common physical operations in processes (e.g. feeding, crushing, grinding, screening, mixing, solid and slurry transfer, heat-treatment operations in relation to the site)
26. types of guarding and interlock systems
27. techniques for storage, transfer, handling and use of explosive, flammable, toxic, corrosive and irritant materials in relation to the site

*Fire prevention and precaution*

28. types, use, maintenance and siting of fire-fighting equipment, types of fires, effects of smoke and toxic fumes, use of extinguishers and evacuation procedures

*Miscellaneous*

29. instructions, rules and schemes
30. permit to work systems
31. principles of design of safe systems of work
32. contractors: rules of entry and conditions of contract
33. operation and application of various types of protective equipment for foot, body, head, eye, ear, skin, respiratory protection and the management and maintenance of personal protective equipment schemes
34. occupational health surveillance
35. principles of manual handling
36. principles of dust control
37. principles of noise control
38. safe use of compressed air
39. safe use of abrasive wheels
40. safe use of bottled gas (oxygen, acetylene, LPG)
41. first aid requirements
42. benefits of improved health and safety performance
43. how to identify hazards and risks
44. implementing plans
45. managing information
46. how to develop plans to improve health and safety performance which are measurable time-tabled and systematic
47. methods for monitoring and evaluating the effectiveness of implementation
48. communication, involvement and motivation
49. health and safety efficiency in terms of the site and also industry best practice
50. organisational and statutory requirements in respect of record keeping

## **Unit 4      Implement effective environmental systems in extractive industries sites**

### **Unit Summary**

#### **Overview**

This unit is about implementing effective environmental systems at the extractive industries site/s. This includes implementing centralised company systems and policy as required and also establishing environmental systems that are specific to the site. It involves improving environmental management by making sure these systems operate effectively throughout the site. It also covers making recommendations for improvements to existing environmental systems.

This unit is for you if you are:

- A manager with responsibility for all operational aspects of a site or sites. It is likely that you will be responsible for subordinate managers

This unit contains two elements

4.1      *Establish and maintain environmental systems*

4.2      *Monitor and improve the control of environmental systems*

#### **Performance requirement**

*In performing effectively in this unit you will need to demonstrate that you do the following:*

In order to *establish and maintain environmental systems* you need to analyse the processes at the site and decide upon appropriate systems that will reduce risks or improve the control of environmental aspects. You need to discuss and develop plans that will meet your objectives for implementation in terms of detail and timescale and which, are consistent with organisational and legislative requirements and represent good practice. To do this you will need to involve interested parties in the process, take account of any obstacles and recognise the need for additional expertise where this is required. You will on occasions need to secure funds and resources. After implementation you will need to audit the system, taking corrective action, if necessary to ensure achievement of objectives. Systems are only effective if the people using them understand them and are committed to their introduction and maintenance, as such it is important that this is confirmed at each stage of the process. You will need to be able to accomplish this over a wide range of environmental systems.

In order to *monitor and improve the control of environmental systems* you will need to critically examine existing systems for potential improvements which take into account patterns and trends and to some extent are dependent on feedback from others at the site. Where known breaches of environmental systems have occurred you will take action to improve the deficiencies in the system. You will also take into account environmental audits and suggestions from others as part of the monitoring process. Where changes are made to environmental systems you will have to demonstrate that they are evaluated against previous performance and you will need to keep records of system changes.

### **Knowledge and understanding**

*To perform effectively in this unit you need to have a knowledge and understanding in the areas of*

- benefits of improved environmental performance
- how to identify the risks and costs of improved environmental performance
- implementing plans
- managing information
- how to develop plans to improve environmental performance which are measurable time-tabled and systematic
- methods for monitoring and evaluating the effectiveness of implementation
- communication, involvement and motivation
- environmental efficiency in terms of the site and also industry best practice
- analysis of information and interpretation of patterns and trends
- record keeping
- legal definitions
- operational aspects of the site with regard to environmental matters
- relevant environmental legislation
- identification of training needs

## **Unit 4        Implement effective environmental systems in extractive industries sites**

### **Element 4.1        Establish and maintain environmental systems**

#### **The National Standard**

This section provides criteria to assess whether you establish and maintain environmental systems to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you give opportunities to **appropriate people** to make recommendations for the establishment of **environmental systems** in the **workplace**
- b) you agree the scope and objectives of the proposed system with **appropriate people**
- c) your recommendations for establishing **environmental systems** are consistent with the company environmental policy, meet standards set by legal requirements, comply with recognised industry standards and represent good practice
- d) your recommendations clearly specify the procedures required to ensure that objectives are achieved and where possible set measurable targets
- e) you obtain and provide sufficient resources for the **environmental system** to be effective
- f) you agree implementation plans and timescales taking account of feedback from **appropriate people**
- g) you implement the proposed **environmental systems** in the **workplace**
- h) you evaluate the **environmental system** at regular intervals and take corrective action where required
- i) you confirm your subordinates understanding of, and commitment to the changes at appropriate intervals
- j) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. breach of legal requirement and lines of defence
2. difference between qualified and absolute duties.
3. meaning of vicarious and strict liability and statutory nuisance
4. methods of management and control for nuisances
5. responsibilities of employers, employees and others in relation to trespass and nuisance
6. tort of negligence, remedies, joint and several liability, possible defences for negligence
7. relevance of individuals and bodies corporate
8. rights of enforcement officers and maximum penalties on conviction for bodies corporate, directors, managers, employees and others
9. rights of accused persons and witnesses in connection with statements to enforcing officers which may incriminate them at trials, inquests and enquiries
10. meaning of 'so far as is reasonably practicable', 'BATNEEC' and 'BPEO'
11. how company environmental policy relates to the workplace

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12. how planning legislation relates to the workplace
13. The principles and operation of environmental management and audit systems e.g ISO14001, EMAS
14. legislation in relation to consents
15. legislation in relation to uncontrolled releases and emergency plans
16. principles of good water management
17. techniques for water quality improvement
18. techniques for air quality improvement
19. principles of control of environmentally hazardous substances
20. principles of waste management
21. principles of waste reduction
22. principles of good housekeeping
23. material management systems
24. trade association codes of practice
25. restoration design if relevant to the site/s
26. restoration techniques to include movement and storage, habitat creation and aftercare if relevant to the site/s
27. ecology and planning requirements of the legislation currently in force which govern the treatment of areas of statutory designation
28. organisational and statutory requirements in respect of record keeping
29. benefits of improved environmental performance
30. how to identify aspects and impacts
31. implementing plans
32. managing information
33. how to develop plans to improve environmental performance which are measurable time-tabled and systematic
34. communication, involvement and motivation
35. environmental efficiency in terms of the site and also industry best practice
36. organisational and statutory requirements in respect of record keeping

## **Unit 4        Implement effective environmental systems in extractive industries sites**

### **Element 4.2        Monitor and improve the control of environmental systems**

#### **The National Standard**

This section provides criteria to assess whether you monitor and improve the control of environmental systems in to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you assess the outcome of continuous monitoring and evaluate current **environmental systems** in the **workplace**
- b) you correctly identify and analyse **trends and developments** and this is sufficient to take into account all critical factors
- c) you encourage **appropriate people** to report actual and potential breaches of **environmental systems**, when they occur in the **workplace**
- d) you take effective action to rectify breaches in **environmental systems** consistent with the company environmental policy, standards set by legal requirements, recognised industry standards and good practice
- e) you regularly monitor the results of environmental audits and communicate the results to appropriate **people**
- f) you provide opportunities for **appropriate people** to suggest improvements to **environmental systems** in the **workplace**
- g) changes to **environmental systems** are made to improve control where necessary in the **workplace** and evaluated against previous environmental performance
- h) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. breach of legal requirement and lines of defence
2. difference between qualified and absolute duties.
3. meaning of vicarious and strict liability and statutory nuisance
4. methods of management and control for nuisances
5. responsibilities of employers, employees and others in relation to trespass and nuisance
6. tort of negligence, remedies, joint and several liability, possible defences for negligence
7. relevance of individuals and bodies corporate
8. rights of enforcement officers and maximum penalties on conviction for bodies corporate, directors, managers, employees and others
9. rights of accused persons and witnesses in connection with statements to enforcing officers which may incriminate them at trials, inquests and enquiries
10. meaning of 'so far as is reasonably practicable', 'BATNEEC' and 'BPEO'
11. how company environmental policy relates to the workplace
12. how planning legislation relates to the workplace
13. The principles and operation of environmental management and audit systems e.g. ISO14001, EMAS

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14. legislation in relation to consents
15. legislation in relation to uncontrolled releases and emergency plans
16. principles of water management
17. techniques for water quality improvement
18. techniques for air quality improvement
19. principles of control of environmentally hazardous substances
20. principles of waste management
21. principles of waste reduction
22. principles of good housekeeping
23. material management systems
24. trade association codes of practice
25. restoration design if relevant to the site/s
26. restoration techniques to include movement and storage, habitat creation and aftercare if relevant to the site/s
27. ecology and planning requirements of the legislation currently in force which govern the treatment of areas of statutory designation
28. organisational and statutory requirements in respect of record keeping
29. benefits of improved environmental performance
30. how to identify aspects and impacts
31. implementing plans
32. managing information
33. how to develop plans to improve environmental performance which are measurable time-tabled and systematic
34. methods for monitoring and evaluating the effectiveness of implementation
35. communication, involvement and motivation
36. environmental efficiency in terms of the site and also industry best practice
37. analysis of information and interpretation of patterns and trends

## **Unit 5      Implement environmental improvement in extractive industries sites**

### **Unit Summary**

#### **Overview**

This unit is about implementing effective environmental improvements at the extractive industries site/s. This includes implementing centralised company initiatives but in particular is concerned with looking in detail at the environmental requirements of the site/sites under the manager's control. This unit is not concerned with evaluation and implementation of systems for environmental management but with actual environmental improvements in the workplace

This unit is for you if you are:

- A manager with responsibility for all operational aspects of a site or sites. It is likely that you will be responsible for subordinate managers

This unit contains two elements

5.1      *Identify and evaluate the opportunities for environmental improvement*

5.2      *Implement and monitor the environmental improvement*

#### **Performance requirement**

*In performing effectively in this unit you will need to demonstrate that you do the following:*

In order to *identify and evaluate the opportunities for environmental improvement* you need to analyse the processes in the workplace and decide upon appropriate improvements that will reduce risks or improve the control of environmental aspects. You need to discuss and develop plans that will meet your objectives for implementation in terms of detail and timescale and which, are consistent with organisational and legislative requirements and represent good practice. To do this you will need to involve interested parties in the process, take account of normal, abnormal and emergency situations and recognise the need for additional expertise where this is required. You will on occasions need to secure funds and resources and this will involve preparation of a clear case supported by sound evidence. You will need to demonstrate that you have identified and evaluated a number of improvements covering a wide range of environmental issues.

In order to *implement and monitor the environmental improvement* you will need to ensure that you provide sufficient resources for the implementation of the improvement and allow all concerned to contribute to the process effectively. You will be prepared to make modifications to the implementation programme to resolve any problems which may arise and ensure that all concerned are committed to the improvement programme at all times. After implementation you will need to demonstrate that improvements are evaluated against previous performance and you will keep records of changes. Implications of the improvements need to be taken into account particularly in terms of how people at the site will be affected.

### **Knowledge and understanding**

*To perform effectively in this unit you need to have a knowledge and understanding in the areas of:*

- benefits of improved environmental performance
- how to identify the risks and costs of improved environmental performance
- implementing plans
- managing information
- how to develop plans to improve environmental performance which are measurable, time-tabled and systematic
- methods for monitoring and evaluating the effectiveness of implementation
- communication, involvement and motivation
- environmental efficiency in terms of the site and also industry best practice
- analysis of information and interpretation of patterns and trends
- record keeping
- legal definitions
- operational aspects of the site with regard to environmental issues
- relevant environmental legislation

## **Unit 5        Implement environmental improvement in extractive industries sites**

### **Element 5.1        Identify and evaluate the opportunities for environmental improvement**

#### **The National Standard**

This section provides criteria to assess whether you identify and evaluate the opportunities for environmental improvement to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you give opportunities to **appropriate people** to make recommendations to improve environmental activity in the **workplace**
- b) evaluation of recommendations takes into account all relevant **information** concerning the work activity
- c) the **improvements** you identify are measurable, consistent with the company environmental policy, meet standards set by legal requirements, comply with recognised industry standards and represent good practice
- d) your recommendations take into account the effects of normal, abnormal and emergency situations
- e) you make a clear case for the proposed improvement and support your case with sound evidence
- f) you agree implementation plans and timescales taking account of feedback from **appropriate people**
- g) your plans clearly identify the implications for, and the roles of all involved in the proposed improvement
- h) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

- 1. breach of legal requirement and lines of defence
- 2. difference between qualified and absolute duties.
- 3. meaning of vicarious and strict liability and statutory nuisance
- 4. methods of management and control for nuisances
- 5. responsibilities of employers, employees and others in relation to trespass and nuisance
- 6. tort of negligence, remedies, joint and several liability, possible defences for negligence
- 7. relevance of individuals and bodies corporate
- 8. rights of enforcement officers and maximum penalties on conviction for bodies corporate, directors, managers, employees and others
- 9. rights of accused persons and witnesses in connection with statements to enforcing officers which may incriminate them at trials, inquests and enquiries
- 10. meaning of 'so far as is reasonably practicable', 'BATNEEC' and 'BPEO'
- 11. how company environmental policy relates to the workplace
- 12. how planning legislation relates to the workplace
- 13. The principles and operation of environmental management and audit systems e.g. ISO14001, EMAS
- 14. legislation in relation to consents
- 15. legislation in relation to uncontrolled releases and emergency plans

16. principles of good water management
17. techniques for water quality improvement
18. techniques for air quality improvement
19. principles of control of environmentally hazardous substances
20. principles of waste management
21. principles of waste reduction
22. principles of good housekeeping
23. material management systems
24. trade association codes of practice
25. restoration design if relevant to the site/s
26. restoration techniques to include movement and storage, habitat creation and aftercare if relevant to the site/s
27. ecology and planning requirements of the legislation currently in force which govern the treatment of areas of statutory designation
28. benefits of improved environmental performance
29. how to identify aspects and impacts
30. implementing plans
31. managing information
32. how to develop plans to improve environmental which are measurable time-tabled and systematic
33. communication, involvement and motivation
34. environmental efficiency in terms of the site and also industry best practice
35. organisational and statutory requirements in respect of record keeping

## **Unit 5        Implement environmental improvement in extractive industries sites**

### **Element 5.2        Implement and monitor the environmental improvement**

#### **The National Standard**

This section provides criteria to assess whether you implement and monitor environmental improvement to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) the resources and support you provide are sufficient for the **improvements** to be implemented within agreed timescales
- b) environmental **improvements** are implemented in the **workplace**
- c) the way in which you implement the **improvements** enables **appropriate people** to contribute to the process effectively
- d) the modifications you make to the implementation activity are sufficient to resolve any problems arising
- e) you monitor and evaluate **improvements** at appropriate times against agreed implementation plans
- f) you confirm **appropriate peoples** understanding of, and commitment to the improvement at appropriate intervals
- g) you carry out a post-implementation audit and compare the outcome with the original recommendations
- h) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

- 1. breach of legal requirement and lines of defence
- 2. difference between qualified and absolute duties.
- 3. meaning of vicarious and strict liability and statutory nuisance
- 4. methods of management and control for nuisances
- 5. responsibilities of employers, employees and others in relation to trespass and nuisance
- 6. tort of negligence, remedies, joint and several liability, possible defences for negligence
- 7. relevance of individuals and bodies corporate
- 8. rights of enforcement officers and maximum penalties on conviction for bodies corporate, directors, managers, employees and others
- 9. rights of accused persons and witnesses in connection with statements to enforcing officers which may incriminate them at trials, inquests and enquiries
- 10. meaning of 'so far as is reasonably practicable', 'BATNEEC' and 'BPEO'
- 11. how company environmental policy relates to the workplace
- 12. how planning legislation relates to the workplace
- 13. The principles and operation of environmental management and audit systems e.g ISO14001, EMAS
- 14. legislation in relation to consents
- 15. legislation in relation to uncontrolled releases and emergency plans
- 16. principles of good water management

17. techniques for water quality improvement
18. techniques for air quality improvement
19. principles of control of environmentally hazardous substances
20. principles of waste management
21. principles of waste reduction
22. principles of good housekeeping
23. material management systems
24. trade association codes of practice
25. restoration design if relevant to the site/s
26. restoration techniques to include movement and storage, habitat creation and aftercare if relevant to the site/s
27. ecology and planning requirements of the legislation currently in force which govern the treatment of areas of statutory designation
28. benefits of improved environmental performance
29. how to identify aspects and impacts
30. implementing plans
31. managing information
32. how to develop plans to improve environmental performance which are measurable time-tabled and systematic
33. methods for monitoring and evaluating the effectiveness of implementation
34. communication, involvement and motivation
35. environmental efficiency in terms of the site and also industry best practice
36. organisational and statutory requirements in respect of record keeping

## **Unit 6 Investigate and evaluate health, safety and environmental accidents and incidents in extractive industries sites**

### **Unit Summary**

#### **Overview**

This unit is about the investigation and evaluation of accidents, incidents and near misses both in relation to the environment and health and safety which occur in the extractive and mineral processing industries. This includes the process of investigation, gathering of information, evaluation of the cause and recommendations for improvement.

This unit is for you if you are:

- A manager with responsibility for all operational aspects of a site or sites. It is likely that you will be responsible for subordinate managers.
- A manager with responsibility for a section or sections of an operational site working under the direction of a site manager. It is likely that you will be responsible for subordinate supervisors

This unit contains three elements

6.1 *Investigate accidents and incidents*

6.2 *Make recommendations for improving health and safety performance as a result of investigations*

6.3 *Make recommendations for improving environmental control as a result of investigations*

#### **Performance requirement**

*In performing effectively in this unit you will need to demonstrate that you do the following:*

In order to *investigate accidents and incidents* you will need to ensure that that accidents and incidents are reported and that they are then investigated. This involves determining the scope and method of the investigation and ensuring that all the people who will be involved are properly briefed. The investigation will cover the events leading up to the accident/incident, quantify injury/damage and identify any hazards or environmental aspects that need to be considered for risk assessment. You will ensure that clear records are kept of the process.

In order to *make recommendations for improving health and safety performance as a result of investigations* you will carry out an analysis of all findings, suggestions and supporting material collected during the investigation and make detailed, workable recommendations to improve health and safety. You will ensure that appropriate people are involved not just in this process but also to produce action plans for implementation of improvements. These action plans should also specify the method of monitoring and evaluation of the improvement. This element links in with units two and three and may well involve unit seven if risk assessment is involved

In order to *make recommendations for improving environmental control as a result of investigations* you will carry out an analysis of all findings, suggestions and supporting material collected during the investigation and make detailed, workable recommendations to improve environmental control. You will ensure that appropriate people are involved not just in this process but also to produce action plans for implementation of improvements. These action plans should also specify the method of monitoring and evaluation of the improvement. This element links in with units four and five and may well involve unit eight if environmental risk assessment is involved.

### **Knowledge and understanding**

*To perform effectively in this unit you need to have a knowledge and understanding in the areas of*

- communication, involvement and motivation
- interview and questioning techniques
- health, safety and environmental efficiency in terms of the site and also industry best practice
- health, safety and environmental accident/incident investigation techniques
- information handling and record management
- health, safety and environmental training requirements
- health, safety and environmental legislation
- benefits of improved environmental performance
- how to develop plans to improve health, safety and environmental performance which are measurable, time-tabled and systematic
- implementing plans
- methods for monitoring and evaluating the effectiveness of implementation
- analysis of information and interpretation of patterns and trends
- legal definitions

## **Unit 6 Investigate and evaluate health, safety and environmental accidents and incidents in extractive industries sites**

### **Element 6.1 Investigate accidents and incidents**

#### **The National Standard**

This section provides criteria to assess whether you investigate accidents and incidents to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) **accidents/incidents** in the **workplace** are reported and investigated in accordance with legal and company requirements
- b) the scope and method of the investigation is determined and necessary documentation and support materials prepared before the investigation starts
- c) you brief people involved to ensure an understanding of the purpose of the investigation and how it will be conducted
- d) you gather detailed, accurate and comprehensive information from the people involved in order to determine the chain of events leading up to the **accident/incident**
- e) the cause(s) of the **accident/incident** is determined
- f) the extent of the injury/damage is quantified
- g) any breeches of legal and/or organisational requirements are considered
- h) any other hazards/aspects or weakness in procedures are identified for risk assessment/aspect evaluation
- i) you check all documentary evidence to identify and review any consistencies
- j) investigation teams do not seek to blame any individual or group of individuals
- k) you prepare a report containing all the findings of the investigation and keep clear records which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of hazard, risk, significant risk, accident, incident, near miss, danger, dangerous occurrence, accident rate, aspect, significant aspect, impact, disease, incidence, frequency and severity
2. how health and safety and environmental policies operate on the site where the candidate works
3. workplace monitoring and hazard/aspect identification methods, e.g. formal and informal safety and environmental inspections, surveys, audits and examination of records
4. effective procedures for carrying out health and safety risk assessment and environmental aspect evaluation
5. health safety and environmental accident/incident investigation techniques and how to implement control procedures

6. how accident and incidents can be avoided by design methods such that hazards are engineered out and aspects controlled
7. methods of preventing accidents and incidents commonly arising on sites
8. the common Duty of Care and how it relates between employers, manufacturers, suppliers, occupiers of premises and employees, customers, visitors, contractors and others
9. the Duty of Care for waste and how it relates to the reduction of threat to the environment and human health
10. authorities empowered to enforce national environmental legislation and their powers
11. current methods used in enforcement e.g. prohibition notices, improvement notices, orders, court orders, notices to warn, enforcement notices, abatement notices
12. in-house information in relation to internal accidents/incidents, near misses and cases of occupational illnesses
13. use of health, safety and environmental accident/incident reports and occupational health information from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible hazards and aspects
14. methods of communication particularly in dealing with people at different levels
15. interview and questioning techniques
16. meeting design, agenda, purpose, objectives, chairmanship, participant skills and interpersonal relations
17. organisational and statutory requirements in respect of record keeping
18. reporting requirements and procedures for accidents and incidents under current legislation
19. health, safety and environmental efficiency in terms of the site and also industry best practice
20. benefits of improved health, safety and environmental performance
21. relevant health, safety and environmental legislation
22. analysis of information and interpretation of patterns and trends

## **Unit 6 Investigate and evaluate health, safety and environmental accidents and incidents in extractive industries sites**

### **Element 6.2 Make recommendations for improving health and safety performance as a result of investigations**

#### **The National Standard**

This section provides criteria to assess whether you make recommendations for improving health and safety performance as a result of investigations to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) **recommendations** for improving health and safety in the **workplace** are based on an accurate and detailed analysis of all findings, advice and supporting material collected during the investigation
- b) you develop **recommendations** for improving health and safety which meet standards set by legal requirements, are consistent with organisational requirements, comply with recognised industry standards, represent good practice and minimise risk
- c) **recommendations** for improving health and safety are workable and include measures for review
- d) you produce and document realistic, achievable action plans for implementing the **recommendations** which involve **appropriate people**
- e) your action plans include a process to monitor and evaluate implemented **recommendations**
- f) you present **recommendations** and action plans to **appropriate people**

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of hazard, risk, significant risk, accident, danger, dangerous occurrence, accident rate, disease, incidence, frequency and severity
2. workplace monitoring and hazard identification methods, e.g. formal and informal safety inspections, safety surveys, audits and examination of records.
3. effective procedures for carrying out health and safety risk assessment
4. health and safety accident/incident investigation techniques and procedures, particularly for near misses
5. hazard identification and risk analysis techniques
6. requirements of relevant legislation and organisational procedures
7. the common Duty of Care and how it relates between employers, manufacturers, suppliers, occupiers of premises and employees, customers, visitors, contractors and others
8. authorities empowered to enforce national health and safety legislation and their powers
9. current methods used in enforcement e.g. prohibition notices, improvement notices, orders, court orders, notices to warn, enforcement notices, abatement notices.
10. in-house information in relation to internal accidents, near miss incidents and cases of occupational illnesses
11. use of health and safety accident/incident reports and occupational health information from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible hazards

12. basic knowledge of the main types of occupational health risk – chemical (toxic, corrosive, dermatitic), physical (noise, dust, temperature, light, vibration, repetitive strain) and ergonomic
13. relevant statutory provisions relating to COSHH
14. the nature and use of various types of exposure limits, MEL's, OEL's and logarithmic scales.
15. role of occupational health monitoring
16. how the incorporation of commonly used protective devices and correct plant maintenance contribute to improved health and safety reliability
17. matching job descriptions, specifications and health and safety requirements to the abilities of individuals, techniques of training and limitations thereof
18. health and safety induction schemes
19. organisational and statutory requirements in respect of record keeping
20. the problems raised by different people's inability to rank hazards and risks and differing attitudes towards long term health and safety risks
21. how accidents and incidents can be avoided by design methods such that hazards are engineered out
22. the structure of organisations, work groups, trades unions and works committees, conflict in organisations and its resolution, functional relationships.
23. response to the imposition of statutory requirements, works rules and commercial factors which may affect human reliability
24. awareness of the skills required for successful public and community relations
25. health and safety efficiency in terms of the site and also industry best practice
26. benefits of improved health and safety performance
27. how to develop plans to improve health and safety performance which are measurable, time-tabled and systematic
28. health and safety training requirements
29. relevant health and safety legislation

## **Unit 6 Investigate and evaluate health, safety and environmental accidents and incidents in extractive industries sites**

### **Element 6.3 Make recommendations for improving environmental control as a result of investigations**

#### **The National Standard**

This section provides criteria to assess whether you make recommendations for improving environmental control as a result of investigations to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) **recommendations** for improving environmental control in the **workplace** are based on an accurate and detailed analysis of all findings, advice and supporting material collected during the investigation
- b) you develop **recommendations** for improving environmental control which meet standards set by legal requirements, are consistent with organisational requirements, comply with recognised industry standards, represent good practice and minimise risk
- c) **recommendations** for improving environmental control are workable and include measures for review
- d) you produce and document realistic, achievable action plans for implementing the **recommendations** which involve **appropriate people**
- e) your action plans include a process to monitor and evaluate implemented **recommendations**
- f) you present **recommendations** and action plans to **appropriate people**

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of aspect, significant aspect, aspect evaluation, impact, incident, danger, disease, incidence, frequency, severity, and pollution.
2. workplace monitoring and aspect identification methods, e.g. formal and informal environmental inspections, environmental surveys, audits and examination of records.
3. effective procedures for identifying aspects, carrying out environmental aspect evaluation and risk assessment
4. environmental incident investigation techniques and procedures, particularly for near misses
5. requirements of relevant legislation and organisational procedures
6. the Duty of Care for waste and how it relates to the reduction of threat to the environment and human health
7. authorities empowered to enforce national environmental legislation and their powers
8. current methods used in enforcement e.g. prohibition notices, improvement notices, orders, court orders, notices to warn, enforcement notices, abatement notices
9. in-house information in relation to internal environmental incidents and near misses
10. use of environmental incident reports from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible aspects
11. basic knowledge of the main types of environmental impact – emissions to air, releases to water and contamination to ground

12. basic knowledge of environmental nuisance, dust, noise
13. basic knowledge of waste reduction and recycling techniques
14. the nature and use of various types of exposure limits
15. requirements of ISO 14001 in relation to environmental aspect evaluation
16. basic knowledge of integrated pollution control and local authority air pollution control and the principle of BATNEEC and best practicable environmental option (BPEO)
17. how the incorporation of commonly used protective devices and correct plant maintenance contribute to improved environmental reliability
18. matching job descriptions, specifications and environmental requirements to the abilities of individuals, techniques of training and limitations thereof.
19. environmental induction schemes
20. organisational and statutory requirements in respect of record keeping
21. the problems raised by different people's inability to assess aspects and impacts and differing attitudes towards long term environmental impacts
22. how incidents can be avoided by design methods such that aspects are controlled
23. the structure of organisations, work groups, trades unions and works committees, conflict in organisations and its resolution, functional relationships.
24. response to the imposition of statutory requirements, works rules and commercial factors which may affect human reliability
25. awareness of the skills required for successful public and community relations
26. environmental efficiency in terms of the site and also industry best practice
27. benefits of improved environmental performance
28. how to develop plans to improve environmental performance which are measurable, time-tabled and systematic
29. environmental training requirements
30. relevant environmental legislation

## **Unit 7      Manage the process of health and safety risk assessment in extractive industries sites**

### **Unit Summary**

#### **Overview**

This unit is about managing health and safety risk assessment at extractive industries site/s. This includes hazard identification, assessing the level of risk for each hazard and then eliminating or controlling those hazards to minimise harm. Risk assessment is an on-going process, therefore reviewing and evaluating risk assessments on a regular basis, or whenever changes occur in the workplace is essential

This unit is for you if you are:

- A manager with responsibility for all operational aspects of a site or sites. It is likely that you will be responsible for subordinate managers

This unit contains three elements

7.1      *Identify health and safety hazards*

7.2      *Assess and control the level of risk*

7.3      *Review and evaluate risk assessments*

#### **Performance requirement**

*In performing effectively in this unit you will need to demonstrate that you do the following:*

In order to *identify health and safety hazards* you will need to clearly define the scope and method of hazard identification to be used to ensure that people who are at risk are identified. You may need to seek advice from a specialist in risk assessment and will be sure to use all information available for identification of hazards and their existing controls. You will ensure that clear records are kept. You will manage this process over a wide range of workplace situations.

In order to *assess and control the level of risk* you will need to review all the legal requirements appropriate to the workplace. Hazards that can be eliminated will be identified with significant hazards being prioritised for risk assessment. As a result of the risk assessment you will implement measures that reduce or control the risk to minimise harm. You will take into account any necessary training that is required as a result of implementing the new measures. Records will be kept of all risk assessments. You will manage this process over a wide range of workplace situations.

In order to *review and evaluate risk assessments* you will need to make comparisons with the latest risk assessments and current practices in the workplace in order to identify any changes in risk. You will investigate the action taken as a result of recommendations arising from previous risk assessments and taking into account any patterns and trends within the organisation evaluate the current risk. When changes occur in the workplace you will identify new hazards and update the risk assessment in order to implement new recommendations. You will ensure that all those who are affected by the changes are informed and where appropriate receive training. Records must be kept of all risk assessments. You will manage this process over a wide range of workplace situations.

### **Knowledge and understanding**

*To perform effectively in this unit you need to have a knowledge and understanding in the areas of*

- communication, involvement and motivation
- interview and questioning techniques
- workplace practices and procedures
- health and safety efficiency in terms of the site and also industry best practice
- health and safety hazard investigation and risk assessment techniques
- information handling and record management
- health and safety training requirements
- health and safety legislation
- benefits of improved health and safety performance
- how to develop plans to remove or control hazards and minimise risks, which are measurable, time-tabled and systematic
- implementing plans
- methods for monitoring and evaluating the effectiveness of implementation
- analysis of information and interpretation of patterns and trends
- legal definitions

## **Unit 7        Manage the process of health and safety risk assessment in extractive industries sites**

### **Element 7.1        Identify health and safety hazards**

#### **The National Standard**

This section provides criteria to assess whether you identify health and safety hazards to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you clearly define the scope and method of identification of the **hazard**
- b) all information relative to the risk assessment is up to date and from recognised and reliable sources
- c) **hazards** in the **workplace** and their existing controls are identified
- d) **people who are at risk** from significant **hazards** are identified
- e) advice is sought from specialists in risk assessment when appropriate
- f) you report the results of the process to appropriate people
- g) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of hazard, significant hazard, risk, significant risk, accident, danger, accident rate, disease, incidence, frequency and severity.
2. workplace monitoring and hazard identification methods, e.g. formal and informal health and safety inspections, surveys, audits and examination of records.
3. effective procedures for carrying out health and safety risk assessment
4. health and safety accident/incident investigation techniques and procedures, particularly for near misses
5. the main points of legislation which relate to risk assessment and hazard identification
6. requirement of health and safety document with regard to risk assessment
7. in-house information in relation to internal accidents, incidents, near misses, cases of occupational illnesses
8. use of health and safety accident/incident reports and occupational health information from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible hazards
9. basic knowledge of the main types of occupational health risk – chemical (toxic, corrosive, dermatitic), physical (noise, dust, temperature, light, vibration, repetitive strain) and ergonomic
10. the nature and use of various types of exposure limits, MEL's, OEL's and logarithmic scales.
11. how the incorporation of commonly used protective devices and correct plant maintenance contribute to improved control of health and safety
12. methods for maintaining safe places of work, means of access and egress, prevention of slips, trips and falls from elevated ladders and walkways, danger from falling objects, safe use of ladders
13. safe use of mechanical handling equipment in relation to legislation currently in force
14. nature and causes of injuries associated with manual handling
15. matching job descriptions, specifications and job safety requirements to the abilities of individuals, techniques of training and limitations thereof.
16. health and safety induction schemes

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17. organisational and statutory requirements in respect of record keeping
18. the problems raised by different people's inability to rank hazards and risks and differing attitudes towards long term health and safety risks
19. how accidents and incidents can be avoided by design methods such that hazards are engineered out
20. the structure of organisations, work groups, trades unions and works committees, conflict in organisations and its resolution, functional relationships.
21. response to the imposition of statutory requirements, works rules and commercial factors which may affect human reliability
22. awareness of the skills required for successful public and community relations
23. communication, involvement and motivation
24. interview and questioning techniques
25. workplace practices and procedures
26. health and safety efficiency in terms of the processes under your control and also industry best practice
27. benefits of improved health and safety performance
28. analysis of information and interpretation of patterns and trends

## **Unit 7        Manage the process of health and safety risk assessment in extractive industries sites**

### **Element 7.2        Assess and control the level of risk**

#### **The National Standard**

This section provides criteria to assess whether you assess and control the level of risk to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you review all legal requirements that are appropriate to the **workplace** and existing working practices to ensure that effective control measures are in place
- b) hazards which can be eliminated are identified
- c) hazards which can not be eliminated are prioritised for **risk assessment**
- d) you carry out **risk assessment** in the **workplace** and devise measures which meet standards set by legal requirements, comply with recognised industry standards, represent good practice and which reduce or control risk to minimise harm
- e) advice is sought from specialists in **risk assessment** when appropriate
- f) you implement measures to reduce or control risks arising out of **risk assessments** in the workplace
- g) you report the results of the process to appropriate people
- h) you implement training where required
- i) clear records are kept of **risk assessments** and recommendations which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of hazard, significant hazard, risk, significant risk, accident, danger, accident rate, disease, incidence, frequency and severity
2. workplace monitoring and hazard identification methods, e.g. formal and informal health and safety inspections, surveys, audits and examination of records.
3. effective procedures for carrying out health and safety risk assessment
4. health and safety accident/incident investigation techniques and procedures, particularly for near misses
5. the main points of legislation which relate to risk assessment and hazard identification
6. requirement of health and safety document with regard to risk assessment
7. in-house information in relation to internal accidents, incidents, near misses, cases of occupational illnesses
8. use of health and safety accident/incident reports and occupational health information from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible hazards

9. basic knowledge of the main types of occupational health risk – chemical (toxic, corrosive, dermatitic), physical (noise, dust, temperature, light, vibration, repetitive strain) and ergonomic
10. the nature and use of various types of exposure limits, MEL's ,OEL's and logarithmic scales.
11. how the incorporation of commonly used protective devices and correct plant maintenance contribute to improved control of health and safety
12. methods for maintaining safe places of work, means of access and egress, prevention of slips, trips and falls from elevated ladders and walkways, danger from falling objects, safe use of ladders
13. safe use of mechanical handling equipment in relation to legislation currently in force
14. nature and causes of injuries associated with manual handling
15. matching job descriptions, specifications and job safety requirements to the abilities of individuals, techniques of training and limitations thereof.
16. health and safety induction schemes
17. organisational and statutory requirements in respect of record keeping
18. the problems raised by different people's inability to rank hazards and risks and differing attitudes towards long term health and safety risks
19. how accidents and incidents can be avoided by design methods such that hazards are engineered out
20. the structure of organisations, work groups, trades unions and works committees, conflict in organisations and its resolution, functional relationships.
21. response to the imposition of statutory requirements, works rules and commercial factors which may affect human reliability
22. awareness of the skills required for successful public and community relations
23. recognition and assessment of training implications in relation to the control of risks
24. communication, involvement and motivation
25. workplace practices and procedures
26. health and safety efficiency in terms of the processes under your control and also industry best practice
27. benefits of improved health and safety performance
28. health and safety training requirements
29. how to develop plans to remove or control hazards and minimise risks, which are measurable, time-tabled and systematic
30. analysis of information and interpretation of patterns and trends

## **Unit 7        Manage the process of health and safety risk assessment in extractive industries sites**

### **Element 7.3        Review and evaluate risk assessments**

#### **The National Standard**

This section provides criteria to assess whether you review and evaluate risk assessments to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you compare latest risk assessments to **current practices** in the **workplace**
- b) you identify accurately any change in risk between previous and new practices
- c) you investigate the action taken as a result of recommendations specified in latest risk assessments
- d) the evaluation of present risk is measured against current patterns and trends provided by the organisation
- e) you identify new hazards in the **workplace** arising from **changes in practices**
- f) advice is sought from specialists in risk assessment when appropriate
- g) risk assessments are updated and new recommendations to reduce or control risks are implemented in line with the review
- h) you promptly inform everyone affected by the changes
- i) you carry out training where required
- j) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of hazard, significant hazard, risk, significant risk, accident, danger, accident rate, disease, incidence, frequency and severity.
2. workplace monitoring and hazard identification methods, e.g. formal and informal health and safety inspections, surveys, audits and examination of records.
3. effective procedures for carrying out health and safety risk assessment
4. health and safety accident/incident investigation techniques and procedures, particularly for near misses
5. the main points of legislation which relate to risk assessment and hazard identification
6. requirement of health and safety document with regard to risk assessment
7. in-house information in relation to internal accidents, incidents, near misses, cases of occupational illnesses
8. use of health and safety accident/incident reports and occupational health information from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible hazards
9. basic knowledge of the main types of occupational health risk – chemical (toxic, corrosive, dermatitic), physical (noise, dust, temperature, light, vibration, repetitive strain) and ergonomic
10. the nature and use of various types of exposure limits, MEL's, OEL's and logarithmic scales.
11. how the incorporation of commonly used protective devices and correct plant maintenance contribute to improved control of health and safety

12. methods for maintaining safe places of work, means of access and egress, prevention of slips, trips and falls from elevated ladders and walkways, danger from falling objects, safe use of ladders
13. safe use of mechanical handling equipment in relation to legislation currently in force
14. nature and causes of injuries associated with manual handling
15. matching job descriptions, specifications and job safety requirements to the abilities of individuals, techniques of training and limitations thereof.
16. health and safety induction schemes
17. organisational and statutory requirements in respect of record keeping
18. the problems raised by different people's inability to rank hazards and risks and differing attitudes towards long term health and safety risks
19. how accidents and incidents can be avoided by design methods such that hazards are engineered out
20. the structure of organisations, work groups, trades unions and works committees, conflict in organisations and its resolution, functional relationships.
21. response to the imposition of statutory requirements, works rules and commercial factors which may affect human reliability
22. awareness of the skills required for successful public and community relations
23. recognition and assessment of training implications in relation to the control of risks
24. communication, involvement and motivation
25. workplace practices and procedures
26. health and safety efficiency in terms of the processes under your control and also industry best practice
27. benefits of improved health and safety performance
28. health and safety training requirements
29. how to develop plans to remove or control hazards and minimise risks, which are measurable, time-tabled and systematic
30. analysis of information and interpretation of patterns and trends

## **Unit 8      Manage the process of environmental risk assessment in extractive industries sites**

### **Unit Summary**

#### **Overview**

This unit is about managing environmental risk assessment in extractive industries site/s. This includes aspect identification, assessing the impact of each aspect and then eliminating or controlling those aspects to minimise harm to the environment. Risk assessment is an on-going process, therefore reviewing and evaluating environmental risk assessments on a regular basis, or whenever changes occur in the workplace is essential

This unit is for you if you are:

- A manager with responsibility for all operational aspects of a site or sites. It is likely that you will be responsible for subordinate managers

This unit contains three elements

- 8.1      *Identify environmental aspects*
- 8.2      *Assess and control the level of environmental risk*
- 8.3      *Review and evaluate environmental risk assessments*

#### **Performance requirement**

*In performing effectively in this unit you will need to demonstrate that you do the following:*

In order to *identify environmental aspects* you will need to clearly define the scope and method of aspect identification to be used. You may need to seek advice from a specialist in environmental risk assessment and will be sure to use all information available for identification of aspects and their existing controls. You will ensure that clear records are kept. You will manage this process over a wide range of workplace situations.

In order to *assess and control the level of environmental risk* you will need to review all the legal requirements appropriate to the workplace. Aspects that can be eliminated will be identified with significant aspects being prioritised for risk assessment. As a result of the risk assessment you will implement measures that reduce or control the impact on the environment to minimise harm. You will take into account any necessary training that is required as a result of implementing the new measures. Records will be kept of all risk assessments. You will manage this process over a wide range of workplace situations.

In order to *review and evaluate environmental risk assessments* you will need to make comparisons with the latest risk assessments and current practices in the workplace in order to identify any changes in risk. You will investigate the action taken as a result of recommendations arising from previous risk assessments and taking into account any patterns and trends within the organisation evaluate the current risk. When changes occur in the workplace you will identify new aspects and update the risk assessment in order to implement new recommendations. You will ensure that all those who are affected by the changes are informed and where appropriate receive training. Records must be kept of all risk assessments. You will manage this process over a wide range of workplace situations.

### **Knowledge and understanding**

*To perform effectively in this unit you need to have a knowledge and understanding in the areas of*

- communication, involvement and motivation
- interview and questioning techniques
- workplace practices and procedures
- environmental efficiency in terms of the site and also industry best practice
- environmental aspect investigation and risk assessment techniques
- information handling and record management
- environmental training requirements
- environmental legislation
- benefits of improved environmental performance
- how to develop plans to remove or control aspects and minimise impacts, which are measurable, time-tabled and systematic
- implementing plans
- methods for monitoring and evaluating the effectiveness of implementation
- analysis of information and interpretation of patterns and trends
- legal definitions

## **Unit 8        Manage the process of environmental risk assessment in extractive industries sites**

### **Element 8.1        Identify environmental aspects**

#### **The National Standard**

This section provides criteria to assess whether you identify environmental aspects to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you clearly define the scope and method of identification of the **aspect/significant aspect**
- b) all information relative to the aspect evaluation is up to date and from recognised and reliable sources
- c) **aspects/significant aspects** in the **workplace** and their existing controls are identified
- d) advice is sought from specialists in aspect evaluation when appropriate
- e) you report the results of the process to appropriate people
- f) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of aspect, significant aspect, impact, incident, incident rate, incidence, frequency, severity, and pollution.
2. workplace monitoring and aspect evaluation methods, e.g. formal and informal environmental inspections, surveys, audits and examination of records.
3. effective procedures for carrying out environmental risk assessment
4. environmental incident investigation techniques and procedures, particularly for near misses
5. the main points of legislation which relate to risk assessment and aspect identification
6. in-house information in relation to internal incidents and near misses
7. use of environmental incident reports and information from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible aspects
8. the nature and use of various types of exposure limit, MEL's, OEL's and logarithmic scales.
9. how the incorporation of commonly used protective devices and correct plant maintenance contribute to improved control and environmental reliability
10. matching job descriptions, specifications and job environmental requirements to the abilities of individuals, techniques of training and limitations thereof.
11. environmental induction schemes
12. organisational and statutory requirements in respect of record keeping
13. the problems raised by different people's inability to rank aspects and impacts and differing attitudes towards long term environmental risks
14. how incidents can be avoided by design methods such that aspects are controlled
15. the structure of organisations, work groups, trades unions and works committees, conflict in organisations and its resolution, functional relationships.
16. response to the imposition of statutory requirements, works rules and commercial factors which may affect human reliability
17. requirements of ISO 14001 in relation to environmental risk assessment
18. awareness of the skills required for successful public and community relations

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19. communication, involvement and motivation
20. interview and questioning techniques
21. workplace practices and procedures
22. environmental efficiency in terms of the processes under your control and also industry best practice
23. benefits of improved environmental performance
24. analysis of information and interpretation of patterns and trends

## **Unit 8        Manage the process of environmental risk assessment in extractive industries sites**

### **Element 8.2        Assess and control the level of environmental risk**

#### **The National Standard**

This section provides criteria to assess whether you assess and control the level of environmental risk from the site operations to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you review all legal requirements that are appropriate to the **workplace** and existing working practices to ensure that effective control measures are in place
- b) aspects/significant aspects which can be eliminated are identified
- c) aspects/significant aspects which can not be eliminated are prioritised for **risk assessment**
- d) you carry out **risk assessment** in the **workplace** and devise measures which meet standards set by legal requirements, comply with recognised industry standards, represent good practice and which reduce or control risk to minimise harm to the environment
- e) advice is sought from specialists in **risk assessment** when appropriate
- f) you implement measures to reduce or control risks arising out of **risk assessments** in the **workplace**
- g) you report the results of the process to appropriate people
- h) you implement training where required
- i) clear records are kept of **risk assessments** and recommendations which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of aspect, significant aspect, impact, incident, incident rate, incidence, frequency, severity, and pollution.
2. workplace monitoring and aspect evaluation methods, e.g. formal and informal environmental inspections, surveys, audits and examination of records.
3. effective procedures for carrying out environmental risk assessment
4. environmental incident investigation techniques and procedures, particularly for near misses
5. the main points of legislation which relate to risk assessment and aspect identification
6. in-house information in relation to internal incidents and near misses
7. use of environmental incident reports and information from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible aspects
8. the nature and use of various types of exposure limit, MEL's, OEL's and logarithmic scales.
9. how the incorporation of commonly used protective devices and correct plant maintenance contribute to improved control and environmental reliability
10. matching job descriptions, specifications and environmental job requirements to the abilities of individuals, techniques of training and limitations thereof.

11. environmental induction schemes
12. organisational and statutory requirements in respect of record keeping
13. the problems raised by different people's inability to rank aspects and impacts and differing attitudes towards long term environmental risks
14. how incidents can be avoided by design methods such that aspects are controlled
15. the structure of organisations, work groups, trades unions and works committees, conflict in organisations and its resolution, functional relationships.
16. response to the imposition of statutory requirements, works rules and commercial factors which may affect human reliability
17. requirements of ISO 14001 in relation to environmental risk assessment
18. awareness of the skills required for successful public and community relations
19. recognition and assessment of training implications in relation to the control of risks
20. communication, involvement and motivation
21. workplace practices and procedures
22. environmental efficiency in terms of the processes under your control and also industry best practice
23. benefits of improved environmental performance
24. environmental training requirements
25. how to develop plans to remove or control aspects and minimise risks, which are measurable, time-tabled and systematic
26. analysis of information and interpretation of patterns and trends

## **Unit 8        Manage the process of environmental risk assessment in extractive industries sites**

### **Element 8.3        Review and evaluate environmental risk assessments**

#### **The National Standard**

This section provides criteria to assess whether you review and evaluate environmental risk assessments to the National Standard of competence. It also lists the knowledge and understanding that are essential for effective performance.

#### **Performance criteria**

*You must ensure that*

- a) you compare latest risk assessments to **current practices** in the **workplace**
- b) you identify accurately any change in risk between previous and new practices
- c) you investigate the action taken as a result of recommendations specified in latest risk assessments
- d) the evaluation of present risk is measured against current patterns and trends provided by the organisation
- e) you identify new aspects of the **workplace** arising from **changes in practices**
- f) advice is sought from specialists in risk assessment when appropriate
- g) risk assessments are updated and new recommendations to reduce or control risks are implemented in line with the review
- h) you promptly inform everyone affected by the changes
- i) you carry out training where required
- j) clear records are kept which conform to relevant statutory and company requirements

#### **Knowledge requirements**

*You need to know and understand*

1. definitions of aspect, significant aspect, impact, incident, incident rate, incidence, frequency, severity, and pollution.
2. workplace monitoring and aspect evaluation methods, e.g. formal and informal environmental inspections, surveys, audits and examination of records.
3. effective procedures for carrying out environmental risk assessment
4. environmental incident investigation techniques and procedures, particularly for near misses
5. the main points of legislation which relate to risk assessment and aspect identification
6. in-house information in relation to internal incidents and near misses
7. use of environmental incident reports and information from external sources such as government departments, regulatory bodies, trade and professional associations and how such information can be used as an aid in identifying possible aspects
8. the nature and use of various types of exposure limit, MEL's, OEL's and logarithmic scales.
9. how the incorporation of commonly used protective devices and correct plant maintenance contribute to improved control and environmental reliability
10. matching job descriptions, specifications and job environmental requirements to the abilities of individuals, techniques of training and limitations thereof.
11. environmental induction schemes
12. organisational and statutory requirements in respect of record keeping

13. the problems raised by different people's inability to rank aspects and impacts and differing attitudes towards long term environmental risks
14. how incidents can be avoided by design methods such that aspects are controlled
15. the structure of organisations, work groups, trades unions and works committees, conflict in organisations and its resolution, functional relationships.
16. response to the imposition of statutory requirements, works rules and commercial factors which may affect human reliability
17. requirements of ISO 14001 in relation to environmental risk assessment
18. awareness of the skills required for successful public and community relations
19. recognition and assessment of training implications in relation to the control of risks
20. communication, involvement and motivation
21. workplace practices and procedures
22. environmental efficiency in terms of the processes under your control and also industry best practice
23. benefits of improved environmental performance
24. environmental training requirements
25. how to develop plans to remove or control aspects and minimise risks, which are measurable, time-tabled and systematic
26. analysis of information and interpretation of patterns and trends

## Unit 9 Manage the performance of teams and individuals

### Unit Summary

#### Overview

This unit is about making the best use of your team and its members so that they can achieve your organisation's objectives. It covers allocating work, agreeing objectives, and setting out plans and methods of working. It also involves monitoring and evaluating the work of your team and its members and providing feedback to them on their performance.

This unit is for you if you are a manager with responsibility for:

- allocating work to others
- achieving specific results by using resources effectively within a defined area of authority *and*,
- contributing to, or controlling, substantial operational programmes and budgets

This unit contains four elements

9.1 *Allocate work to teams and individuals*

9.2 *Agree objectives and work plans with teams and individuals*

9.3 *Assess the performance of teams and individuals*

9.4 *Provide feedback to teams and individuals on their performance*

In order to *allocate work to teams and individuals*, you need to decide with your team how to distribute tasks and responsibilities. You need to make sure this allocation makes best use of team members' abilities, and provides opportunities for them to learn and develop in their roles. You need to make it clear what is expected of team members and check their commitment to their work. Where resources are limited, you may have to prioritise objectives or reallocate resources while minimising the disruption this may cause.

In order to *agree objectives and work plans with teams and individuals*, you need to set out and agree objectives and work plans which are specific, measurable, realistic, time-bound and consistent with your organisation's overall objectives and policies. You need to explain ways of working in sufficient detail for your team members to understand their objectives and responsibilities. You also need to update objectives and work plans in the light of progress and changes.

In order to *assess the performance of teams and individuals*, you need to make it clear why you are monitoring and assessing their performance. You need to encourage them to evaluate their own performance wherever possible. You need to evaluate their performance against clear, agreed criteria, taking into account organisational constraints and personal circumstances.

In order to *provide feedback to teams and individuals on their performance*, you need to give them regular feedback based on your objective assessment of their performance. Your feedback should acknowledge their achievements and provide constructive suggestions and encouragement. At all times you need to maintain confidentiality and show respect for the individuals concerned. You should also give them the chance to respond to your feedback and suggest how they could improve their performance in the future.

*This unit belongs to the Institute of Management suite of awards (CI3).*

## Unit 9 Manage the performance of teams and individuals

### Element 9.1 Allocate work to teams and individuals

#### The National Standard

This section provides criteria to assess whether you *allocate work to teams and individuals* to the National Standard of competence. It also lists the knowledge and understanding, which are essential for effective performance.

#### Performance Criteria

You must ensure that:

- a) you give opportunities to your team members to recommend how you should *allocate* work within the team
- b) your *allocation* of work makes the best use of your team's resources and the abilities of all its members
- c) your *allocation* of work provides your team members with suitable learning opportunities to meet their personal development objectives
- d) your allocation of work is consistent with your team's objectives, and the objectives, policies and values of your organisation
- e) you clearly define the responsibilities of your team and its individual members, and the limits of your authority
- f) you provide sufficient *information* on your *allocation* of work in a manner and at a level and pace appropriate to the individuals concerned
- g) you confirm team and individual understanding of and commitment to, work *allocations* at appropriate intervals
- h) where team resources are insufficient, you reach agreement with *relevant people* on the prioritisation of objectives or reallocation of resources
- i) you inform your team and its members of changes to work *allocations* in a way which minimises the impact on time, cost and inconvenience

#### Knowledge Requirements

*You need to know and understand:*

##### Communication

- The importance of defining and communicating team and individual responsibilities clearly
- How to communicate team and individual responsibilities clearly to those involved
- How to develop and present work plans using spoken, written and graphical means

##### Delegation

- The importance of the effective allocation of work to your team's performance and your role and responsibilities in relation to this
- The factors which you need to consider when allocating work to individuals within the team
- How to match the allocation of work to learning needs and individual development plans
- How to prioritise and re-prioritise work allocations according to resource availability
- How your changes to work allocations and negotiations around them can impact on cost, time and convenience

Involvement and motivation

- Why your team members should have the opportunity to recommend work allocations
- How to encourage and enable team members to provide suggestions on the allocation of work and be committed to their responsibilities

Organisational context

- Your team objectives, and the organisational policies and values which have a bearing on the allocation of work within your team
- The relevant people with whom negotiations on the allocation of resources need to take place

## Unit 9 Manage the performance of teams and individuals

### Element 9.2 Agree objectives and work plans with teams and individuals

The National Standard

This section provides criteria to assess whether you *agree objectives and work plans with teams and individuals* to the National Standard of competence. It also lists the knowledge and understanding which are essential for effective performance.

Performance Criteria

You must ensure that:

- a) you give opportunities to your *team members* to help define their own *objectives and work plans*
- b) you develop *objectives and work plans* which are consistent with team and organisational objectives and agree these with all personnel in your area of responsibility
- c) the *objectives, work plans* and schedules are realistic and achievable within *organisational constraints*
- d) the *objectives and work plans* take account of *team members'* abilities and development needs
- e) you explain the *objectives and work plans* in sufficient detail and at a level and pace appropriate to your individual *team members*
- f) you confirm team and individual understanding of, and commitment to, *objectives and work plans* at appropriate intervals
- g) you provide advice and guidance on how to achieve *objectives* in sufficient detail and at times appropriate to the needs of teams and individuals
- h) you update the *objectives and work plans* regularly and take account of any individual, team and organisational changes

Knowledge Requirements

*You need to know and understand:*

Communication

- The importance of good communication when explaining objectives and work plans

Involvement and motivation

- The importance of consulting with team members and achieving consensus and agreement on objectives and work plans
- How to encourage and enable team members to define their own work objectives and plans
- How to gain the commitment of team members to objectives and work plans
- The types of issues on which your team members may need advice and guidance

Organisational context

- The organisational objectives and constraints which have a bearing on objectives and work plans

Planning

- How to identify and devise objectives and work plans for the short, medium and long term
- The importance of agreeing objectives and work plans which are realistic and achievable
- How to match objectives and work plans with individuals' abilities and development needs
- The importance of regularly up-dating objectives and work plans
- The difference between someone who is within the manager's line management control and someone for whom the manager has functional responsibility, and the implications this difference may have for planning work

## Unit 9 Manage the performance of teams and individuals

### Element 9.3 Assess the performance of teams and individuals

#### The National Standard

This section provides criteria to assess whether you *assess the performance of teams and individuals* to the National Standard of competence. It also lists the knowledge and understanding which are essential for effective performance.

#### Performance Criteria

You must ensure that:

- a) you clearly explain the ***purpose of monitoring and assessment*** to all those involved
- a) you give opportunities to teams and individuals to ***monitor and assess*** their own performance against work objectives and work plans
- b) you ***monitor*** the performance of teams and individuals at times most likely to maintain and improve effective performance
- c) your ***assessment*** of the performance of teams and individuals is based on sufficient, valid and reliable ***information***
- d) you carry out your ***assessments*** objectively, against clear, agreed criteria
- e) your ***assessments*** take due account of the personal circumstances of team members and the ***organisational constraints*** on their work

#### Knowledge Requirements

*You need to know and understand:*

##### Communication

- The importance of being clear yourself about the purpose of monitoring and assessment and communicating this effectively to those involved

##### Continuous Improvement

- The importance of monitoring and assessing the ongoing performance of teams and individuals
- Different purposes of work monitoring and assessment
- How to make fair and objective assessments
- How to monitor and assess the performance of teams and individuals
- The standards against which work is to be assessed
- The information needed to assess the performance of teams and individuals

##### Information Handling

- How the necessary information should be gathered and validated

##### Involvement and Motivation

- The importance of providing opportunities to team members to monitor and assess their own work, and how to enable this

##### Organisational Context

- The organisational constraints which may affect the achievement of objectives

##### Providing support

- The types of personal circumstances which may impact on individual performance

## Unit 9 Manage the performance of teams and individuals

### Element 9.4 Provide feedback to teams and individuals on their performance

#### The National Standard

This section provides criteria to assess whether you *provide feedback to teams and individuals on their performance* to the National Standard of competence. It also lists the knowledge and understanding which are essential for effective performance.

#### Performance Criteria

You must ensure that:

- a) you provide **feedback** to teams and individuals in a **situation** and in a **form** and manner most likely to maintain and improve their performance
- b) the **feedback** you provide is clear, and is based on your objective assessment of their performance against agreed objectives
- c) your **feedback** acknowledges your team members' achievement
- d) your **feedback** provides your team members with constructive suggestions and encouragement for improving future performance against their work and development objectives
- e) The way in which you provide **feedback** shows respect for individuals and the need for confidentiality
- f) You give opportunities to teams and individuals to respond to **feedback**, and to recommend how they could improve their performance in the future

#### Knowledge Requirements

*You need to know and understand:*

##### Communication

- The importance of good communication skills when providing feedback
- How to provide both positive and negative feedback to team members on their performance
- How to choose an appropriate time and place to give feedback to teams and individuals
- How to provide feedback in a way which encourages your team members to feel that you respect them

##### Continuous Improvement

- The importance of providing clear and accurate feedback to your team members on their performance and your role and responsibilities in relation to this

##### Information Handling

- The principles of confidentiality when providing feedback – which people should receive which pieces of information

##### Involvement and Motivation

- How to motivate team members and gain their commitment by providing feedback
- The importance of being encouraging when providing feedback to team members and showing respect for those involved
- The importance of providing constructive suggestions on how importance can be improved
- The importance of giving those involved the opportunity to provide suggestions on how to improve their work

## Unit 10 Use information to take critical decisions

### Unit Summary

#### Overview

This unit is about using information so that you can take critical decisions effectively. It covers obtaining relevant information, analysing this information, and taking decisions which are critical to your organisation's performance. It also covers advising and informing other people.

This unit is for you if you:

- have operational responsibility for substantial programmes and resources *or* strategic responsibility for the development of the organisation *or* both
- have a broad span of control
- proactively identify and implement change and quality improvements
- negotiate budgets and contracts, and
- lead high level meetings

This unit contains four elements

- 10.1 *Obtain the information needed to take critical decisions*
- 10.2 *Analyse information for decision making*
- 10.3 *Take critical decisions*
- 10.4 *Advise and inform others*

To *obtain the information needed to take critical decisions*, you need to find reliable and appropriate sources of information and select methods of gathering information which are efficient and effective. You need to obtain information which is accurate and relevant, and find ways of dealing with insufficient, contradictory or ambiguous information.

To *analyse information for decision making*, you need to identify the objectives of your analysis and select appropriate information to achieve these objectives. You need to select and use effective methods of analysis, identify any patterns or trends which emerge from the information and draw conclusions which are supported by good evidence. Finally you need to present your analysis and conclusions in a balanced way.

To *take critical decisions*, you need to ensure your decisions are based on sufficient, valid and reliable information and that they are consistent with your organisation's values, policies, guidelines and procedures. You need to make sure your decisions can be justified on the basis of the available information and analysis. Finally, you need to take decisions in time for appropriate action to be taken and communicate your decisions to those who need to know.

To *advise and inform others*, you need to identify what their information needs are, provide that information in an appropriate and effective way, and support your advice with sound evidence. You need to check the recipients' understanding of the information and advice you have provided, and observe rules and guidelines on confidentiality.

*This unit belongs to the Institute of Management suite of awards (D6).*

## Unit 10 Use information to take critical decisions

### Element 10.1 Obtain the information needed to take critical decisions

#### Performance Criteria

*You must ensure that:*

- a) you identify the *information* you need to make the required *decisions*
- b) the *sources* from which you gather *information* are reliable and sufficiently wide-ranging to meet your *information* needs
- c) your *methods of obtaining information* are reliable, effective and make efficient use of resources
- d) your *methods of obtaining information* are consistent with organisational values, policies and legal requirements
- e) the *information* you obtain is accurate, relevant and sufficient to allow you to take *decisions*
- f) where *information* is inadequate, contradictory or ambiguous, you take prompt and effective action to deal with this

#### Knowledge Requirements

*You need to know and understand:*

##### Analytical Techniques

- how to identify the information you need to take critical decisions effectively
- how to judge the accuracy, relevance and sufficiency of information you need to take decisions in different contexts
- how to identify information which may be contradictory, ambiguous or inadequate and how to deal with these problems

##### Information Handling

- the importance of information management to the team and to organisational effectiveness and your role and responsibilities in relation to this
- the types of qualitative and quantitative information which are essential to your role and responsibilities, and how to identify these
- the range of sources of information which are available to you and how to ensure that these are capable of meeting current and likely future information requirements
- how to identify new sources of information which may be required
- the range of methods of gathering and checking the validity of such information and their advantages and disadvantages

##### Organisational Context

- the organisational values and policies and the legal requirements which have a bearing on the collection of information and how to interpret these

## Unit 10 Use information to take critical decisions

### Element 10.2 Analyse information for decision making

#### Performance Criteria

*You must ensure that:*

- a) you identify objectives for your **analysis** which are clear and consistent with the **decisions** you need to make
- b) you select **information** which is accurate, relevant to the objectives and sufficient to arrive at reliable **decisions**
- c) you use methods of **analysis** which are suitable to achieve the objectives
- d) your **analysis** of the **information** correctly identifies patterns and trends significant to the **decisions** you need to take
- e) you develop clear conclusions which you support with reasoned arguments and appropriate evidence
- f) in presenting the results of your **analysis**, you differentiate clearly between fact and opinion
- g) your records of your **analysis** are sufficient to show the assumptions and **decisions** made at each stage

#### Knowledge Requirements

*You need to know and understand:*

##### Analytical Techniques

- different approaches to, methods of, analysing information and how to select methods appropriate to decisions which you have to make
- how to analyse information to identify patterns and trends
- how to draw conclusions on the basis of analysing information
- the difference between fact and opinion – how to identify these and present them accordingly

##### Communication

- how to develop and present a reasoned logical case based on the outcomes of an analysis

##### Information Handling

- the importance of the effective analysis of information and your role and responsibility in relation to this
- types of information, both qualitative and quantitative, which you need to analyse
- how to select information relevant to the decisions you need to make and ensure such information is accurate and relevant
- the importance of record-keeping to the analysis of information and how such records should be kept and used

## Unit 10 Use information to take critical decisions

### Element 10.3 Take critical decisions

#### Performance Criteria

*You must ensure that:*

- a) your **decisions** are based on sufficient, valid and reliable **information** and analysis
- b) your **decisions** are consistent with organisational values, policies, guidelines and procedures
- c) you obtain advice from **relevant people** if there is insufficient **information** or your **decisions** conflict with organisational values, policies, guidelines and procedures
- d) you take **decisions** in time for appropriate action to be taken
- e) you communicate your **decisions** to those who need to know

#### Knowledge Requirements

*You need to know and understand:*

##### Analytical Techniques

- how to decide when you have sufficient, valid and reliable information to be able to take a decision
- how to test the validity and reliability of information
- how to check that your decisions are consistent with information available and your analysis
- how to justify your decisions

##### Communication

- the people who need to be informed about your decisions and how to ensure this happens

##### Organisational Context

- relevant organisational values, policies, guidelines and procedures
- people from whom to seek advice if you have insufficient information or if there is a conflict
- the actions which need to be taken as a result of the decision and when these actions need to be taken

## Unit 10 Use information to take critical decisions

### Element 10.4 Advise and inform others

#### Performance Criteria

*You must ensure that:*

- a) you research the ***advice and information*** needs of your ***recipients*** in ways which are appropriate and sufficient and take account of your ***organisational constraints***
- b) you provide ***advice and information*** at a time and place and in a ***form*** and manner appropriate to the needs of your recipients
- c) the ***information*** you provide is accurate, current, relevant and sufficient
- d) your ***advice*** is consistent with organisational policy, procedures and ***constraints***
- e) your ***advice*** is supported by reasoned arguments and appropriate evidence
- f) you confirm your ***recipients'*** understanding of the ***advice and information*** you have given
- g) you maintain confidentiality according to organisational and legal requirements
- h) you use feedback from ***recipients*** to improve the way you provide ***advice and information***

#### Knowledge Requirements

*You need to know and understand:*

##### Communication

- how to communicate advice and information effectively both through speaking and in writing
- how to develop and present a reasoned case when providing advice to others
- the importance of confirming the recipient's understanding of information and advice provided and how to do this
- the importance of providing advice and information and your role and responsibilities in relation to this
- the types of advice and information which people may require
- how to identify information needs
- the situations in which it is appropriate to act on one's own initiative in giving information and advice
- the importance of seeking feedback on the quality and relevance of advice and information you provide and how to encourage such feedback

##### Information Handling

- the importance of checking the validity of advice and information provided to others
- how to ensure the accuracy, currency, sufficiency and relevance of advice and information
- the principles of confidentiality when handling information and advice – what types of information and advice may be provided to what people

##### Organisational Context

- organisational policies, procedures and resource constraints which may affect advice given to others

**Appendix A – Glossary of Terms**

	<b>Sites</b>	
	<p>These National Occupational Standards cover all sites involved in the extraction, processing and storage of rocks, minerals and mineral products. These have been categorised into 9 groups [see below]. Awarding Bodies are recommended to endorse candidates' certificates on the reverse with the appropriate category below from which the majority candidate's evidence has been drawn. For the purpose of these National Occupational Standards, the groups are defined as follows:</p>	
1	<b>Quarry – Hard Rock</b>	A quarry is as defined within the Quarry Regulations 1999. A hard rock quarry is one where the use of explosives is essential for extraction purposes.
2	<b>Quarry – Non-blasted Rock</b>	Quarries where the use of explosive is not essential. This includes quarries to extract sands, gravels, clays, and all other rocks and minerals with the exception of coal.
3	<b>Processing Operations within a quarry</b>	<p>Processing operations covers any operation required to add value to the extracted rock or mineral. These operations can be considered as being in 10 groups:</p> <p>(a) Crushing/Screening/washing; (b) Drying; (c) Concrete/Mortar production; (d) Asphalt/coated materials production; (e) density/fluid separation (f) chemical separation; (g) forming; (h) heat treatment (i) packaging (j) splitting, sawing, shaping.</p> <p>The crushing/screening/washing would include dedicated plant established for the recycling of materials such as construction and demolition waste, slag, and glass to produce aggregates.</p>
4	<b>Processing Operations outside a quarry</b>	As 3 above but carried out at dedicated plant/site/s not covered by the Quarries Regulations 1999.
5	<b>Open-cast Coal Mine</b>	A surface working area for the extraction of coal.
6	<b>Deep Mine – Coal</b>	An underground area for the extraction of coal accessed by tunnels and/or shafts including its surface activities.
7	<b>Deep Mine – Other than Coal</b>	An underground area for the extraction of any rock or mineral with the exception of coal accessed by tunnels and/or shafts including its surface activities.
8	<b>Wharf</b>	A site established for the transfer of materials to or from water borne transport which may also include storage areas for those materials.
9	<b>Depot</b>	A site established for the transfer of materials to or from land-based transport which may also include storage areas for those materials.
	<b>Contaminated Ground</b>	An area within or around the site affected by any substance which could have the potential of having an adverse effect on that area of ground.