

# occupational health auditing

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## ABSTRACT

This document describes an approach to occupational health auditing, intended to meet the needs of CONCAWE member companies. It includes examples of typical questions and model answers on which an appropriate questionnaire for any location or activity may be based. It incorporates the slightly revised material of report 99/58 (Occupational health auditing (1): occupational hygiene) and has been extended to include occupational medicine elements. This report replaces report 99/58.

## KEYWORDS

Occupational health, occupational hygiene, industrial hygiene, occupational medicine, audit, health management system.

## INTERNET

This report is available as an Adobe pdf file on the CONCAWE website ([www.concaawe.org](http://www.concaawe.org)).

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## 1. INTRODUCTION

Audits are an essential feature of any effective management system but need to be carefully planned in order to derive maximum benefit from the auditing process.

This document is an update of CONCAWE's report no. 99/58 "Occupational health auditing (1): Occupational Hygiene" [1]. The update was prepared to incorporate the full scope of occupational health and hygiene in a single occupational health auditing guideline and replaces report 99/58.

Similarly to the original document, this guide makes use of suggested questions and model answers, derived from best practice in member companies, providing a clear indication of expected performance standards. The questions and answers have been designed in such a way that appropriate scores can be assigned to each question. This is particularly beneficial when auditing is performed by less experienced auditors. Furthermore, since a more consistent assessment is likely to result, it becomes possible to compare performance at different locations and monitor the improvement or deterioration over a period of time.

This document is based in part on previous, similar guidance prepared by other industry organisations [2,3], but has been considerably enhanced through discussions in CONCAWE's Industrial Hygiene and Medical Subgroups.

## 2. OCCUPATIONAL HEALTH MANAGEMENT

The prime objective of occupational health is to protect the health of employees from adverse effects of work activities. Effective occupational health practice may also contribute to improving general health and well-being of the workforce, recognising that many factors such as lifestyle and the effects of domestic and leisure environments lie outside the control of the employer.

A systematic approach to the management of health risks associated with work activities in the oil industry is described in an earlier CONCAWE report [4]. It lists features which should be included in any effective programme grouped into broad categories, covering:

- Health risk assessment of work activities
- The assessment of the individual worker's health and fitness for work
- Emergency preparedness and response

Further details on occupational health management are provided in section 5.7 of this report.

Specific guidance for occupational health risk management during large maintenance projects is also available in a separate CONCAWE report [5].

### 3. OCCUPATIONAL HEALTH AUDITS

Company management requires assurance that appropriate controls are in place and are in use and that the desired standards of performance are being achieved. Such standards may reflect legal requirements or be based on industry, company or other standards as appropriate. Audits should not be used to communicate or establish standards, the aim of any audit being to check whether pre-determined standards are being achieved and, if not, to provide a basis for improvement. Audit questions should include reference to the applicable standard whether it be national legislation, industry standard or company policy.

Audits vary in scope and content and may be internal (carried out by persons from the location being audited) or external (carried out by corporate staff or third parties).

Audit findings may be expressed qualitatively, offering subjective judgements, or quantitatively, by comparison of performance with predetermined norms and scored numerically. All audits have value in highlighting strengths as well as identifying any shortcomings and thus helping to determine priorities for action.

Occupational health audits are no different in principle from audits of any other activity. Where such audits can be linked, they should be, with advantages to all concerned. For example, health audits can be linked to safety audits, or integrated into health, safety and environmental audits, or carried out as part of quality management audits. Any scope for synergy should be exploited where possible.

#### 4. AUDIT PROGRAMME

All aspects of the planning, conduct and follow-up of the audit programme should be agreed in advance between location management and the audit team.

The scope and frequency of audits should reflect the nature and scale of activities and their associated risks to health, perhaps every 3-5 years for a refinery or blending plant, less frequently for a terminal, depot or retail service station. The scope of individual audits and the depth of investigation should be agreed with local management, perhaps using the examples given (**Appendix 1**) and selecting appropriate topics and questions.

It should be remembered that both the questions (**Appendix 1**) and the model answers (**Appendix 2**) are for guidance only and may require modification or supplementing to meet the needs of any given organisation or location. For example, in order to provide assurance of compliance with specific national or company standards, the examples given may need to be supplemented with additional questions and the corresponding standard cited in the model answers.

## **5. AUDIT PROCEDURES**

Audits should follow a standard procedure beginning with an agreed definition of scope and objectives and ending with a formal report.

During the audit it is important to check that proper document control procedures are followed (c.f. ISO 9000) and that suitable records are maintained in accordance with agreed local procedures and relevant national standards. Such records would include those for health risk assessments, internal inspections, testing of ventilation systems, exposure monitoring and employee training. It should be noted that some of the occupational health record retention requirements are very demanding with respect to the minimum time period which may be 40 years or more.

In assessing specific procedures, the technique of vertical auditing can be applied. This involves tracing the steps of a procedure from beginning to end, perhaps selecting a specific hazardous substance or task involving exposure to a hazardous substance and checking that an adequate assessment of the risks has been carried out and appropriate control measures implemented. The check should include arrangements for workplace monitoring, the maintenance, inspection and testing of control measures, the provision of information, instruction and training and record keeping. Where applicable, checks should be made on linkages with health surveillance and personal exposure monitoring.

Horizontal auditing can also be useful, for example comparing assessment procedures in several locations.

### **5.1. INITIATION OF AUDIT**

Following agreement in principle to an audit, the auditor(s) should contact the auditee to propose dates, agree objectives and request relevant documentation.

The auditee should be asked to nominate a contact at the location through whom enquiries concerning the audit programme may be directed. This contact, who ideally is a health and safety specialist, should also accompany the audit team during site visit(s) to act as a guide, organising interviews and handling administrative details. Suitable facilities (preferably in a separate office with telephone and ready access to photocopier, fax, etc.) need to be provided for use by the auditor(s) during their visit.

### **5.2. PREPARATION**

All audits require some preparation. Internal self-audits usually need the least as their scope is more limited. For a comprehensive occupational health audit, it is essential that both auditors and location management prepare for the audit well in advance.

Auditors must be provided with copies of the site health and safety policy and documented arrangements for its implementation, enabling them to decide who should be interviewed and any other material required for verification. If a previous audit has been carried out, then its conclusions, recommendations and progress in their implementation should be reviewed prior to the audit. Particular attention should be given to previously identified deficiencies.

Other documents such as site organisation charts and the results of any recent exposure monitoring or health surveillance can often be helpful in planning the audit.

### **5.3. AUDIT TEAM**

Auditors must understand their task and be competent to carry it out. They need the status, experience and knowledge appropriate to the audit concerned, including the skill and judgement necessary to observe and evaluate performance against relevant standards and thus identify any particular achievements or deficiencies.

Depending on the location and the nature of its activities, the audit team should consist of at least two members, one of whom should be experienced in the use of the auditing system to be utilised. For a comprehensive occupational health audit, one member should ideally be appropriately qualified and have experience in the practice of occupational health.

### **5.4. MANAGEMENT INTERVIEWS**

Audit visits usually begin with interviews with senior management and representative line managers and supervisors in order to assess their understanding of company occupational health policy and arrangements for its implementation. Are they aware of the relevant health hazards, associated risks and means of control and what, if any, is their individual involvement in occupational health programmes? The interviews should assess their level of commitment, whether company policies and local procedures are being followed and agreed standards achieved.

Management should be able to demonstrate a satisfactory awareness of appropriate national legislation and standards relating to health protection and the requirements for compliance. Management should also be aware of pending regulatory developments and their likely impact.

Documentation should be available to describe the company approach to the management of risks to health at work, ideally one compatible with ISO 9000 and embodying the elements of plan, implement, check and review of performance.

The auditors need to determine whether sufficient commitment and resources are being directed to health protection activities and whether these are appropriate to the location in question, bearing in mind the nature of the hazards and the likely degree of exposure. The availability of competent occupational health advice should be checked.

### **5.5. EMPLOYEE INTERVIEWS**

Selected employees and employee representatives should be interviewed to check whether written procedures are followed in practice, to assess their awareness about relevant health hazards and ascertain their understanding of their role in the protection of health. Comparison of the findings with those from management interviews will indicate the effectiveness of internal communication.

## **5.6. SITE INSPECTIONS**

An indication of compliance with procedures can be gained from planned visits to the work areas. Observation of work practices and questioning as to whether employees and contractors are aware of procedures will usually reveal any deficiencies.

Visits should include inspections of selected locations and a review of the use and adequacy of engineering control measures, personal protective equipment, work permit systems and other health and safety procedures. In addition, auditors should note the standards of labelling and the signposting of hazardous areas. Provision for emergencies and availability of safety data sheets should also be checked.

## **5.7. EVALUATION OF PERFORMANCE**

In the case of simple qualitative audits, it is often helpful to have a printed check list of questions covering key areas, with space for responses of yes or no (e.g. have all ventilation systems been inspected and serviced within the maximum recommended intervals?). The responses to these questions are useful in identifying any programme deficiencies which require action, as well as indicating areas of strength in the health protection programme.

More comprehensive quantitative audits can also use written questionnaires, sometimes coupled to a scoring system for key elements of the occupational hygiene programme. Such scoring systems enable comparisons to be made more easily with previous audits, highlighting the extent of any improvements or deterioration in performance.

In a comprehensive occupational health audit, it is suggested that the performance of the location should be evaluated against the key elements of any occupational health management system, usually reflected by the following headings:

- 1) Organisation and Management
- 2) Individual Health and Fitness for Work
- 3) Assessment of Health Risks
- 4) Control of Health Risks
- 5) Monitoring of Performance
- 6) Non Routine Situations
- 7) Training and Awareness
- 8) Documentation, Data Integrity and Record Keeping
- 9) Audit and Review

**Appendix 1**, which provides a checklist of questions for each of these headings, is an example developed to meet the expected requirements of most CONCAWE member companies. Depending on the nature and scale of the activities at the location under review, some or all of these topics may be selected for audit.

For each question, **Appendix 2** provides four model answers against which performance may be compared and a score assigned. The following scoring system is recommended:

Score 0 - Immediate action needed

Score 1 - Major deficiencies

Score 2 - Minor deficiencies

Score 3 - Fully compliant

Scores may be added to give totals for each topic, comparison of topic scores giving an indication of where emphasis has been placed and where any remedial action is required.

The use of a scoring system also enables the setting of minimum acceptable results as targets to be achieved in subsequent audits. Comparison of audit scores for different company locations may be used to demonstrate what is achievable, as may benchmarking with third party companies engaged in similar activities.

Where questions are considered to be inapplicable to the location, potential scores may need adjustment to avoid any bias in the overall results.

Health promotion activities also form an important element of a comprehensive occupational health management system. Due to the diverging approaches in use in CONCAWE member companies, no typical questions and model answers were included in this report. Audit teams, however, may wish to develop their own set of questions and model answers in line with their company's preferred approach to health promotion.

## **6. REPORTING PROCEDURE AND FOLLOW UP**

### **6.1. INITIAL FEEDBACK**

At the conclusion of the audit visit and before leaving the site, it is good practice to provide initial feedback, including any recommendations for improvement and priorities for action. This is best achieved by the audit team presenting its preliminary findings in an exit meeting with relevant location staff.

For most audits, a summary of the audit team's findings and recommendations would be appropriate but in the case of a quantitative audit, a draft score or rating for key elements should also be given. In both cases, the feedback should give an indication of strengths and weaknesses in the management of occupational health risks at the location.

### **6.2. FORMAL REPORT**

Although the form of audit reports is likely to vary depending on the policy and procedures in individual companies, a written draft should be submitted for the auditee to check factual accuracy and agree priorities and a possible timescale for implementation of any recommendations. Some company procedures may involve legal review of such draft reports.

After taking into account comments received, a final report is prepared to document the findings, including where appropriate any numerical scores, comments, observations, conclusions and recommendations for each element of the audit. The report should give an accurate reflection of the location performance, have the support and confidence of senior location management and contain no elements not previously discussed.

### **6.3. REPORT RECOMMENDATIONS**

After issue of the final report, discussion of the audit findings between management and workforce should lead to the development of an agreed action plan. It may be appropriate for the auditor(s) to take part in such discussions and perhaps to provide assistance for implementing the action items.

### **6.4. ACTION PLAN**

An effective system for tracking progress in implementation of agreed action should be in place.

When all the audit recommendations have been addressed and appropriate action completed, the audit file should be closed. Audit documentation should be archived in accordance with company policy for retention of records.

## 7. SUGGESTED AUDIT TIMETABLE

A timetable similar to that shown below has been found to be practicable in many CONCAWE member companies:

|                               |                                                                                                                                        |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 6 months prior to audit visit | Initiation with suggested audit dates.<br>Audit dates agreed by site management and audit team.                                        |
| 3 months prior to audit visit | Request to site manager for advance information.                                                                                       |
| 1 month prior to audit visit  | Requested information available to audit team.<br>Audit programme finalised and, if necessary, preliminary familiarisation visit made. |
| Audit visit                   | Audit data gathering and preliminary exit report by audit team to site manager.                                                        |
| Within 1 month of visit       | Draft report presented to site manager.                                                                                                |
| Within 2 months of visit      | Site manager's comments on draft report.                                                                                               |
| Within 3 months of visit      | Final report agreed and issued.                                                                                                        |

## **8. REFERENCES**

1. CONCAWE (1999) Occupational health auditing (1): occupational hygiene. Report No. 99/58. Brussels: CONCAWE
2. IP (1993) Code of practice for occupational hygiene audits. London: Institute of Petroleum
3. CIA (1991) Guidance on safety, occupational health and environmental protection auditing. London: Chemical Industries Association
4. CONCAWE (1989) A management guide to occupational health programmes in the oil industry. Report No. 89/52. Brussels: CONCAWE
5. CONCAWE (2000) Management of occupational health risks during refinery turnarounds. Report No. 00/52. Brussels: CONCAWE

## **APPENDIX 1**

### **CHECKLIST OF TYPICAL QUESTIONS**

#### **1. ORGANISATION AND MANAGEMENT**

##### **1.1 Policy Statement**

- 1.1.1 Is there a written site policy that includes occupational health (OH) and is it up to date and signed by a senior manager?
- 1.1.2 Is the site management team aware of the health-related requirements for the site?
- 1.1.3 Is this policy known and well understood by management, line supervision, workers and OH staff?

##### **1.2 Implementation**

- 1.2.1 Are company guidelines available, or codes of practice (COPs) identified as standards for implementation of health protection aspects of company policy?
- 1.2.2 Are responsibilities assigned for implementation of site health policy and associated guidelines or codes of practice (COPs)?
- 1.2.3 Is there a management-endorsed plan for the implementation and maintenance of the site OH programme?
- 1.2.4 Is performance of the OH function, programmes and personnel regularly reviewed by management?
- 1.2.5 Are contractors provided with health protection equivalent to that provided for company employees?

##### **1.3 Resources**

- 1.3.1 Are there adequate numbers of competent personnel to carry out the OH programme?
- 1.3.2 Does OH personnel have required professional education?
- 1.3.3 Does OH personnel undergo required professional refresher training?

##### **1.4 Communications**

- 1.4.1 Is there a system in place to communicate health issues to all employees, contractors and other potentially affected groups?
- 1.4.2 Do the persons responsible for providing occupational health advice and services have effective lines of communication?
- 1.4.3 Is there a site Health and Safety Committee (H&SC) or equivalent?
- 1.4.4 Is there provision for informing management of regulatory and other relevant developments in OH?

##### **1.5 Legal requirements**

- 1.5.1 Are the national laws and guidelines with regard to occupational health in a written form available and up to date?
- 1.5.2 Are the national laws and guidelines with regard to occupational health implemented?
- 1.5.3 Is there a procedure for notification of work related risks and occupational illnesses to the authorities?

- 1.5.4 Is there provision for informing management of regulatory and other relevant developments in OH?

## **2. INDIVIDUAL HEALTH AND FITNESS FOR WORK**

### **2.1 Pre-placement/pre-employment medical examination**

- 2.1.1 Is there a written site procedure which prescribes medical standards and examinations before entering jobs with specific medical fitness requirements?
- 2.1.2 Is the content of these medical examinations well defined and to all applicable?
- 2.1.3 Are susceptible individuals effectively protected? Is there a process for adapting the workplace for people with disability?

### **2.2 Health surveillance**

- 2.2.1 Has the need for specific health surveillance based on Health Risk Assessment been defined?
- 2.2.2 Are the results and need for health surveillance periodically evaluated?

### **2.3. Post-injury and post-illness fitness for work**

- 2.3.1 Is a written document on procedures regarding fitness for work after illness and accidents available?
- 2.3.2 Is there a regular medical follow up of cases of occupational accidents and/or illness with respect to their fitness for work after rehab?
- 2.3.3 Is the notification of these cases by management or HR to medical personnel guaranteed by a prescriptive written procedure?

### **2.4 Re-evaluation of fitness for work**

- 2.4.1 Is there a system to re-evaluate fitness for work?
- 2.4.2 Is there a system to re-assign persons when medically unfit for their present job?

### **2.5 Report on fitness to work to the management**

- 2.5.1 Is fitness to work reported to the management with respect to medical confidentiality?

## **3. ASSESSMENT OF HEALTH RISKS**

### **3.1 Hazard identification**

- 3.1.1 Is there an inventory of all hazardous substances present on-site, along with a practice/procedure for keeping the inventory current?
- 3.1.2 Are current safety data sheets (SDSs) or other hazard data readily available for the substances on the inventory?
- 3.1.3 Do procurement/purchasing procedures provide for review of hazards before ordering?
- 3.1.4 Are other (i.e. physical/biological agents and ergonomic factors) health hazards (that are relevant to the site) identified and listed?
- 3.1.5 Do capital projects, facility modifications and new designs include a procedure for competent review of associated health risks?
- 3.1.6 Do procedures provide for review and dissemination of information on significant "new" health hazards that are not familiar to the site/personnel?

**3.2 Health Risk Assessment (HRA)**

- 3.2.1 Is there a procedure in place to assess risks arising from exposure to identified hazards in the workplace?
- 3.2.2 Does the HRA procedure meet accepted criteria?
- 3.2.3 Are HRA conducted for tasks as well as for full shift exposures?
- 3.2.4 Does the HRA programme identify the need for health surveillance, including biological monitoring?
- 3.2.5 Are monitoring data summarised or analysed statistically for comparison to relevant regulatory standards, i.e., 8-hour time-weighted average and short-term (15-minute) exposure limits, as appropriate?
- 3.2.6 Does the HRA process identify exposures/ risks, tasks or work groups in terms of low, medium or high in order to prioritise actions for follow-up exposure monitoring or improved control?
- 3.2.7 Are HRA records and documentation adequate?

**3.3 Communications**

- 3.3.1 Have the results of HRAs been properly communicated to management, the workforce and worker representatives as appropriate?
- 3.3.2 Is medical staff fully aware of the results of HRAs and part of the communication process?
- 3.3.3 Is there an effective procedure for communicating the results of HRAs to all persons at risk?
- 3.3.4 Is effectiveness of communication assessed?
- 3.3.5 Are issues raised by workers effectively and in a duly timeframe addressed?

**3.4 Management of identified risks**

- 3.4.1 Are the results of HRAs integrated into overall site management processes?
- 3.4.2 Is provision made for the reassessment of health risks?

**4. CONTROL OF HEALTH RISKS****4.1 General**

- 4.1.1 Is the generally-accepted “hierarchy of controls” applied (i.e. emphasis on engineering control of hazardous exposures, followed by procedural controls, then personal protection)?

**4.2 Engineering Control**

- 4.2.1 Have engineering control options been installed for significant health risks?
- 4.2.2 Where fitted, are engineering controls installed according to accepted engineering standards?
- 4.2.3 Where fitted, are engineering controls properly maintained?
- 4.2.4 Where fitted, are engineering controls checked and tested regularly?

**4.3 Procedural Control**

- 4.3.1 Are documented procedures available that address health hazards encountered during routine operations?
- 4.3.2 Are documented procedures available to address health hazards of non-routine operations, including turnarounds (TAs)?

4.3.3 Are health considerations included in Permit to Work (PTW) procedures?

#### **4.4 Personal Protective Equipment (PPE)**

4.4.1 Is there a formal/documented programme for the provision of PPE that is needed for protection against health hazards?

4.4.2 Are personnel, facilities and resources available for the selection, use and maintenance of PPE?

4.4.3 Are employees given suitable information, instruction and training in PPE use and maintenance, with regular updates and fully documented?

### **5. MONITORING OF PERFORMANCE**

#### **5.1 Performance indicators**

5.1.1 Are performance indicators identified and endorsed by management for tracking the effectiveness of the occupational health programme?

5.1.2 Do performance indicators provide an insight into the effectiveness of site health protection programmes?

#### **5.2 Incident reporting and investigation**

5.2.1 Does a written report by the occupational physician to the management take place with respect to the health status of the employees - as requested or restricted by law - on a regular basis? Only applicable if not limited by national law due to confidentiality.

5.2.2 Are health related incidents (occupational illnesses, temporary/ permanent disability, occupational exposure limit exceedences, complaints, fatalities etc.) that are potentially related to workplace exposures identified, in compliance with local law reported to management and investigated?

5.2.3 Are criteria for the classification of health-related incidents established by the OH function and endorsed by management?

### **6. NON ROUTINE SITUATIONS**

#### **6.1 Emergency Response Planning**

6.1.1 Is there an emergency response plan?

6.1.2 Does the emergency response plan include an effective organisational structure that includes OH resources in a clearly defined written form?

6.1.3 Are neighbouring industry and community emergency response organisations included in the emergency response plan?

6.1.4 Is emergency hazard information available for all hazardous substances?

#### **6.2 Training for Emergencies**

6.2.1 Are employees trained in the procedures to be followed in an emergency with respect to OH aspects?

#### **6.3 Turnarounds and Major Maintenance**

6.3.1 Are health risks considered during planning/procedures development for turnarounds (TA) and major maintenance and OH staff fully involved in planning/procedures development?

6.3.2 Are the potential exposures among TA and maintenance workers monitored and actively assessed during the TA or major maintenance activity?

**6.4. Breakdown**

- 6.4.1 Are written procedures/practices in place to control health risks during breakdown and unplanned shutdowns?

**7. TRAINING AND AWARENESS****7.1 Hazard Communication**

- 7.1.1 Are Safety Data Sheets (SDSs) -where legally requested- or similar information, readily available to potentially affected workers for all hazardous substances and preparations to which they may be exposed (including those substances that are generated by a process such as welding)?
- 7.1.2 Are SDSs regularly updated and a responsible person defined?
- 7.1.3 Has medical staff easy access to SDSs and is a procedure well established?
- 7.1.4 Are appropriate signs and hazard warnings erected in work areas (e.g., noise and radiation as well as hazardous materials)?
- 7.1.5 Are containers, pipes and vessels properly labelled as to their contents?
- 7.1.6 Are the results of HRAs shared with potentially affected workers?

**7.2 Training**

- 7.2.1 Is appropriate training on hazard identification, assessment and control, and their OH responsibilities given to managers, supervisors, employees and contractors?
- 7.2.2 Is health-related training an integral part of the site personnel/training system(s)?
- 7.2.3 Are basic concepts of health protection included in the induction courses for new employees, and are employees trained on health-related aspects of new jobs/transfers?
- 7.2.4 Is specific instruction and training given in the use of exposure control measures and procedures for reporting any observed deterioration in their performance?
- 7.2.5 Is periodic/refresher training provided to all employees?

**7.3 Community Awareness**

- 7.3.1 Have members of the community been advised as to the nature of the hazards/risks to the local environment and community that have been identified from the development of emergency response scenarios?
- 7.3.2 Do site policies properly address potential health impacts on the community or local environment?

**8. DOCUMENTATION, DATA INTEGRITY AND RECORDKEEPING****8.1 Documentation**

- 8.1.1 Are health-related practices/procedures integrated into standard operating procedures?
- 8.1.2 Are criteria, components and responsibilities documented for key stand-alone programmes that are applicable to the site/facility, such as:
- hearing conservation
  - respiratory protection
  - other PPE
  - radiation safety
  - exposure assessment
  - exposure monitoring?

- 8.1.3 Is documentation of health-related practices and procedures part of the site system(s) for documentation and updating of standard operating procedures?

## **8.2 Data Integrity**

- 8.2.1 Are samples taken or measurements made using validated methods and reliable instrumentation?
- 8.2.2 Is all sampling equipment properly maintained, tested and calibrated?
- 8.2.3 Are all samples analysed using validated methods?
- 8.2.4 Does the analytical laboratory have an adequate quality control procedure, specific to the occupational hygiene analyses?
- 8.2.5 Does the laboratory participate in an external-quality assurance programme?
- 8.2.6 Is data integrity a key parameter in the management/reporting of the OH programme/ activity?

## **8.3 Recordkeeping**

- 8.3.1 Are records kept of key OH-related data, including the following (as applicable):
- HRAs
  - biological monitoring
  - personal exposure monitoring
  - workforce training
  - analytical results
  - lab QA/QC data
  - equipment calibration
  - training/fitting of PPE
  - occupational illnesses
  - checks of controls (eg, ventilation)?
- 8.3.2 Does this policy also include the national legal requirements on medical confidentiality and is in line with these requirements?
- 8.3.3 Are all medical confidential records (paper and electronic) securely locked up?

## **9. AUDIT AND REVIEW**

### **9.1 Inspections and Audits**

- 9.1.1 Is there an effective internal self-inspection system in operation, e.g. planned health walk-throughs and is OH staff regularly included?
- 9.1.2 Do corporate/formal audit systems/protocols address health-related programmes/ criteria?
- 9.1.3 Is there an effective system in place for tracking implementation of audit recommendations and closing completed action?

## APPENDIX 2 - TYPICAL QUESTIONS AND MODEL ANSWERS

### 1. ORGANISATION AND MANAGEMENT

| No.        | Question                                                                                                                                                 | Score 0 : Immediate action required                 | Score 1 : Major deficiencies                                                                                                                                                                                          | Score 2 : Minor deficiencies                                                                                                                     | Score 3 : Fully compliant                                                                                                                                                                      |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1.1</b> | <b>Policy Statement</b>                                                                                                                                  |                                                     |                                                                                                                                                                                                                       |                                                                                                                                                  |                                                                                                                                                                                                |
| 1.1.1      | Is there a written site policy that includes occupational health (OH) and is it up to date and signed by a senior manager?                               | No written, management-endorsed policy exists.      | Written/endorsed policy exists but is incomplete, out-of-date or not endorsed by current site management.                                                                                                             | Written/endorsed policy exists that defines appropriate objectives/priorities for worker/community health.                                       | Written/endorsed policy is effectively communicated to potentially affected groups (employees, contractors, community) and actively implemented by site management.                            |
| 1.1.2      | Is the site management team aware of the health-related requirements for the site?                                                                       | There is no management awareness.                   | There is some management awareness of the general health-related requirements, but not of the specifics that impact their responsibilities.                                                                           | Management is aware of the health-related requirements, and some of the specifics, but is not actively involved in reinforcing their commitment. | Management is fully aware of their health-related responsibilities and reinforces their commitment during periodic operating site visits or other activities.                                  |
| 1.1.3      | Is this policy known and well understood by management, line supervision, workers and OH staff?                                                          | Persons concerned have no knowledge of this policy. | Knowledge of this policy exists but not well understood.                                                                                                                                                              | Knowledge of policy and policy well understood by and large.                                                                                     | Commitment of all employees demonstrated.                                                                                                                                                      |
| <b>1.2</b> | <b>Implementation</b>                                                                                                                                    |                                                     |                                                                                                                                                                                                                       |                                                                                                                                                  |                                                                                                                                                                                                |
| 1.2.1      | Are company guidelines available, or codes of practice (COPs) identified as standards for implementation of health protection aspects of company policy? | No guidelines available nor COPs identified.        | Guidelines/COPs are available/identified but are not sufficient to fully meet local regulations or health protection needs of affected groups.                                                                        | Guidelines/COPs are available/identified, appropriate to the needs of affected groups but are not endorsed by management as site standards.      | Comprehensive site standards/guidelines are identified and endorsed by management.                                                                                                             |
| 1.2.2      | Are responsibilities assigned for implementation of site health policy and associated guidelines or codes of practice (COPs)?                            | Responsibilities are not assigned.                  | Not all with assigned responsibilities are fully aware of the requirements <u>OR</u> the individuals are not fully able to carry out responsibilities for reasons of training, competence or organisational position. | Responsibilities are generally assigned to competent/capable individuals, except for a few minor exceptions.                                     | Responsibilities are assigned/understood and guidelines/COPs or legal requirements are implemented. Requirements for periodic review of effectiveness and continuous improvement are in place. |

| No.        | Question                                                                                             | Score 0 : Immediate action required                                                                                                             | Score 1 : Major deficiencies                                                                                                                                      | Score 2 : Minor deficiencies                                                                                                                | Score 3 : Fully compliant                                                                                                                                                                                                      |
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| 1.2.3      | Is there a management-endorsed plan for the implementation and maintenance of the site OH programme? | No plan is available.                                                                                                                           | There is a plan with defined objectives, roles and responsibilities, but the plan is not endorsed by site management.                                             | A plan, endorsed by site management is available, but it is not effectively integrated with operations or related environment/safety plans. | An endorsed plan is available, and it is effectively integrated with operations and related environment/safety plans.                                                                                                          |
| 1.2.4      | Is performance of the OH function, programmes and personnel regularly reviewed by management?        | No OH function or programmes.                                                                                                                   | Performance of the OH function and programmes is not reviewed by management.                                                                                      | Performance is reviewed, but OH activities of personnel with part-time OH responsibilities is not given sufficient weight.                  | Health-related performance targets are set for all OH personnel and programmes. Progress is reviewed regularly by management.                                                                                                  |
| 1.2.5      | Are contractors provided with health protection equivalent to that provided for company employees?   | Site management is not formally involved in health protection for contractors' employees; the site health policy does not apply to contractors. | Contractors are specifically charged with the responsibility for protecting the health of their workers, and accept the responsibility.                           | Formal agreements exist outlining the company's and contractors' responsibilities concerning health protection for contractors' employees.  | Responsibilities are formally agreed; the company checks the contractors' performance against agreed criteria and feeds back observations about unsafe acts/observations.<br><i>Not applicable where legal barriers exist.</i> |
| <b>1.3</b> | <b>Resources</b>                                                                                     |                                                                                                                                                 |                                                                                                                                                                   |                                                                                                                                             |                                                                                                                                                                                                                                |
| 1.3.1      | Are there adequate numbers of competent personnel to carry out the OH programme?                     | No personnel with specific health-related responsibilities are identified.                                                                      | Personnel are identified, but the resources are inadequate in number, training, competency or organisational status to carry out the requirements of the OH plan. | There is ready access to an identified, competent resource to provide assistance as needed.                                                 | Local resources are appropriate to handle planned/identified OH requirements, plus those that might reasonably be expected to arise due to emergency or other unplanned event.                                                 |
| 1.3.2.     | Does OH personnel have required professional education?                                              | No professional education.                                                                                                                      | Not all OH personnel have professional OH education.                                                                                                              | Requirements for OH training well identified but not formally applied.                                                                      | Requirements have been fully identified and implemented.                                                                                                                                                                       |
| 1.3.3      | Does OH personnel undergo required professional refresher training?                                  | OH personnel does not undergo required professional refresher training.                                                                         | OH personnel undergoes required professional refresher training but not on a regular basis.                                                                       | OH personnel undergoes required professional refresher training but some gaps are identified.                                               | OH personnel undergoes required professional refresher training on a regular basis.                                                                                                                                            |

| No.                           | Question                                                                                                                     | Score 0 : Immediate action required                                                                                         | Score 1 : Major deficiencies                                                                                                 | Score 2 : Minor deficiencies                                                                                                  | Score 3 : Fully compliant                                                                                                                                                                     |
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| <b>1.4 Communications</b>     |                                                                                                                              |                                                                                                                             |                                                                                                                              |                                                                                                                               |                                                                                                                                                                                               |
| 1.4.1                         | Is there a system in place to communicate health issues to all employees, contractors and other potentially affected groups? | The health issues are not being communicated to any potentially affected groups.                                            | There is some two-way communication on health issues.                                                                        | There is structured two-way communication on health issues.                                                                   | There is a fully implemented programme on communication of health issues. Opportunities are provided for periodic discussions of OH issues, including company policy and implementation.      |
| 1.4.2                         | Do the persons responsible for providing occupational health advice and services have effective lines of communication?      | Some limited access to management and employees.                                                                            | Good rapport and effective informal communications with management or with employees/representatives.                        | Good rapport and effective informal communications with both management and employees/representatives.                        | Periodic formal meetings with management and informal discussions as needed; solid rapport and periodic meetings with employees/representatives.                                              |
| 1.4.3                         | Is there a site Health and Safety Committee (H&SC) or equivalent?                                                            | No formal H&SC.                                                                                                             | H&SC exists but seldom discusses OH matters.                                                                                 | H&SC periodically discusses OH matters.                                                                                       | OH staff or OH focal point is regular member of H&SC and/or regularly attends the meetings.                                                                                                   |
| 1.4.4                         | Is there provision for informing management of regulatory and other relevant developments in OH?                             | No provision.                                                                                                               | Information obtained on ad hoc basis and communicated sporadically.                                                          | Responsibility for identifying and communicating relevant information assigned to an identified individual.                   | Reporting of relevant developments in OH is a regular agenda item for periodic meetings with management and H&SC.                                                                             |
| <b>1.5 Legal requirements</b> |                                                                                                                              |                                                                                                                             |                                                                                                                              |                                                                                                                               |                                                                                                                                                                                               |
| 1.5.1                         | Are the national laws and guidelines with regard to occupational health in a written form available and up to date?          | The national laws and guidelines with regard to occupational health in a written form are not available and not up to date. | The national laws and guidelines with regard to occupational health in a written form are partly available / not up to date. | The national laws and guidelines with regard to occupational health in a written form are available and up to date.           | The national laws and guidelines with regard to occupational health in a written form are available and up to date.<br>A critical analysis of the requirements has been made with management. |
| 1.5.2                         | Are the national laws and guidelines with regard to occupational health implemented?                                         | The national laws and guidelines with regard to occupational health are not implemented.                                    | The national laws and guidelines with regard to occupational health are not fully implemented.                               | The national laws and guidelines with regard to occupational health are by and large implemented, some minor gaps identified. | The national laws and guidelines with regard to occupational health are fully implemented.<br>There is an implementation and review plan maintained throughout the organisation.              |

| No.   | Question                                                                                                   | Score 0 : Immediate action required                                                                                                                                                                          | Score 1 : Major deficiencies                                                                                                                                                                                                                                                                   | Score 2 : Minor deficiencies                                                                                | Score 3 : Fully compliant                                                                                                                                                                                                                    |
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| 1.5.3 | Is there a procedure for notification of work related risks and occupational illnesses to the authorities? | A written procedure regarding responsibility for legally required notification of work related health risks and occupational diseases to the authorities and informed consent from employees does not exist. | The reporting is carried out but there is no formal description of the procedure.<br>A written procedure regarding responsibility for legally required notification of work related health risks and occupational diseases to the authorities or informed consent from employees do not exist. | A procedure is available.                                                                                   | A written procedure regarding responsibility for legally required notification of work related health risks and occupational diseases to the authorities and informed consent from employees exist and is consistently applied and reviewed. |
| 1.5.4 | Is there provision for informing management of regulatory and other relevant developments in OH?           | No provision.                                                                                                                                                                                                | Information obtained on ad hoc basis and communicated sporadically.                                                                                                                                                                                                                            | Responsibility for identifying and communicating relevant information assigned to an identified individual. | Reporting of relevant developments in OH is a regular agenda item for periodic meetings with management and H&SC.                                                                                                                            |

## 2. INDIVIDUAL HEALTH AND FITNESS FOR WORK

| No.        | Question                                                                                                                                               | Score 0 : Immediate action required                                                       | Score 1 : Major deficiencies                                                                                                                           | Score 2 : Minor deficiencies                                                                                                                                                | Score 3 : Fully compliant                                                                                                                                                                                                                                                  |
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| <b>2.1</b> | <b>Pre-placement/pre-employment medical examination</b>                                                                                                |                                                                                           |                                                                                                                                                        |                                                                                                                                                                             |                                                                                                                                                                                                                                                                            |
| 2.1.1      | Is there a written site procedure which prescribes medical standards and examinations before entering jobs with specific medical fitness requirements? | No written procedure available.                                                           | Written/endorsed policy exists but is incomplete, out-of-date or not endorsed by current site management not covering all medical examinations proper. | Written/endorsed policy exists that defines appropriate objectives covering almost all medical examinations proper.                                                         | Written/endorsed policy exists that defines appropriate objectives covering all medical examinations proper.<br>Examination is always done before entering the new job.                                                                                                    |
| 2.1.2      | Is the content of these medical examinations well defined and to all applicable?                                                                       | The content of these medical examinations are not well defined and to all applicable.     | The content of these medical examinations are partly defined and not to all applicable.                                                                | Medical examinations are based on the health risk assessment health requirements of the actual job of the individual and the content is well defined and to all applicable. | These medical examinations are based on the health risk assessment and special health requirements of the actual job of the individual, and include sensitive and specific tests where appropriate. The content is well defined, to all applicable and regularly reviewed. |
| 2.1.3      | Are susceptible individuals effectively protected?<br>Is there a process for adapting the workplace for people with disability?                        | No program in place for identification of individual susceptibility.                      | Individual susceptibility is sometimes or partly taken into account at pre-placement. No policy adapting workplaces to disabled persons.               | Individually susceptible persons are protected. No policy for disabled persons.                                                                                             | Individual susceptibility appreciated and accounted for, disabled persons placed in suitable jobs with suitable work tasks.                                                                                                                                                |
| <b>2.2</b> | <b>Health surveillance</b>                                                                                                                             |                                                                                           |                                                                                                                                                        |                                                                                                                                                                             |                                                                                                                                                                                                                                                                            |
| 2.2.1      | Has the need for specific health surveillance based on Health Risk Assessment been defined?                                                            | The need for specific health surveillance, e.g. driven by exposure, has not been defined. | Some health surveillance requirements have been defined.                                                                                               | Necessary health surveillance has been defined but is not fully implemented.                                                                                                | All legally required health surveillance and exposure driven examinations have been defined and actioned.                                                                                                                                                                  |
| 2.2.2      | Are the results and need for health surveillance periodically evaluated?                                                                               | Results and needs not periodically (re-) evaluated.                                       | Results and needs periodically (re-)evaluated in isolation.                                                                                            | Results and needs periodically (re-)evaluated but not in function of operational changes.                                                                                   | Results and needs periodically (re-)evaluated and schedule adapted, including on the basis of operational changes.                                                                                                                                                         |

| No.         | Question                                                                                                                                   | Score 0 : Immediate action required                          | Score 1 : Major deficiencies                                                                                            | Score 2 : Minor deficiencies                                                                                                            | Score 3 : Fully compliant                                                                                                                                                                                |
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| <b>2.3.</b> | <b>Post-injury and post-illness fitness for work</b>                                                                                       |                                                              |                                                                                                                         |                                                                                                                                         |                                                                                                                                                                                                          |
| 2.3.1       | Is a written document on procedures regarding fitness for work after illness and accidents available?                                      | No written document available and no procedures established. | Written document on procedures available but not well understood by medical staff and not performed on a regular basis. | Written document on procedures available and procedures established but minor gaps identified.                                          | Written document on procedures available, procedures well understood, and procedures established.                                                                                                        |
| 2.3.2       | Is there a regular medical follow up of cases of occupational accidents and/or illness with respect to their fitness for work after rehab? | No regular medical follow up at all established.             | Medical follow up established but not performed on a regular basis.                                                     | Medical follow up established and performed on a regular basis but some small gaps identified.                                          | Medical follow up established and strictly performed on a regular basis.                                                                                                                                 |
| 2.3.3       | Is the notification of these cases by management or HR to medical personnel guaranteed by a prescriptive written procedure?                | No prescriptive procedure available.                         | Written procedure available but not well understood by management or HR and not established on a regular basis.         | Written procedure available, well understood by management and HR and large established on a regular basis; some small gaps identified. | Written procedure available, well understood by management and HR and well established on a regular basis.                                                                                               |
| <b>2.4</b>  | <b>Re-evaluation of fitness for work</b>                                                                                                   |                                                              |                                                                                                                         |                                                                                                                                         |                                                                                                                                                                                                          |
| 2.4.1       | Is there a system to re-evaluate fitness for work?                                                                                         | No systematic re-evaluation of fitness for work.             | Occasional re-evaluation of fitness for work takes place.                                                               | Not all needs in all kind of jobs for re-evaluating work-fitness have been identified.                                                  | Fitness for work re-evaluated at appropriate regular intervals with regard to workload.                                                                                                                  |
| 2.4.2       | Is there a system to re-assign persons when medically unfit for their present job?                                                         | No system available.                                         | Occasionally people with limited working ability is being replaced.                                                     | In some cases replacement of unfit workers takes place, but no systematic assessment of all possible solutions exists.                  | A register of workplaces for people with limited work ability is kept and regularly updated by a special working group with representatives from employer, employee and occupational health and hygiene. |
| <b>2.5</b>  | <b>Report on fitness to work to the management</b>                                                                                         |                                                              |                                                                                                                         |                                                                                                                                         |                                                                                                                                                                                                          |
| 2.5.1       | Is fitness to work reported to the management with respect to medical confidentiality?                                                     | No report or report of questionable confidentiality.         | Occasional report.                                                                                                      | Occasional or systematic reporting but questionable confidentiality.                                                                    | Systematic and regular reporting, ensuring confidentiality.                                                                                                                                              |

### 3. ASSESSMENT OF HEALTH RISKS

| No.        | Question                                                                                                                                 | Score 0 : Immediate action required                                          | Score 1 : Major deficiencies                                                                                                                                                 | Score 2 : Minor deficiencies                                                                                                                                                            | Score 3 : Fully compliant                                                                                                                                                                                                             |
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| <b>3.1</b> | <b>Hazard identification</b>                                                                                                             |                                                                              |                                                                                                                                                                              |                                                                                                                                                                                         |                                                                                                                                                                                                                                       |
| 3.1.1      | Is there an inventory of all hazardous substances present on-site, along with a practice/procedure for keeping the inventory current?    | No inventory available.                                                      | Incomplete or out-of-date inventory of chemicals purchased and/or no products or wastes included.                                                                            | Substantially complete and up-to-date inventory of all substances purchased or produced on site; no high volume or high hazard substances omitted.                                      | Complete inventory supported by procedures for updating as required.                                                                                                                                                                  |
| 3.1.2      | Are current safety data sheets (SDSs) or other hazard data readily available for the substances on the inventory?                        | Hazard data are not available and/or not readily retrievable.                | Some hazard data available for most purchased substances and products; however, SDSs or other information may be incomplete or out-of-date.                                  | Hazard data available for all high hazard and/or high volume substances and for almost all purchased substances and products. Information on wastes and process streams may be limited. | Complete information available on essentially all substances, readily accessible to the workforce and supported by procedures for updating as required.                                                                               |
| 3.1.3      | Do procurement/purchasing procedures provide for review of hazards before ordering?                                                      | Substances/materials are not reviewed prior to purchase and arrival on site. | No procedures are available, but there are limited or ad hoc arrangements.                                                                                                   | There are defined procedures for reviewing health hazards prior to the procurement/purchase of new products/materials, and it is followed most of the time.                             | Documented procedures are coordinated by a designated responsible person, and the procedure is fully implemented.                                                                                                                     |
| 3.1.4      | Are other (i.e., physical/biological agents and ergonomic factors) health hazards (that are relevant to the site) identified and listed? | Other relevant health hazards have not been identified.                      | There is no listing of the other identified health hazards, but they are generally familiar to affected workers and those responsible for their control.                     | Key health hazards are identified and listed including those that potentially affect a large proportion of workers or present a high risk to exposed workers.                           | All relevant physical/biological agents and ergonomic factors that are relevant to the site are identified and listed.                                                                                                                |
| 3.1.5      | Do capital projects, facility modifications and new designs include a procedure for competent review of associated health risks?         | Health risks are not considered.                                             | Potential health risks are reviewed on an ad hoc basis, typically at the discretion of the designer/engineer. Large projects, in practice, include a review of health risks. | Documented practices/procedures are in place, including a "sign-off" by the occupational hygienist or occupational hygiene focal point (contact).                                       | Documented practices/procedures are in place with occupational hygiene sign-off, AND the hygienist has regular contact with designers/engineers, including participation on "safe operations" or other engineering review committees. |

| No.        | Question                                                                                                                                           | Score 0 : Immediate action required                                                                                                                                                                        | Score 1 : Major deficiencies                                                                                                                                       | Score 2 : Minor deficiencies                                                                                                                                                                                                          | Score 3 : Fully compliant                                                                                                                                                                                                            |
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| 3.1.6      | Do procedures provide for review and dissemination of information on significant "new" health hazards that are not familiar to the site/personnel? | Procedures are not available.                                                                                                                                                                              | No procedures are available, but there are ad hoc arrangements for informing key management contacts and potentially affected workers.                             | Formal procedures are in place.                                                                                                                                                                                                       | Formal procedures are in place and include endorsement by management prior to the acquisition of "new" high risk substances/materials and training of employees as appropriate.                                                      |
| <b>3.2</b> | <b>Health Risk Assessment (HRA)</b>                                                                                                                |                                                                                                                                                                                                            |                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                      |
| 3.2.1      | Is there a procedure in place to assess risks arising from exposure to identified hazards in the workplace?                                        | There are no systematic assessments of health risks, the assessments do not address the major health risks on site and/or the HRA programme is clearly inadequate.                                         | No written procedure is in place, but more significant health hazards and risks have been assessed by competent occupational hygiene resources.                    | Documented procedures are in place for systematic HRAs, but the assessments have not been completed for all significant hazards and widely-used agents. However, a plan is in place to complete the assessments in a reasonable time. | Documented procedures are in place for systematic HRAs and assessments have been carried out for all significant hazards, and widely-used agents. A plan is in place to complete the assessment of other risks in a reasonable time. |
| 3.2.2      | Does the HRA procedure meet accepted criteria?                                                                                                     | The procedure is not documented, does not meet accepted standards for the professional practice of occupational hygiene, and/or the responsible site personnel do not adequately understand the procedure. | A procedure is documented and properly understood, but does not meet the requirements for application to site operations and/or identified health exposures/risks. | A documented, properly understood procedure has been adapted to meet requirements for application to site operations and/or identified health exposures/risks.                                                                        | An appropriate HRA procedure has been implemented effectively. All work areas, worker groups, health hazards and tasks are covered.                                                                                                  |
| 3.2.3      | Are HRA conducted for tasks as well as for full shift exposures?                                                                                   | Risks associated with tasks are not assessed.                                                                                                                                                              | Risks associated with tasks are assessed only on an informal or ad hoc basis.                                                                                      | Some identified high risk tasks have been assessed, but there is no plan to ensure that all relevant tasks will be covered.                                                                                                           | Identified high risk tasks have been assessed, and there is a plan to ensure that all other relevant tasks will be assessed in a reasonable time.                                                                                    |
| 3.2.4      | Does the HRA programme identify the need for health surveillance, including biological monitoring?                                                 | Exposures are identified for which health surveillance and biological monitoring would be appropriate, but no such monitoring is carried out.                                                              | Health surveillance and biological monitoring are carried out, but not for all pertinent exposures/risks.                                                          | Health surveillance and biological monitoring are carried out for all pertinent exposures/risks, but not according to standardised/accepted protocols, including assurance of test equipment calibration/performance.                 | Health surveillance and biological monitoring are carried out as follow-up to a formalised HRA process, according to standardised/ accepted protocol(s) and the results cross-referenced to relevant exposure data.                  |

| No.        | Question                                                                                                                                                                                                 | Score 0 : Immediate action required                                                                                                 | Score 1 : Major deficiencies                                                                                                                                                                                          | Score 2 : Minor deficiencies                                                                                                                                                                                            | Score 3 : Fully compliant                                                                                                                                                                                                                          |
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| 3.2.5      | Are monitoring data summarised or analysed statistically for comparison to relevant regulatory standards, i.e., 8-hour time-weighted average and short-term (15-minute) exposure limits, as appropriate? | Monitoring data are not summarised for decision-making or other purposes.                                                           | Monitoring data are summarised and/or analysed statistically, but are not used for decision-making or other follow-up activities.                                                                                     | Monitoring data are summarised and/or analysed statistically, but their use for decision-making or other follow-up activities can be made more effective.                                                               | Monitoring data are analysed statistically and compared to relevant regulatory standards and presented to management for agreement of follow-up activities.                                                                                        |
| 3.2.6      | Does the HRA process identify exposures/ risks, tasks or work groups in terms of low, medium or high in order to prioritise actions for follow-up exposure monitoring or improved control?               | Exposures/risks are not ranked in terms of low, medium or high.                                                                     | Exposures/risks are ranked on an ad hoc basis.                                                                                                                                                                        | Exposures/risks are ranked on an ad hoc basis, and prioritised with recommendations for improvements made to management.                                                                                                | A systematic procedure is in place for identifying higher priority exposures/risks, and recommendations for improvements in control are periodically submitted for management decision.                                                            |
| 3.2.7      | Are HRA records and documentation adequate?                                                                                                                                                              | There are no records of exposure monitoring data, nor documentation of HRAs or identification of the most significant health risks. | Exposure monitoring records are incomplete and/or there is no documentation of the results of HRAs.                                                                                                                   | Exposure monitoring records are complete and documentation is available for the most significant risks.                                                                                                                 | Exposure monitoring records are complete and HRA documentation is available for the more hazardous agents and for the agents involving the most exposed people. Documentation includes completed assessments with "no significant exposure."       |
| <b>3.3</b> | <b>Communications</b>                                                                                                                                                                                    |                                                                                                                                     |                                                                                                                                                                                                                       |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                    |
| 3.3.1      | Have the results of HRAs been properly communicated to management, the workforce and worker representatives as appropriate?                                                                              | Results are not communicated to management, the workforce and worker representatives as appropriate.                                | Results are communicated to management, the workforce and worker representatives as appropriate in an inconsistent or ad hoc fashion, without effective identification of prioritised correction or follow-up action. | Results are communicated to management, the workforce and worker representatives as appropriate during periodic review meetings, but exposures/risks, and corrective/follow-up actions are not effectively prioritised. | Results are communicated to management, the workforce and worker representatives as appropriate? During periodic review meetings, and exposures/risks and corrective/follow-up actions are effectively prioritised for management decision-making. |
| 3.3.2      | Is medical staff fully aware of the results of HRAs and part of the communication process?                                                                                                               | Not at all and not part of the communication process.                                                                               | Partly aware by chance, not part of communication process.                                                                                                                                                            | Aware and part of the communication process on an established regular basis; some small gaps identified.                                                                                                                | Fully aware and part of the communication process on a well established regular basis                                                                                                                                                              |

| No.        | Question                                                                                      | Score 0 : Immediate action required  | Score 1 : Major deficiencies                                                                                                                                           | Score 2 : Minor deficiencies                                                                                                                                                                                                                                                                                 | Score 3 : Fully compliant                                                                                                                                                                                                                                                                                    |
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| 3.3.3      | Is there an effective procedure for communicating the results of HRAs to all persons at risk? | Results are not communicated.        | Results communicated in a somewhat inconsistent fashion, on an ad hoc basis.                                                                                           | Results are consistently communicated to the workers on whom exposure samples are collected.                                                                                                                                                                                                                 | Results are consistently communicated to the workers on whom exposure samples are collected; and HRAs are communicated to all workers within a group to which they apply. Exposed personnel is fully aware of protective measures.                                                                           |
| 3.3.4      | Is effectiveness of communication assessed?                                                   | Not at all.                          | Effectiveness of communication is not assessed but measured occasionally by informal talks.                                                                            | Effectiveness of communication is assessed; some minor gaps identified.                                                                                                                                                                                                                                      | Effectiveness of communication is well assessed.                                                                                                                                                                                                                                                             |
| 3.3.5      | Are issues raised by workers effectively and in a duly timeframe addressed?                   | Not at all.                          | Issues raised by workers are occasionally addressed.                                                                                                                   | Issues raised by workers are by and large effectively addressed; but minor gaps identified.                                                                                                                                                                                                                  | Issues raised by workers are effectively and in a duly timeframe addressed.                                                                                                                                                                                                                                  |
| <b>3.4</b> | <b>Management of identified risks</b>                                                         |                                      |                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                              |
| 3.4.1      | Are the results of HRAs integrated into overall site management processes?                    | No consideration by site management. | Recommendations and follow-up actions that result from HRAs are considered by site management, but not included within the site process for risk or change management. | Recommendations and follow-up actions that result from HRAs are considered by site management as part of the site process for risk or change management. The management process is effective in deciding on follow-up actions, assigning responsibilities, allocating resources and following to completion. | Recommendations and follow-up actions that result from HRAs are considered by site management as part of the site process for risk or change management. The management process is effective in deciding on follow-up actions, assigning responsibilities, allocating resources and following to completion. |
| 3.4.2      | Is provision made for the reassessment of health risks?                                       | No provision is made.                | All assessments are reviewed on a periodic basis, with higher priority exposures/risks undergoing more frequent review.                                                | Assessments are reviewed on a scheduled basis, and changes in activities, plant, equipment, materials, or working practice are reviewed as needed, on an ad hoc basis.                                                                                                                                       | Assessments are reviewed on a scheduled basis, and effective procedures are in place, with review "triggers" based on changes in activities, plant, equipment, materials or working practice.                                                                                                                |

## 4. CONTROL OF HEALTH RISKS

| No.        | Question                                                                                                                                                                            | Score 0 : Immediate action required                                                                                                                                          | Score 1 : Major deficiencies                                                                                                                                                                                          | Score 2 : Minor deficiencies                                                                                                                                                                                                                  | Score 3 : Fully compliant                                                                                                                                                 |
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| <b>4.1</b> | <b>General</b>                                                                                                                                                                      |                                                                                                                                                                              |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                               |                                                                                                                                                                           |
| 4.1.1      | Is the generally-accepted "hierarchy of controls" applied (i.e. emphasis on engineering control of hazardous exposures, followed by procedural controls, then personal protection)? | No emphasis is placed on engineering controls; undue reliance is placed on personal protection.                                                                              | Some emphasis is placed on engineering controls, but there are significant example(s) where accepted engineering control technology is not applied; and/or observed procedures are inappropriate to the health risks. | Engineering controls are in place where practicable and appropriate; observed practices/procedures are adequate but not properly documented.                                                                                                  | Engineering controls and practices/procedures are appropriate to the health risks and properly documented.                                                                |
| <b>4.2</b> | <b>Engineering Control</b>                                                                                                                                                          |                                                                                                                                                                              |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                               |                                                                                                                                                                           |
| 4.2.1      | Have engineering control options been installed for significant health risks?                                                                                                       | Engineering controls for protection against identified health risks have not been considered and/or are generally inadequate for the intended purpose(s).                    | Engineering controls are installed and adequate for some health hazards, but there are significant hazards for which proven control technology is available but not installed.                                        | Engineering controls are installed to protect against all significant health hazards where the control technology is proven; controls are generally adequate, but some design improvements could be made to improve effectiveness/efficiency. | Engineering controls of optimum effectiveness/efficiency are installed for significant hazards where proven technology exists.                                            |
| 4.2.2      | Where fitted, are engineering controls installed according to accepted engineering standards?                                                                                       | Health hazard controls are not provided with equivalent engineering expertise, management oversight and quality control as other engineering projects of similar complexity. | Health hazard controls and designs are integrated into the design/engineering procedures, but the company or other applied engineering standards do not address health aspects of designs properly.                   | Applied engineering standards address health aspects adequately, but in practice health criteria are not always accorded an equal footing with other aspects (e.g. some controls deleted during detailed design or construction phases).      | Engineering standards address health aspects properly. Appropriate health controls are identified and are carried through to the detailed design and construction phases. |
| 4.2.3      | Where fitted, are engineering controls properly maintained?                                                                                                                         | Controls for the protection of health are generally not well maintained.                                                                                                     | Controls for protection of health are generally well maintained, but no special emphasis is placed on priorities for breakdown repairs.                                                                               | Some, but not all, controls to minimise health risks are included in the preventive maintenance programme, and breakdowns are repaired on a priority basis.                                                                                   | All engineering controls to minimise health risks are on the preventive maintenance schedule, and breakdowns are repaired on a priority basis.                            |

| No.        | Question                                                                                                              | Score 0 : Immediate action required                                                                                          | Score 1 : Major deficiencies                                                                                                                                                                                     | Score 2 : Minor deficiencies                                                                                                                                                     | Score 3 : Fully compliant                                                                                                                                                                                                                                                                      |
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| 4.2.4      | Where fitted, are engineering controls checked and tested regularly?                                                  | There are no checks or tests.                                                                                                | There is some ad hoc testing, not on a formal/scheduled basis.                                                                                                                                                   | All controls for protection against high priority health risks are checked/tested on a scheduled basis, but some of the lower priority health risks are not properly addressed.  | All controls are included in documented procedures for regular checks/tests and periodic (but less frequent) in-depth examination.                                                                                                                                                             |
| <b>4.3</b> | <b>Procedural Control</b>                                                                                             |                                                                                                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                |
| 4.3.1      | Are documented procedures available that address health hazards encountered during routine operations?                | Procedures do not address health hazards at the location.                                                                    | Procedures are available that address health hazards, but they are not integrated into operating or other standard procedures.                                                                                   | Health protection considerations are generally integrated into the operating/standard procedures, but there are some instances where significant health risks are not addressed. | Health protection considerations are integrated into the operating/standard procedures for all significant or high priority risks that are identified in the exposure/risk assessment process.                                                                                                 |
| 4.3.2      | Are documented procedures available to address health hazards of non-routine operations, including turnarounds (TAs)? | No procedures are available.                                                                                                 | Some operations, maintenance or other activities are covered, e.g., repetitive maintenance tasks.                                                                                                                | Procedures generally address repetitive (though perhaps infrequent) operations, but unusual or "first-time" tasks and turnaround procedures do not address health criteria.      | Documented procedures adequately address health risks associated with repetitive, "first time" and turnaround operations, with advice/involvement from the occupational hygiene resource, as appropriate.                                                                                      |
| 4.3.3      | Are health considerations included in Permit to Work (PTW) procedures?                                                | PTW procedures exist but do not address risks to health.                                                                     | Health considerations are included in the key permits (viz., confined space entry), but are not adequately addressed in all permits.                                                                             | Health considerations are included in all permits.                                                                                                                               | Health considerations are included in all permits, and PTW procedures include a "pre-job" task/safety analysis that includes health considerations.                                                                                                                                            |
| <b>4.4</b> | <b>Personal Protective Equipment (PPE)</b>                                                                            |                                                                                                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                |
| 4.4.1      | Is there a formal/documented programme for the provision of PPE that is needed for protection against health hazards? | PPE, if used for protection against health risks, is selected, distributed and used in an informal and/or inadequate manner. | There is a formalised, documented programme for the provision of key PPE devices/equipment (viz., respiratory protection), but the programme does not conform to appropriate industry or governmental standards. | All PPE used for protection against health hazards is provided in a manner that is consistent with the requirements of industry or local standards.                              | All PPE used for protection against health hazards is provided in a manner that is consistent with the requirements of industry or local regulatory standards; the programme is periodically assessed for compliance, (with provisions made for improvement when deficiencies are identified). |
| 4.4.2      | Are personnel, facilities and resources available for the selection, use and maintenance of PPE?                      | Selection, use and maintenance of PPE are not considered as part of its use.                                                 | Some personnel, facilities and resources are available, but not fully adequate.                                                                                                                                  | Personnel, facilities and resources are available and effective with only minor exceptions.                                                                                      | PPE equipment/devices are selected according to appropriate technical requirements, and suitable facilities/resources are available for maintenance of PPE.                                                                                                                                    |

| No.   | Question                                                                                                                                  | Score 0 : Immediate action required            | Score 1 : Major deficiencies                          | Score 2 : Minor deficiencies                                                            | Score 3 : Fully compliant                                                                                    |
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| 4.4.3 | Are employees given suitable information, instruction and training in PPE use and maintenance, with regular updates and fully documented? | No information, instruction or training given. | Some information, instruction and training are given. | Comprehensive information, instruction and training are given, but no records are kept. | Comprehensive information, instruction and training are given with regular updates and are fully documented. |

## 5. MONITORING OF PERFORMANCE

| No.        | Question                                                                                                                                                                                                                                                                | Score 0 : Immediate action required                                                              | Score 1 : Major deficiencies                                                                                                                                                        | Score 2 : Minor deficiencies                                                                                                                                                                         | Score 3 : Fully compliant                                                                                                                                                                       |
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| <b>5.1</b> | <b>Performance indicators</b>                                                                                                                                                                                                                                           |                                                                                                  |                                                                                                                                                                                     |                                                                                                                                                                                                      |                                                                                                                                                                                                 |
| 5.1.1      | Are performance indicators identified and endorsed by management for tracking the effectiveness of the occupational health programme?                                                                                                                                   | There are no key performance indicators for the site's health-related programmes and activities. | Performance indicators have been identified by the OH function, but they have not been endorsed and are not reported to management.                                                 | Performance indicators have been identified, endorsed and are reported to management, separate from the performance indicator/tracking that is in place for safety, environment and other functions. | Performance indicators have been identified and endorsed by management and are integrated with the performance indicator/tracking that is in place for safety, environment and other functions. |
| 5.1.2      | Do performance indicators provide an insight into the effectiveness of site health protection programmes?                                                                                                                                                               | Performance indicators do not address outcome or effectiveness measures.                         | Performance indicators address outcome and/or effectiveness measures, but the identified measures do not match the organisations policy/goals for the health protection programmes. | Performance indicators address outcome and/or effectiveness measures, and they match the organisations policy/goals for the health protection programmes.                                            | Performance indicators address outcome and/or effectiveness measures; they match the organisations policy/goals for the health protection programmes; and trends are tracked over time.         |
| <b>5.2</b> | <b>Incident reporting and investigation</b>                                                                                                                                                                                                                             |                                                                                                  |                                                                                                                                                                                     |                                                                                                                                                                                                      |                                                                                                                                                                                                 |
| 5.2.1      | Does a written report by the occupational physician to the management take place with respect to the health status of the employees - as requested or restricted by law - on a regular basis?<br>Only applicable if not limited by national law due to confidentiality. | No written report exists although clearly demanded by law.                                       | No written report exists on a regular basis although clearly demanded by law but management gets some notification by chance.                                                       | A written report takes place on a regular basis as demanded by law but minor gaps identified.                                                                                                        | A written report takes place on a regular basis as demanded by law.                                                                                                                             |

| No.   | Question                                                                                                                                                                                                                                                                                          | Score 0 : Immediate action required                             | Score 1 : Major deficiencies                                                                                                                                                | Score 2 : Minor deficiencies                                                                                                                                 | Score 3 : Fully compliant                                                                                                                                                                                                                                                                                                                    |
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| 5.2.2 | Are health related incidents (occupational illnesses, temporary/permanent disability, occupational exposure limit exceedences, complaints, fatalities etc.) that are potentially related to workplace exposures identified, in compliance with local law reported to management and investigated? | Health-related incidents are not reported and/or investigated.  | Acute health-related incidents are in compliance with local law reported and/or investigated, but only if the illness/injury is linked with certainty to workplace factors. | Health-related incidents are in compliance with local law reported and/or investigated, if the illness/injury can reasonably be linked to workplace factors. | Health-related incidents are in compliance with local law reported and/or investigated, if the illness/injury can reasonably be linked to workplace factors. Investigation, recommendations for corrective action and follow-up to completion is carried out consistent with the practices in place for safety and/or environmental control. |
| 5.2.3 | Are criteria for the classification of health-related incidents established by the OH function and endorsed by management?                                                                                                                                                                        | There are no criteria for classifying health-related incidents. | There are established criteria for classifying health-related incidents, but they have not been endorsed by management.                                                     | Not applicable.                                                                                                                                              | There are established criteria for classifying health-related incidents, and they have been endorsed by management.                                                                                                                                                                                                                          |

## 6. NON ROUTINE SITUATIONS

| No.        | Question                                                                                                                                     | Score 0 : Immediate action required                                                                    | Score 1 : Major deficiencies                                                                                          | Score 2 : Minor deficiencies                                                                                                                                                                                                                                  | Score 3 : Fully compliant                                                                                                                                                                                                                |
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| <b>6.1</b> | <b>Emergency Response Planning</b>                                                                                                           |                                                                                                        |                                                                                                                       |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                          |
| 6.1.1      | Is there an emergency response plan?                                                                                                         | No plan available.                                                                                     | A plan exists, but health risks are not fully addressed.                                                              | Health risks are fully addressed in the emergency response plan.                                                                                                                                                                                              | OH function is fully involved in the emergency response plan, with inclusion on automatic call-out lists.                                                                                                                                |
| 6.1.2      | Does the emergency response plan include an effective organisational structure that includes OH resources in a clearly defined written form? | There is no formal command-and-control structure.                                                      | An organisational structure exists, but OH staff and responsibilities are not included.                               | OH staff and responsibilities are included in the emergency response organisation, but reporting relationships are not appropriate for discharging assigned responsibilities.                                                                                 | OH staff is a full member of the emergency response team, with appropriate assigned duties reporting to the appropriate manager within the defined organisational structure and appear in a written form on the emergency response plan. |
| 6.1.3      | Are neighbouring industry and community emergency response organisations included in the emergency response plan?                            | The emergency response plan does not include available resources from outside the site/facility.       | The emergency response plan includes some, but not all, appropriate resources from outside the site/facility.         | The emergency response plan includes appropriate outside organisations, but the outside resources are not partners in planning, are not fully aware of their identified roles, and/or do not participate in emergency response exercises.                     | The emergency response plan includes appropriate outside organisations, which are partners in planning and are participants in emergency response exercises.                                                                             |
| 6.1.4      | Is emergency hazard information available for all hazardous substances?                                                                      | No hazard information is available, and/or emergency response scenarios do not address health hazards. | Hazard information is generally available, but its adequacy is not formally addressed in the emergency response plan. | Emergency scenarios specifically and adequately address health/exposure risks, and appropriate hazard information is available. However, the latter is not readily available and up-to-date for all personnel who might be involved in an emergency response. | All relevant hazard information is readily available to all personnel who are potentially involved in an emergency response.                                                                                                             |
| <b>6.2</b> | <b>Training for Emergencies</b>                                                                                                              |                                                                                                        |                                                                                                                       |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                          |
| 6.2.1      | Are employees trained in the procedures to be followed in an emergency with respect to OH aspects?                                           | OH aspects are not included in emergency response training.                                            | OH aspects are included in emergency response training on an ad-hoc or informal basis.                                | Emergency response teams receive appropriate training and participate in drills, but training/drills do not include all potentially affected employees.                                                                                                       | Regular emergency response drills are conducted in a systematic fashion that will periodically cover all units/employees and credible OH emergency scenarios.                                                                            |

| No.         | Question                                                                                                                                                                      | Score 0 : Immediate action required                                                                                                            | Score 1 : Major deficiencies                                                                                                                                                                                                                        | Score 2 : Minor deficiencies                                                                                                                                                               | Score 3 : Fully compliant                                                                                                                                                                                          |
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| <b>6.3</b>  | <b>Turnarounds and Major Maintenance</b>                                                                                                                                      |                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                            |                                                                                                                                                                                                                    |
| 6.3.1       | Are health risks considered during planning/procedures development for turnarounds (TA) and major maintenance and OH staff fully involved in planning/procedures development? | Health risks are not considered during the planning for turnarounds and major maintenance and OH staff is not involved.                        | Health risks are considered on an ad hoc basis, but written procedures and formal TA planning committees do not have sufficient OH expertise to recommend adequate health-related procedures and other controls.                                    | Health risks identified by OH staff are integral to the planning and development of procedures/controls for TAs and major maintenance activities.                                          | The OH function is part of the TA planning team, reviews all novel TA and major maintenance activities.                                                                                                            |
| 6.3.2       | Are the potential exposures among TA and maintenance workers monitored and actively assessed during the TA or major maintenance activity?                                     | Health risks are not monitored/assessed and the adequacy of controls is not actively reviewed during the TAs and major maintenance activities. | Health risks are monitored/assessed and the adequacy of controls is reviewed on an ad hoc basis during the TAs and major maintenance activities. Monitoring, exposure assessment and review of controls does not follow a previously endorsed plan. | Health risks are monitored/assessed and the adequacy of controls is reviewed according to a previously endorsed plan, but not all workers are included in the plan (contractor employees). | Health risks are monitored/assessed and the adequacy of controls is reviewed according to a previously endorsed plan that includes all workers (employees/contractors) with an identified health or exposure risk. |
| <b>6.4.</b> | <b>Breakdown</b>                                                                                                                                                              |                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                            |                                                                                                                                                                                                                    |
| 6.4.1       | Are written procedures/practices in place to control health risks during breakdown and unplanned shutdowns?                                                                   | There are no procedures/practices in place to address such health risks.                                                                       | Some health-related procedures and precautions are available, but they are not well-documented in standard operating procedures, or are out of date.                                                                                                | Health-related procedures and precautions are effective, up-to-date and included in the most important documented operating procedures.                                                    | Health-related procedures and precautions are effective, up-to-date and included in all documented standard operating procedures.                                                                                  |

## 7. TRAINING AND AWARENESS

| No.        | Question                                                                                                                                                                                                                                                                                   | Score 0 : Immediate action required                                                                                                                        | Score 1 : Major deficiencies                                                                                                                                                                                        | Score 2 : Minor deficiencies                                                                                                                                                                                                             | Score 3 : Fully compliant                                                                                                                                                                        |
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| <b>7.1</b> | <b>Hazard Communication</b>                                                                                                                                                                                                                                                                |                                                                                                                                                            |                                                                                                                                                                                                                     |                                                                                                                                                                                                                                          |                                                                                                                                                                                                  |
| 7.1.1      | Are Safety Data Sheets (SDSs) -where legally requested- or similar information, readily available to potentially affected workers for all hazardous substances and preparations to which they may be exposed (including those substances that are generated by a process such as welding)? | SDSs or similar information is not available, or information is missing on high-quantity or toxic/very toxic substances and preparations that are on site. | Up-to-date SDSs (or similar information) are retained for all hazardous substances and preparations on site, with only minor exceptions, but are not readily available to potentially exposed employees.            | Up-to-date SDSs (or similar information) are available for all hazardous substances and preparations on site, with only minor exceptions. The information is available to most, but not all, of the workers who are potentially exposed. | SDSs (or equivalent information) are available for all hazardous substances and preparations on site, and the information is readily available to all potentially exposed employees.             |
| 7.1.2      | Are SDSs regularly updated and a responsible person defined?                                                                                                                                                                                                                               | No updating, no person identified.                                                                                                                         | SDSs updated on an irregular basis, no responsible person identified.                                                                                                                                               | SDSs regularly updated, a responsible person identified but some minor gaps.                                                                                                                                                             | SDSs are regularly updated and a responsible person is clearly defined.                                                                                                                          |
| 7.1.3      | Has medical staff easy access to SDSs and is a procedure well established?                                                                                                                                                                                                                 | Not at all.                                                                                                                                                | No easy access unless by chance, no procedure proper established.                                                                                                                                                   | Medical staff has access to SDSs but no easy procedure established.                                                                                                                                                                      | Medical staff has easy access to SDSs and procedure is well defined and established.                                                                                                             |
| 7.1.4      | Are appropriate signs and hazard warnings erected in work areas (e.g., noise and radiation as well as hazardous materials)?                                                                                                                                                                | Hazard warnings/signs are not erected in appropriate work areas (or the signs/warnings are clearly inadequate with regard to the health/exposure risks).   | Hazard /warning signs are erected in some appropriate working areas, but some significant hazards are not appropriately addressed, and/or signs are poorly maintained, and/or signs are too numerous and confusing. | Hazard/warning signs are erected in most appropriate areas.                                                                                                                                                                              | All necessary hazard warning signs are in place. Signs/warnings are well maintained and easily readable.                                                                                         |
| 7.1.5      | Are containers, pipes and vessels properly labelled as to their contents?                                                                                                                                                                                                                  | Containers, pipes and vessels are not labelled (or labelling practices are clearly deficient).                                                             | Some vessels/pipes/containers of hazardous substances are labelled with regard to the contents and associated risks.                                                                                                | Most vessels/pipes/containers of hazardous substances are labelled with regard to the contents and associated risks. Non-hazardous substances and routine (low hazard) laboratory samples may not be labelled.                           | All vessels/pipes/containers in process, laboratory and off-sites areas are properly labelled as to contents and hazard, including non-hazardous substances/preparations and laboratory samples. |

| No.        | Question                                                                                                                                                                | Score 0 : Immediate action required                                                                                                                    | Score 1 : Major deficiencies                                                                                                                                    | Score 2 : Minor deficiencies                                                                                                                                                                                               | Score 3 : Fully compliant                                                                                                                                                                   |
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| 7.1.6      | Are the results of HRAs shared with potentially affected workers?                                                                                                       | The results are not shared with potentially affected workers.                                                                                          | Information is shared on an informal and/or inconsistent basis; exposure monitoring results are shared with the individuals on whom the samples were collected. | Information is shared on a formal/consistent basis, including HRAs for each worker group as well as exposure monitoring for the individuals on whom the samples were collected.                                            | Information on HRAs is shared with members of the worker groups, as part of periodic training/information sessions.                                                                         |
| <b>7.2</b> | <b>Training</b>                                                                                                                                                         |                                                                                                                                                        |                                                                                                                                                                 |                                                                                                                                                                                                                            |                                                                                                                                                                                             |
| 7.2.1      | Is appropriate training on hazard identification, assessment and control, and their OH responsibilities given to managers, supervisors, employees and contractors?      | No health-related training is given, OR the training that is provided is clearly inadequate.                                                           | Some appropriate training/quality is provided, but some key subject matter and key worker/management groups are not fully included.                             | Appropriate training is provided for most but not all groups of workers.                                                                                                                                                   | Appropriately focused training is given to all managers, supervisors and employees by personnel who are competent in the subject matter.                                                    |
| 7.2.2      | Is health-related training an integral part of the site personnel/training system(s)?                                                                                   | Health-related training is strictly ad hoc, conducted outside the site training system(s).                                                             | Health-related training is comprehensive and well-structured, but conducted outside the site training system(s).                                                | Health-related training is comprehensive and conducted as part of the site training system(s). Training materials are adequate and trainers are familiar with health-related information, but recordkeeping is inadequate. | Health-related training is comprehensive and conducted as part of the site training system(s) by well-prepared trainers. Appropriate records are kept.                                      |
| 7.2.3      | Are basic concepts of health protection included in the induction courses for new employees, and are employees trained on health-related aspects of new jobs/transfers? | Basic concepts of health protection are not included in the induction courses for employees or as part of training that is provided for job transfers. | Basic concepts of health protection are included in the induction courses for new employees.                                                                    | Basic concepts of health protection, with particular reference to the job which the employee will perform, are included in the courses for new employees but not for current employees who are transferring to new jobs.   | Basic concepts of health protection are included in the induction and job-transfer courses for all employees, with particular reference to the job which the employee will perform.         |
| 7.2.4      | Is specific instruction and training given in the use of exposure control measures and procedures for reporting any observed deterioration in their performance?        | No instruction training is given in the use of exposure control measures.                                                                              | Some ad hoc instruction and training is given.                                                                                                                  | Instruction and training is given as indicated by the HRA but no formal arrangements exist for reporting of defects or deterioration in performance.                                                                       | Comprehensive instruction and training in the use and limitations of control measures is given to all persons at risk and written procedures exist for reporting and repair of any defects. |

| No.        | Question                                                                                                                                                                                                | Score 0 : Immediate action required                                                                                                      | Score 1 : Major deficiencies                                                                                                          | Score 2 : Minor deficiencies                                                                                                                                                                                   | Score 3 : Fully compliant                                                                                                                                                                                     |
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| 7.2.5      | Is periodic/refresher training provided to all employees?                                                                                                                                               | Health-related refresher training is not provided.                                                                                       | Refresher training is provided on request, but is not comprehensive and is not part of the site's personnel training system(s).       | Refresher training is comprehensive, but EITHER materials for health-related subjects are inadequate, OR lecturers/discussion leaders are knowledgeable in the subject matter. Appropriate records are kept.   | The periodic refresher training is comprehensive, materials for health-related subjects are adequate, and lecturers/discussion leaders are knowledgeable in the subject matter. Appropriate records are kept. |
| <b>7.3</b> | <b>Community Awareness</b>                                                                                                                                                                              |                                                                                                                                          |                                                                                                                                       |                                                                                                                                                                                                                |                                                                                                                                                                                                               |
| 7.3.1      | Have members of the community been advised as to the nature of the hazards/risks to the local environment and community that have been identified from the development of emergency response scenarios? | Emergency response scenarios have not been developed for the site/facility, or the scenarios do not address the impact on the community. | Identified emergency response scenarios do not adequately address all of the risks that might affect the community/local environment. | Emergency scenarios are comprehensive and identify all of the potential health risks to the community, but the community has not been advised as to the nature of the risks or of required protective actions. | Comprehensive emergency scenarios exist, they identify all of the potential health risks to the community, and the community has been advised as to the nature of the risks and required protective actions.  |
| 7.3.2      | Do site policies properly address potential health impacts on the community or local environment?                                                                                                       | No site policy exists.                                                                                                                   | Site policy exists but it has not been communicated to the community at large.                                                        | The site policy has been communicated to the community-at-large, but there is no site capability/plan to interact with individual members of the community or to address specific issues that arise.           | The site policy has been communicated to the community-at-large, there are effective relations with the community, and expertise for addressing health-related issues is readily available.                   |

## 8. DOCUMENTATION, DATA INTEGRITY AND RECORDKEEPING

| No.        | Question                                                                                                                                                                                                                                                                                                                                                              | Score 0 : Immediate action required                                                                                                                                                                                                                   | Score 1 : Major deficiencies                                                                                                                                                | Score 2 : Minor deficiencies                                                                                                                                            | Score 3 : Fully compliant                                                                                                                                                            |
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| <b>8.1</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                       |                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                                      |
| 8.1.1      | Are health-related practices/procedures integrated into standard operating procedures?                                                                                                                                                                                                                                                                                | Some health-related criteria are specified but are not included in standard operating practices and procedures.                                                                                                                                       | Appropriate health-related practices/procedures are available and up-to-date, but are not integrated into the relevant standard operating practices.                        | Not applicable.                                                                                                                                                         | Appropriate health-related practices/procedures are integrated into the relevant standard operating practices.                                                                       |
| 8.1.2      | Are criteria, components and responsibilities documented for key stand-alone programmes that are applicable to the site/facility, such as: <ul style="list-style-type: none"> <li>• hearing conservation</li> <li>• respiratory protection</li> <li>• other PPE</li> <li>• radiation safety</li> <li>• exposure assessment</li> <li>• exposure monitoring?</li> </ul> | Formal /documented programmes and assigned responsibilities do not exist for stand-alone health-related programmes that are appropriate to the site, OR existing documented programmes do not meet minimum regulatory, industry or company standards. | Acceptable documentation is available for some but not all health-protection programmes.                                                                                    | Acceptable documentation is available for most of the health-protection programmes that are in place.                                                                   | Documentation is complete and acceptable for all of the health-protection programmes that are in place.                                                                              |
| 8.1.3      | Is documentation of health-related practices and procedures part of the site system(s) for documentation and updating of standard operating procedures?                                                                                                                                                                                                               | Documentation of health-related practices and procedures is not part of the site documentation system(s), and the practices/procedures are not properly maintained and updated.                                                                       | Documentation of health-related practices and procedures is not part of the site documentation system(s), but the practices/procedures are properly maintained and updated. | Documentation of health-related practices and procedures is part of the site documentation system(s), and the practices/procedures are properly maintained and updated. | Documentation of health-related practices and procedures is part of the site documentation system(s), and the identified health resource/expert is included in the updating process. |

| No.        | Question                                                                                                                  | Score 0 : Immediate action required                                                                                       | Score 1 : Major deficiencies                                                                                                                                                                                                                                                                     | Score 2 : Minor deficiencies                                                                                                                                                                                                                                        | Score 3 : Fully compliant                                                                                                                                                                                                                                                                        |
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| <b>8.2</b> | <b>Data Integrity</b>                                                                                                     |                                                                                                                           |                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                  |
| 8.2.1      | Are samples taken or measurements made using validated methods and reliable instrumentation?                              | Ad hoc sampling methods are adopted.                                                                                      | Sampling methods are from national/consensus "approved" compendia, and instruments are used for purposes as specified by the manufacturers; however, instruments/methods have been field modified to meet local conditions or different objectives without evaluating the impact of the changes. | Sampling methods and monitoring instruments are used according to published protocols and manufacturers' instructions; and/or modifications have been properly evaluated to ensure that established quality criteria are met.                                       | Sampling methods and monitoring instruments are used according to published protocols and manufacturers' instructions; modifications have been properly evaluated to ensure that established quality criteria are met; and methodologies and changes to protocols are documented and up-to-date. |
| 8.2.2      | Is all sampling equipment properly maintained, tested and calibrated?                                                     | Sampling equipment is not tested or calibrated, or calibration protocols are clearly inadequate.                          | Some equipment that is critical for health protection decisions is not calibrated before each use or otherwise in accordance with manufacturers' instructions.                                                                                                                                   | Equipment that is critical for health protection decisions is properly calibrated, but calibration instructions/procedures are not readily available or proper records are not kept of calibration results.                                                         | Equipment that is critical for health protection decisions is properly calibrated, calibration procedures are documented, and records are kept.                                                                                                                                                  |
| 8.2.3      | Are all samples analysed using validated methods?                                                                         | Samples are not generally analysed according to published/accepted or validated protocols.                                | Samples are analysed according to accepted/validated protocols, but modifications to the procedures have not been evaluated.                                                                                                                                                                     | Samples are analysed according to accepted/validated protocols, modifications have been evaluated, but the modifications are not properly reflected in written procedures.                                                                                          | Samples are analysed according to accepted/validated protocols, modifications have been evaluated, and the modifications are included in written procedures.                                                                                                                                     |
| 8.2.4      | Does the analytical laboratory have an adequate quality control procedure, specific to the occupational hygiene analyses? | There are no quality control procedures in the laboratory, or they are not specific to the occupational hygiene analyses. | The laboratory has a quality control procedure specific to occupational hygiene analyses; but records are not kept of quality checks and/or the QC programme is not assessed periodically. Performance of external labs is not tracked/managed.                                                  | The laboratory has a quality control procedure specific to occupational hygiene analyses; records are kept of quality checks, and the QC programme is periodically assessed and updated as needed. Quality control programmes of external labs are tracked/managed. | The laboratory has a quality control procedure specific to occupational hygiene analyses; records are kept of quality checks, and the QC programme is periodically assessed and updated as needed. Quality control programmes of external labs are tracked/managed.                              |

| No.        | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Score 0 : Immediate action required                           | Score 1 : Major deficiencies                                                                                                                                                                                                              | Score 2 : Minor deficiencies                                                                                                                                                                                                                                                                                                                    | Score 3 : Fully compliant                                                                                                                                                                                |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8.2.5      | Does the laboratory participate in an external-quality assurance programme?                                                                                                                                                                                                                                                                                                                                                                                        | Does not participate in such a programme.                     | External quality assurance checks are informal, i.e., with "spikes" provided with submitted samples, but there is no participation in a formal, external quality assurance programme. External labs are not included in OH QA programmes. | The laboratory participates in an external quality assurance programme specific to the OH analyses conducted by the laboratory; but performance is not reviewed by OH functional management. External labs are included in the OH QA programme.                                                                                                 | The laboratory participates in an external quality assurance programme specific to the OH analyses and performance is reviewed by OH functional management.                                              |
| 8.2.6      | Is data integrity a key parameter in the management/reporting of the OH programme/activity?                                                                                                                                                                                                                                                                                                                                                                        | Is not a parameter.                                           | Yes, but there is no formal review or reporting of OH data integrity.                                                                                                                                                                     | OH data integrity is included in periodic reviews of the effectiveness of OH programmes, with regular (but less frequent) reviews from external parties.                                                                                                                                                                                        | OH data integrity is included in periodic internal/external reviews of the effectiveness of OH programmes, with exceptions reported to the site/facility management for follow-up and corrective action. |
| <b>8.3</b> | <b>Recordkeeping</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                               |                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                          |
| 8.3.1      | Are records kept of key OH-related data, including the following (as applicable):<br><ul style="list-style-type: none"> <li>• HRAs</li> <li>• biological monitoring</li> <li>• personal exposure monitoring</li> <li>• workforce training</li> <li>• analytical results</li> <li>• lab QA/QC data</li> <li>• equipment calibration</li> <li>• training/fitting of PPE</li> <li>• occupational illnesses</li> <li>• checks of controls (eg, ventilation)</li> </ul> | Records are not kept, or recordkeeping is clearly inadequate. | Records are generally comprehensive, but are not kept in a systematic fashion according to established requirements/protocols. Records may be incomplete or missing in one of the key/listed categories.                                  | Records are complete and maintained according to established protocols, but they are not considered part of the site /facility system for maintenance of records and therefore not subject to periodic assessment and management review. Some records may not be retained for periods established by company policy or regulatory requirements. | Records are complete and properly maintained, and practices are subject to periodic assessment and management review. Retention policies are established and followed.                                   |
| 8.3.2      | Does this policy also include the national legal requirements on medical confidentiality and is in line with these requirements?                                                                                                                                                                                                                                                                                                                                   | Not at all.                                                   | Legal requirements on medical confidentiality are followed by and large but not clearly stated in a written form.                                                                                                                         | Legal requirements on medical confidentiality are strictly followed but not stated in a written form.                                                                                                                                                                                                                                           | Legal requirements on medical confidentiality are strictly followed and stated in the written policy.                                                                                                    |

| No.   | Question                                                                        | Score 0 : Immediate action required | Score 1 : Major deficiencies | Score 2 : Minor deficiencies | Score 3 : Fully compliant                                                                                                     |
|-------|---------------------------------------------------------------------------------|-------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| 8.3.3 | Are all medical confidential records (paper and electronic) securely locked up? | Not at all.                         | Locked up but not securely.  | Not applicable.              | All medical confidential records (paper and electronic) are securely locked up, and the security system is checked regularly. |

## 9. AUDIT AND REVIEW

| No.        | Question                                                                                                                                  | Score 0 : Immediate action required                                                                         | Score 1 : Major deficiencies                                                                                                                                                                                                                                                                                                                                           | Score 2 : Minor deficiencies                                                                                                                                                              | Score 3 : Fully compliant                                                                                                                                                          |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>9.1</b> | <b>Inspections and Audits</b>                                                                                                             |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                           |                                                                                                                                                                                    |
| 9.1.1      | Is there an effective internal self-inspection system in operation, e.g. planned health walk-throughs and is OH staff regularly included? | There is no system, or the system does not address health issues.                                           | Health inspections are conducted on a periodic basis, but: <ul style="list-style-type: none"> <li>• walk-throughs are infrequent/irregular and/or site and unit management do not participate and/or</li> <li>• significant results/findings from walk-throughs are not included in management follow-up.</li> </ul>                                                   | Periodic health inspections walk-throughs include management participation, but results/findings are not included in formal management system(s) for follow-up.                           | Periodic health inspections walk-throughs include management participation, and results/findings are included in formal management system(s) for follow-up.                        |
| 9.1.2      | Do corporate/formal audit systems/protocols address health-related programmes/criteria?                                                   | External health-related audits are not conducted, or the audits are unstructured or inconsistently applied. | Health audits are conducted according to a structured protocol, but: <ul style="list-style-type: none"> <li>• audits are not sufficiently frequent (every 3 years) OR</li> <li>• audit team does not have expertise necessary to review health programmes OR</li> <li>• audit results are not followed up with demonstrated correction of adverse findings.</li> </ul> | Effective health audits are conducted on a regular basis according to a structured protocol but insufficient management attention is devoted to implementing/tracking corrective actions. | Effective health audits are conducted and followed up on a regular basis, and an effective implementation/tracking system is evident regarding the recommended corrective actions. |
| 9.1.3      | Is there an effective system in place for tracking implementation of audit recommendations and closing completed action?                  | No follow-up procedures.                                                                                    | Some ad hoc follow-up to audit recommendations.                                                                                                                                                                                                                                                                                                                        | Follow-up of all audit recommendations but no formal system for tracking and close-out.                                                                                                   | Effective system available to track and close-out audit recommendations.                                                                                                           |