

8 Risk Assessment

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Amendment Record

Amendments will be staffed by the Health, Safety and Environmental Protection (HS&EP) team following consultation with relevant subject matter experts (SMEs) and key stakeholders.

Version No	Date	Text Affected	Authority
1.2	Oct 20	Interim update post-handover of Policy from DSA to D HS&EP.	D HS&EP
1.3	Jan 22	Updated to remove reference to maturity and bring the definition of a competent person in line with the HSE ¹ definition of competence.	D HS&EP

Introduction

1. This chapter sets out the Defence procedures, guidance and methodology for the risk assessment of activities and hazards otherwise inherent on or introduced to Defence. It also introduces the control measures to mitigate residual risk to a level that is as low as is reasonably practicable (ALARP) in compliance with current UK legislation.

2. All occupational health and safety risk assessments shall be assessed using the methodology set out in this chapter unless directed otherwise in subject specific Defence Safety Authority Regulations (DSA02) or specific risk assessment requirements in JSP 375 Volume 1 Chapters 9, 10, 11, 12, 25 and 40 (DSEAR, Manual Handling, Management of Hazardous Substances, Display Screen Equipment, Noise, Military Training for Land Systems and Climatic Injury).

¹ <https://www.hse.gov.uk/competence/what-is-competence.htm>

3. Any risk assessment is the quantifying of the probability or qualifying of the frequency of harm (loss, ill-health or injury to people or impact on the environment), whether resulting from acts, omissions, equipment failures or accident etc. All activities undertaken on the Defence estate or undertaken elsewhere by Defence personnel should be risk assessed. Risk assessment is not a substitute for making things safe, according to the hierarchy of risk controls². Where reasonably practical, the hazard should always be eliminated rather than managed e.g. leaks repaired and liquids cleaned up; not a risk assessment produced, and personnel warned of the slip hazard.

4. A hazard is anything that has the potential to cause harm whereas the risk is a combination of the likelihood of an event happening and the severity of the resulting harm, it can also be a frequency of events recurring. The risk of a hazard being realised is dependent on the activity being undertaken (a live insulated electrical cable should be safe to touch as the hazard is contained - unless a maintenance or engineering activity requires access to the bare wires where the hazard is then exposed).

5. Risks must be reduced to a level that is ALARP. This does not mean that an activity assessed as low risk needs no further action; nor does it mean that an activity assessed as high risk is unacceptable. ALARP means that the greater the risk, the greater the amount of time, money and effort should be applied to reduce the risk.

6. Reducing a risk to ALARP does not require the cessation of Risk to Life (RtL) activities; e.g. if the use of live ammunition is justified to meet the training imperative, principally by following range-safety protocols and all other practical control measures are enforced then the ALARP principle is satisfied.

Roles and Responsibilities

Commanding Officer (CO) / Head of Establishment (HoE)

7. The CO / HoE shall ensure that generic unit, establishment or platform wide hazards associated with the use and management of the unit, establishment or platform, including common areas as well as the specific activities performed under their authority are identified, and that appropriate risk assessments are carried out by competent³ persons and significant findings recorded. These must include shared facilities and lodger units. Sufficient resources must be made available to implement and maintain suitable and sufficient control measures to manage the risks to a level that is ALARP and effectively communicates necessary information to Defence personnel and other relevant stakeholders (contractors, industry partners etc).

8. Procedures need to be in place to pull together information on significant residual risks from individual activities in support of the normal operation of the Defence estate, unit or platform. This information should be evaluated to identify the

² Schedule 1 of management of H&S at Work Regulations 1999

³ A person who has the training, skills, experience and knowledge necessary to perform a task safely and is able to apply them. Other factors, such as attitude and physical ability, can also affect someone's competence.

consolidated risk and used to inform the centrally managed mitigation measures (traffic management, emergency procedures, first aid requirements etc); these should then be recorded in an overall Safety Case or Site risk assessment (see checklist at Annex B).

Managers

9. It is the responsibility of the manager who has control of the workplace, planning of an activity and / or has control of those undertaking an activity to ensure that all reasonably foreseeable hazards in their areas of responsibility have been identified, risk assessed by a competent person (Risk Assessor) and appropriate control measures identified and implemented. Significant findings should be recorded, risk control measures communicated to Defence personnel and other relevant stakeholders (contractors, industry partners etc); monitored for effectiveness and compliance; and regularly reviewed. MOD Form 5010 is the recommended means of recording the risk assessment although its use is not mandated.

10. The manager is accountable for ensuring that all those who might be exposed to a hazard are made aware of and understand the risk assessment's findings, the required mitigation control measures and the reason for the provision of any necessary training. The results of risk assessments should be communicated in accordance with local procedures to inform the Safety Case or site risk assessment process and the centrally managed mitigation measures (traffic management, emergency procedures, first aid requirements etc).

11. Managers should ensure that the suitability and effectiveness of risk assessments and associated control measures are maintained. Risk assessments are live documents which should be reviewed and updated as necessary and on a regular basis. If an assessment needs to be amended it is not necessary nor desirable to wait until the review date, it should be reviewed at the earliest opportunity as accidents can easily result from last minute changes to activities (especially dynamic activities such as military training exercises) where the consequences of change have not been fully considered.

12. It is recognised that it is not possible to foresee all hazards and that on occasion it may be necessary to conduct a dynamic risk assessment when confronted with an unexpected hazard. A dynamic risk assessment should only be used if a delay in making the assessment would increase the risk of harm. If there is a significant residual risk identified in a dynamic risk assessment a written risk assessment should be completed retrospectively to provide evidence of the risk having been assessed and to record the control measures applied.

Risk Assessors

13. Where hazards have been identified and there is a potential for harm, the risk should be assessed by a competent person who will have knowledge of the process

/ activity, and how and in what environment the activity is to be carried out. The risk assessment should be conducted in consultation with the personnel undertaking the activity and the significant findings explained to the manager who owns the risk along with assistance in developing any necessary control measures to mitigate those risks.

14. Some common activities (that share the same hazards and controls e.g. routine maintenance or cleaning) can be assessed and a generic risk assessment, Standing Orders, Safe Systems of Work, etc produced reducing the need for individual assessments. Generic assessments can only be used where the manager considers that the control measures identified and implemented adequately reduce the risk to ALARP and tolerable; irrespective of cultural, physical or mental differences of those undertaking the activity and the different environments in which the activity is conducted.

All Personnel

15. Personnel should report any previously unidentified hazards to the relevant manager, cooperate with risk assessors, comply with all control measures required (e.g. Safe Systems of Work) and undertake any appropriate training provided to mitigate risk. Personnel should inform the manager of any defective control measures, or any physical or medical condition that could affect the findings of the risk assessment and their ability to undertake the activity safely so that appropriate corrective action can be taken.

Assessing the Risk

16. The purpose of a risk assessment is to identify hazards and the level of resources required to reduce the risk to an acceptable level and to inform the risk owner of the degree of risk they are responsible for and may be called to account for.

17. Most risk assessments should be formally recorded (e.g. on a MOD Form 5010) following the methodology below (and flow diagram – Annex A) and may be specific or generic quantifying or qualifying the likelihood of an event occurring and the potential severity of the outcome. The risk assessment must record the control measures to be implemented to provide:

- a. Safe Systems of Work or Safe Systems of Training;
- b. a safe place;
- c. safe equipment;
- d. safe practices (robust procedures, use of PPE etc); and
- e. competent staff (ability, training and experience).

18. When a risk assessment is required for an activity that may be subject to rapid change (e.g. during operations) and a delay would increase the risk of harm, a dynamic (qualitative) risk assessment should be carried out. A dynamic assessment may also be appropriate to evaluate the suitability of a pre-prepared generic risk assessment based on specific set of circumstances. It is good practice to record

dynamic risk assessments retrospectively detailing the information available at that time on which the assessment was based, the significant findings and the control measures employed; this can then be used as the basis of a generic risk assessment on future similar tasks.

19. The risk assessment should consider all foreseeable hazards arising from all activities and processes present, as well as any hazards relating to the immediate physical workplace (e.g. poor lighting, restricted headroom).

20. Whilst a generic activity or process risk assessment may appear an easier way of doing the assessment it does not enable consideration of the interfaces and cumulative effects where more than one activity or process is taking place at the same time.

Therefore, the assessment should:

- a. fully identify and describe the activities or processes;
- b. identify all reasonably foreseeable hazards;
- c. identify how people may be harmed;
- d. consider who is likely to be exposed, how and for how long (including third parties who may be affected due to their proximity);
- e. identify the potential severity of the harm;
- f. evaluate the residual risk with all required control measures in place;
- g. identify and communicate the required control measures; and
- h. consider the findings of other related risk assessments that may impact on the activity; e.g. Fire Safety Risk Assessment, DSEAR Assessment.

21. Involvement of Defence personnel and / or TU safety representatives etc will provide useful information about how the work activity is carried out, this will make assessment of the risk more thorough and effective. Advice and guidance may also be available from the unit / establishment safety adviser.

22. When conducting a risk assessment there are five principal steps to be followed.

23. **Step 1** - Identify the hazard - The first step is to look for hazards. Consider the location that the activity or process is carried out and check for potential dangers. Concentrate on anything with the potential to cause serious harm to Defence personnel, contractors and visitors etc. Also ask for input from Defence personnel involved in or affected by the activity or the subject matter. Accident and ill-health records are a good way of revealing why and how accidents have occurred in the past. Manufacturer's instructions and datasheets contain information that should also

be considered. Take into account any hazards with the potential to cause long term (chronic) ill-health to Defence personnel e.g. noise, vibration.

24. **Step 2** - Decide who might be harmed and how? - Decide who and how many might be at risk? is it just those undertaking the activity? or could it affect adjacent workers, visitors, or members of the public? etc. Legislation requires special consideration be given to vulnerable groups such as young workers, expectant mothers, disabled personnel, or anyone else who is not familiar with the location or the activity and may therefore be at increased risk. How many people would be harmed? through physical contact with plant or equipment, inhalation of fumes or dust, environmental conditions (sunburn / rain), or extremes of temperature (heatstroke / frostbite) etc.

25. **Step 3** - Evaluate the risks and identify suitable and sufficient control measures - If the hazard cannot be eliminated, assess the residual risk with the existing control measures in place (this can be done using the likelihood x severity matrix in MOD Form 5010) and determine if the existing control measures are adequate or if additional action is required to reduce the risk further. The implementation of additional control measures will be dependent on the residual risk and the cost (in terms of money, time and operational effect of not conducting the activity) of further risk reduction. A cost benefit analysis is one tool that can contribute to the justification that all reasonably practicable risk reduction has been implemented. Further questions regarding control measures include:

- a. can activity / process be reorganised to eliminate or reduce the risks?
- b. can access to the hazard be eliminated or reduced by isolating it or by engineering controls e.g. barriers, guards?
- c. is a written Safe System of Work, Safe System of Training, or additional training, supervision and welfare facilities required? (e.g. washing facilities and checking for removal of contaminants) and
- d. is Personal Protective Equipment (PPE) required? The use of PPE is a last resort and should not be preferred to other forms of risk elimination or reduction.

26. The level of acceptable risk is dependent on circumstances; the perceived risks of working in an office environment are different to those of working in a military front line hostile environment. The risk assessment should be sanctioned by the person with the appropriate authority and responsibility to decide when the level of risk is ALARP and tolerable, a well-constructed risk assessment will aid in this decision.

27. **Step 4** - Record and implement findings - The risk assessment should be recorded using the methodology of MOD Form 5010 (this form may be modified to meet local requirements by adding fields but not removing any or changing the methodology); be clear and concise with the minimum use of acronyms and control measures clearly summarised. The findings of risk assessments must be brought to the attention of those at risk of harm and appropriate training and instruction given on the implementation of the control measures. Temporary controls may be

necessary until full implementation of the identified additional control measures is achieved.

28. **Step 5** - Review the assessment and update if necessary - All risk assessments should be regularly reviewed at a frequency proportional to the risk (e.g. high risk – 6 monthly; medium risk – annually; low risk – every 2 or 3 years) or more frequently:

- a. where required by local instructions / procedures;
- b. if the safe execution of the activity relies on stringent supervision and / or adherence to a Safe System of Work;
- c. if there is reason to doubt the effectiveness of the assessment;
- d. following an accident or near miss;
- e. following significant changes to the task, process, procedure, equipment, personnel or management;
- f. following the introduction of more vulnerable personnel; and
- g. if a “generic” assessment has been in prior use.

29. There is no MOD requirement to rewrite a risk assessment just because the MOD form 5010 has been updated, however it is strongly recommended to ensure the most recent format is used when risk assessments are reviewed.

Retention of Records

30. Risk assessments and associated documents should be retained for a minimum of 3 years after expiry and in accordance with JSP 375 Volume 1, Chapter 39.

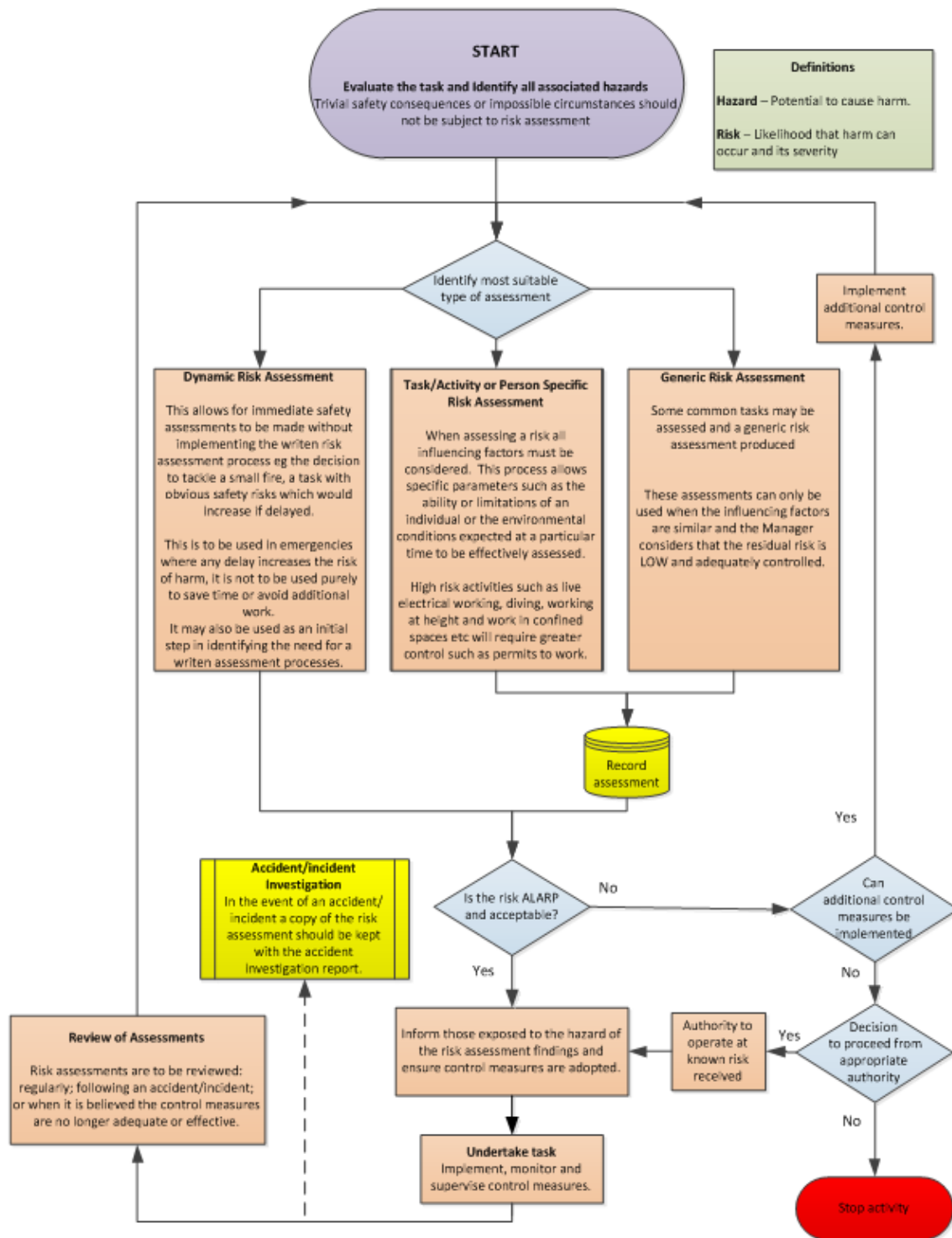
Related Documents

31. The following documents should be consulted in conjunction with this chapter:

- a. JSP 375 Volume 1:
 - (1) Chapter 2 - Office & General Workplace Safety;

- (2) Chapter 18 - Lone Working;
 - (3) Chapter 19 - The Health and Safety of Young Persons;
 - (4) Chapter 20 - New and Expectant Mothers at Work;
 - (5) Chapter 39 - Retention of Records; and
 - (6) Chapter 40 - Military Training for Land Systems.
- b. JSP 375 Volume 3:
- (1) Safety Rules and Procedures for working on the Defence Estate.
- c. Other MOD Publications:
- (1) DSA01.1 – Defence Policy for Health, Safety and Environmental Protection;
 - (2) DSA01.2 Chapter 2 – Requirement for Safety and Environmental Management Systems in Defence; and
 - (3) DSA01.2 Chapter 4 – Risk Management in Health, Safety & Environmental Protection.
- d. Legislation and Guidance:
- (1) [Management of Health and Safety at Work Regulations](#);
 - (2) [Merchant Shipping and Fishing Vessels \(Health and Safety at Work\) Regulations](#);
 - (3) [HSE - INDG163 - Risk assessment: a brief guide to controlling risks in the workplace](#);
 - (4) [HSE- HSG268 - The Health and Safety Toolbox: How to Control Risks at Work](#).

Risk Assessment Flow Chart



SITE RISK ASSESSMENT CHECKLIST

SITE HAZARD	DETAILED ASPECTS/STANDARD CONTROLS (Non-Exhaustive list)
1 Site Security	<ul style="list-style-type: none"> • Perimeter fences, gates maintained, known hazards fenced • Access to hazards within the wire prohibited from Service Families Accommodation / crèches etc. • Site regularly patrolled, especially hazard areas - water courses etc (are patrols "lone workers"?) • Security cameras, lights and alarms installed and operational • Unused buildings locked, windows shuttered etc • Key control (issue and returns) in operation with centrally managed 24 hour accessibility • Health and safety performance considered in selection of private guards • Control of guard dogs • Signs and notices posted
2 Emergencies	<ul style="list-style-type: none"> • Emergency procedures devised and tested • Assembly points and shelters identified • Emergency exits indicated and emergency lighting operable • Signs and notices posted • Procedures for rapid access to locked rooms (e.g. release of master keys)
3 Fire	<ul style="list-style-type: none"> • Fire patrols / fire wardens established • Liaison with local brigade established - contact telephone numbers available to Duty Staff • Alarms, sprinklers etc. maintained • Secure storage of flammable materials • Extinguishers available and maintained • "Housekeeping" maintained to prevent flammable / combustible materials accumulating • Emergency water supply tanks provided • Signs and notices posted
4 Explosives	<ul style="list-style-type: none"> • Is the site licensed? • Policies for disposal / removal established • Records of type / quantities of explosives used • Records available of Explosives Inspections / Audits • Signs and notices posted
5 Chemicals, Fuels & Oils	<ul style="list-style-type: none"> • Is the site licensed? • List of substances held, stored or used • DSEAR, COSHH and Risk Assessments available and up-to-date • Any chemically contaminated areas identified • Chemicals segregated where appropriate • Signs and notices posted

6 Biological	<ul style="list-style-type: none"> • Activities involving biological agents carried out on site and organisms involved identified • Contaminated areas identified • Organic waste disposal areas on site identified and controlled • COSHH Assessments available and arrangements in place to maintain and review assessments • Standing water treated / drained • Cooling towers, showers etc. treated for Legionella • Signs and notices posted
7 Asbestos	<ul style="list-style-type: none"> • Asbestos register maintained • Information available to contractors and maintenance workers • Signs and notices posted
8 Radiation	<ul style="list-style-type: none"> • Activities carried out on site involving the use / production of radioactive material • Registers and records maintained • Disposals recorded • Radioactive contaminated areas identified • Exclusion zones / control of access • Signs and notices posted
9 Pathways and Roads, Access and Egress	<ul style="list-style-type: none"> • Condition of roads, paths, gangways, stairs, bridges, etc maintained • Emergency access routes clear of obstructions, operable and maintained • Trip hazards and protruding object hazards removed • Access to high places restricted / controlled • Speed limits posted • Street lighting • Condition of doors, gates etc. monitored and maintained • Hedges and ditches maintained • Essential paths and roads included in snow and ice clearance plans • Speed reduction measures, traffic lights, controlled access onto main roads where appropriate • Signs and notices posted
10 Vehicles, Plant and Equipment	<ul style="list-style-type: none"> • Ownership identified and all plant included in Risk Assessments • Access to vehicles, plant and equipment restricted / made safe - especially for children • Measures to reduce plant noise where appropriate • Inspection and maintenance programme in place

11 Condition of Buildings and Estate	<ul style="list-style-type: none"> • Inspection and maintenance programme in place • Maintenance work monitored • Vacated / derelict buildings secured against access, services drained / isolated • Dangerous / hazardous trees or shrubs (fire / falling) • Signs and notices posted
12 Site House-keeping	<ul style="list-style-type: none"> • Site clearance policy • Approved waste removal contractors employed • Ground maintenance programme • Shelves, racking and stacked / stored items maintained safely • Signs and notices posted
13 Confined Spaces	<ul style="list-style-type: none"> • Register of confined spaces maintained • Unauthorised entry prevented by security and permit to work • Policy formulated for removal / opening up • Inspection / maintenance programme instituted with permit to work control • Signs and notices posted
14 Electrical	<ul style="list-style-type: none"> • Position of below ground supply cables recorded • Overhead supply cable runs maintained / protected • Inspection / maintenance programme in place • Lightning conductors maintained • Signs and notices posted
15 Water	<ul style="list-style-type: none"> • Underground pipe runs recorded • Inspection / maintenance procedures in place • Access to deep storage tanks strictly controlled • Signs and notices posted
16 Gas	<ul style="list-style-type: none"> • Effective shut off method location known and available • Underground pipe runs recorded • Inspection / maintenance procedures in place • Liaison with Gas Authority maintained • Signs and notices posted
17 Pressurised Gas	<ul style="list-style-type: none"> • Quantities held and location of pressurised gas holdings recorded • Storage methods secure and adequate • Inspection / maintenance programme in place • Policy for removal formulated • Signs and notices posted

18 Storage Tanks	<ul style="list-style-type: none"> • Position of substances and quantity held recorded • Policy for emptying / removal / making inert • Inspection / maintenance programme in place • Condition of containment bunds monitored • Signs and notices posted
19 Falls and Falling Objects	<ul style="list-style-type: none"> • Access to roofs, towers etc. strictly controlled • Inspection / maintenance programme for stairs, towers, masts etc • Inspection pits filled, fenced, or securely covered • Drain covers secure • Crawler board areas of roofs identified • Stability of towers / masts assured • Storm drains Risk Assessments completed, and any necessary action taken • Signs and notices posted
20 Contractors and Visitors	<ul style="list-style-type: none"> • Control / record of contractors / visitors coming on to site exercised at point of entry • Contractors / visitors informed of emergency procedures • Risk Assessments completed for contractors' work involving significant hazards • Permit to Work and written Safe Systems of Work for contractors strictly applied • Contractors' compounds are included in Site Safety Tour programme • Exchange information with contractors (including, where appropriate, risk assessments) • Signs and notices posted
21 Emissions and Processes	<ul style="list-style-type: none"> • Hazardous / polluting Emissions identified: <ul style="list-style-type: none"> ○ Air ○ Land ○ Water • Emission control policy established and in operation • Process waste identified and controlled • Records of all transactions concerning waste • Monitoring of emissions / waste