RLC
HEALTH, SAFETY AND ENVIRONMENT REQUIREMENTS

QPR-RHT-001

M WHITE 27/11/05	mohd A/RH 27-11-2005	7-12-2005
CUSTODIAN (RHT)	REVIEWED (RH)	APPROVED (DL)

Document Change History

Doc. No.	Issue No.	Issue Date	Revision Description	Page No.	Approved by
QPR.RHT.001	A0	01.12.2005	NEW DOCUMENT	ALL	

Remarks: Nil

Contents

1 OBJECTIVES

To provide the standards applicable to Ras Laffan Industrial City regarding the elements of OHSAS 18001 Health and Safety Management systems.

2 SCOPE

This specification describes the standards applicable for each of the elements contained in ISO14001 AND OHSAS 18001 systems.

3 DEFINITIONS AND ABBREVIATIONS

Contractor	An individual or organisation performing work for RLC, following verbal or written agreement. 'Sub-contractor' is synonymous with contractor.
Documentation	Any written information describing, defining, specifying, certifying or reporting activities, requirements, policy or results.
EMS	Environmental Management System
Employee	Means any person who is employed by Ras Laffan Industrial City and who receives or is entitled to receive remuneration.
Environment	Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation. ***NOTE:*** ***Surroundings in this context extend from within the organisation to the global system i.e. any environment which is effected or impacted upon as a result of Ras Laffan Industrial City's business.***
HSE	Safety, Health, Environment, Risk Management and Quality which refers to the organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the HSE Policy.
HSE Policy	Statement by the organisation of its intentions and principles in relation to its overall HSE performance that provides a framework for action and for the setting of its HSE objectives and targets.
HSE Management System	The part of the overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for

	developing, implementing, achieving, reviewing and maintaining the HSE policy.
Health	Means free from illness or injury attributable to occupational causes.
Interested Party	Individual or group concerned with or affected by the HSE performance of the organisation.
MSDS	Material Safety Data Sheet
OEL	Occupational Exposure Limits
Organisation	Company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration
PPE	Personal Protective Equipments- Apparel or apparatus which is worn to minimize the risk of injury or impairment to any part of the human body through physical contact, absorption or inhalation of a hazardous material.
RLC	Ras Laffan Industrial City
Safety	Means protected from any risk or hazard
Should	Signifies recommended or optional requirement
Shall	Signifies mandatory requirement

4 RELATED DOCUMENTS AND REFERENCES

QPR-RHT-002	- HSE Policy Implementation Document
QPR-RHT-003	- HSE Management System Manual
QP/REG-S-001	- QP Safety Regulations for Contractors

ISO 9001:2000

ISO 14001:2002

OSHAS 18000

QP/RLC Regulations

RLC Quality Management System Documentation

Management of Health and Safety at Work Regulations

Qatar Laws and Regulations

Back

5 RESPONSIBILITIES

The responsibility for developing and amending this document is that of the HSE Manager. The responsibility for ensuring compliance is the Managers. All employees are to ensure that the standards are implemented and adhered to. Approval hereof is by the Director: Ras Laffan Industrial City, or his delegate.

6 STANDARDS

The requirements associated with this document as per the preceding Sections, are the standards accepted and authorised by Management for implementation at Ras Laffan Industrial City. These standards define the minimum performance to which Ras Laffan Industrial City will comply in our endeavour to ensure that the Occupational Health and Safety management system complies with internationally accepted practices and contributes towards our objectives of achieving an incident free Ras Laffan Industrial City.

Every Manager and employee will implement the relevant elements of this document and ensure compliance with these standards within their respective workplaces to maintain compliance with ISO 14001 and the OHSAS 18001 systems.

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.11	Building and Floors

OBJECTIVE

- To ensure that all buildings, structures and floors are in generally sound condition to provide effective protection of personnel and equipment.
- To ensure that conditions will not cause injury to people or damage to property.

STANDARD

1. Floors, Stairs and walkways must be free of oil, water, obstructions, etc. that could create a slipping, tripping or bruising hazard. Obstructions can include cables or hoses that may cross over walkways.

2. All the means of escape/ emergency exits shall be clear of any obstructions, properly marked and suitably illuminated.

3. Location of Fire Extinguishers and other first aid fire fighting equipments shall be properly marked

4. Proper illumination shall be maintained all the time as per recommended practice.

5. There is to be no un-repaired or obvious damage to buildings and structures, preventing compliance to safety and functional requirements. If such damage is observed then it must be barricaded, if presenting a hazard or risk it must be repaired as soon as possible.

6. Broken/cracked windows must be replaced.

7. A defect reporting system must exist.

8. A high standard of housekeeping is to be maintained and basic cleaning is to be done daily.

9. Where necessary, facilities for handicapped/disabled persons must be made available.

Back

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.12	Lighting: Natural and Artificial

OBJECTIVE

To promote and maintain natural and/or artificial lighting within the framework of the statutory requirements and in cost-effective manner, thus promoting productivity, good environmental management, quality, health, safety, well being of workers and pleasant working conditions.

STANDARD

Lighting efficiency must comply with international best practice standards.

1. An approved and competent authority must conduct periodical survey of lighting efficiency levels. Health Risk Reports are to be available at the Industrial Hygienist. If light intensities do not conform to legally prescribed lux levels for a specific area, action must be taken to correct the luminance levels. The HSE Department shall make the arrangements for these surveys to take place.

2. Lighting surveys must also be performed after structural changes. The HSE Department shall be notified after structural changes have taken place to determine whether a lighting survey is necessary.

3. Lights are to be inspected daily (including offices) by all employees and fused or broken lights as well as damaged light fittings must be reported and are to be replaced with a light of the same luminance as the one being replaced as per the LUX intensity for that area.

4. Records of corrective actions taken on deviations must be kept by Infrastructure Department.

5. Each Department/area is responsible for keeping their windows, roof translucent sheets and light fittings clean.

6. Any large glass panes, such as those in large doors are to be marked by those responsible for civil engineering at Ras Laffan Industrial City in such a way that they are visible, to prevent persons from accidentally walking into them.

7. The Safety Inspection must include the checking and reporting of non-functioning/broken lights as well as broken windows and damaged translucent roof sheets.

8. The following deviations can occur and should be reported by any employee and are to be rectified by the Infrastructure Department or other relevant and competent party.

Back

- Lights flickering
- Lights causing glare
- Lights causing shadow
- Lights causing stroboscopic effects
- Too little light
- Lights removed, e.g. neon tubing/globes etc.
- Dirty lights and fittings
- Lights that may cause fire hazards
- Lights within reach (one meter) of combustible materials
- Lights in the incorrect position
- Lights with open and / or bare wiring
- Defective, loose and missing fittings
- Flame proof fittings in flammable areas
- Incorrect type of lights
- Damaged window panes
- Dirty fan lights

9. Emergency lights shall conform to the minimum required lighting levels and shall be provided in areas considered to be critical. Consideration should however be given to providing such lighting at the following areas:
   - At main sprinkler control systems
   - In/outside substations/ transformers
   - All emergency exits
   - Emergency assembly points
   - Perimeter lights
   - Main electrical distribution boards
   - Security control areas

10. Emergency lights are to be checked at a frequency according to best practice international requirements by Infrastructure Department. Any deviations are to be recorded and rectified. A formal record is to be kept of these checks.

11. Portable lights are to be checked as per the prevailing standards.

12. All lights, fittings and switches are to be labelled and identified as per the prevailing standards.

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.13	Work Environmental Stressors and Ventilation: Natural and Artificial

OBJECTIVES

To ensure that the working environment is free of any gases, dusts or vapours that can have a health risk to employees or have adverse effects on equipment.

STANDARD

Occupational health hazards (stressors) shall be identified and quantified. Ventilation, whether natural or mechanical, must be such that the air breathed by employees is safe and healthy. The exposure limit for prescribed substances should not to be exceeded and the concentration of any flammable gas, vapour or dust must not exceed its lower explosive limit. Ventilation must be adequate, specifically where hazardous or irritating substances are used. Where there is the danger of unsafe air being breathed, despite the precautions taken, all employees in the area must be provided with protective equipment that reduces the exposure to a safe level. They must be informed of the dangers and the precautionary measures to be taken.

1. A ventilation survey for both artificial and natural ventilation is to be conducted at a frequency determined by the Health Risk Assessment by a suitably competent person. In the case of the fume hoods (laboratory), battery room, basement, control room and the substations, survey must be done periodically.

2. An internal ventilation air contaminants survey (e.g. at the cooling towers) must be conducted periodically.

3. Artificial ventilation shall be provided and maintained where it is required. Ventilation openings shall be kept clean and filters maintained periodically as arranged by Infrastructure Department.

4. Where air contaminants are produced during the process, these should be monitored by a competent person at specific intervals and no person shall be exposed beyond the Occupational Exposure limits(OEL). The monitoring must be arranged by the HSE Department.

5. Material safety data sheets need to be obtained for toxic substances by the user or purchaser of the substance, which must also be made available to HSE Department. Arrangements for training and awareness of these MSDS to all persons using or being exposed to these substances must be provided/arranged by the relevant Manager/Supervisor in conjunction with HSE Department.

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.14	Sanitation and Plant Hygiene Amenities

OBJECTIVES

To ensure that hygiene facilities are clean and in a sanitary condition at all times. To prevent disease, food poisoning and a decline in the health of employees. To maintain an effective inspection and control system.

STANDARD

The facilities provided for employees, for example, rest rooms, toilets, personal lockers, change rooms and kitchens, must be adequate and kept in a clean and hygienic condition at all times.

1. Amenities must conform to the existing Ras Laffan Industrial City cleaning /hygiene and pest control services contract:
   - This applies to toilets (both permanent and temporary), urinals, showers, hand basins, ablution facilities, hand drying material, soap, wash basins, kitchens, food consumption areas, fridges, stoves, micro-ovens, personal lockers, broom and mop rack/stores cleaning materials and waste bins.
   - All cleaning materials such as soap, detergents, etc. shall be stored safely and neatly. Appropriate cleaning chemicals shall be listed in the MSDS file if it is a hazardous substance.
   - A company policy covering food, drink and smoking with the appropriate demarcation / symbolic signs shall be implemented. This policy/policies shall be developed by HSE Department.
   - A pest and vermin control program should be maintained by Site Services and regular control measures, as prescribed by a professional pest control Company, shall be implemented.
   - The safety inspection reports shall be monitored by the Managers/Supervisors on the sanitation of facilities and must submit written recommendations where appropriate.
   - The Industrial Hygienist shall implement a personal hygiene awareness program and keep records of deviations identified.

2. The Industrial Hygienist shall inspect the sanitation of facilities on regular basis. All defects shall be reported and followed up promptly. The follow up could be by means of maintenance notifications, engineering requests, purchase requisitions or training requests.

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.15	Pollution Prevention: Air, Soil and Air

OBJECTIVE

To ensure that pollution of soil, air and water does not exceed the legal requirements.

To dispose of pollutants or recycle them in such a way that they will not adversely affect the air, soil or water.

To inform all employees of the applicable standards and regulations requirement to follow an environmentally acceptable practices.

To determine the criteria for continuous monitoring and control of pollution of the atmosphere, soil and water.

STANDARD

Waste from some industrial processes can pollute water, air, soil and public dumping areas and could have a detrimental effect the on health of people, the environment and the ecology. The prevention of environmental pollution shall be in accordance with the RLC Environmental Policy and SCENR regulations.

The achieve the above mentioned objectives of pollution prevention, following standard/guidelines and/or procedures shall be established by RLC Environmental Section.

1. Environmental aspects for various work activities within the RLIC shall be established and documented with respect to probability of occurrence, control measures, severity of impact, detection time and the relevant legislation.

2. Documented Environmental Policy for Ras Laffan Industrial City.

3. Environmental Management System for RLIC shall be established to achieve improvements in overall environmental performance in line with the RLC's Environmental Policy.

4. Environmental Regulations for Ras Laffan Industrial City shall be established in conjunction with the standards issued by regulatory authorities such as Supreme Council for the Environment and Natural Reserves (SCENR). These guidelines shall be periodically reviewed and updated.

5. A waste management system shall be established for RLIC that incorporates the handling, storage, collection and disposal of wastes and the handling, storage, collection, removal and disposal of hazardous wastes.

Back

6. Any container of hazardous chemicals/substances, which is not returned to the supplier, should to be disposed of in the safest possible manner as per the prevailing environmental standards and regulations.

7. RLC Environment Section shall be contacted for any further help and/ or guidance on RLC Environmental Management System.

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.21	Aisles, Storage and Accessible Areas Demarcation / Signposted

OBJECTIVE

To have well-planned and clearly demarcated aisles, walkways, driveways, “keep clear” and storage areas, for optimal and safe storage of equipment, to ensure unobstructed workflow.

STANDARD

Well-planned demarcated aisles, walkways and storage areas will ensure safe working areas. These areas must be clearly demarcated with uniformly painted lines, railings or similarly durable and effective means. Demarcation must be kept in good condition, as employees are more inclined to ignore demarcation if it has become indistinct.

1 Storage follows the golden rule of **“a place for everything and everything in its place always”.**

The following areas shall be demarcated, where practicable

a. Storage and stacking areas
b. Non-stacking/storage areas
c. Parking areas
d. Non-parking areas
e. Walkways
f. Working areas
g. Motorised transport areas (driving)
h. In front of all fire equipment
i. In front of electrical switch gear
j. In front of emergency exit doors
k. In front of emergency equipment
l. In front of ventilation systems

2 Walkways, storage areas and working areas are to be demarcated clearly according to following standards and are to be adhered to:

- Storage areas (Grey) Yellow line (50mm wide)
- Aisles, walkways and working areas: White line 25mm wide and yellow line 50mm wide

Back

- Areas (Green) with white facing the aisles side. Walkways will be at least 1 meter wide.
- No storage area, for example: Beneath/in front of fire extinguishers – red block the width of a fire extinguisher, adding ± 150mm on both sides, as well as 200mm from wall, demarcated equipment, and distribution with a 50mm yellow line.
- Distribution boards – yellow block the width of the board, allowing 200mm from the wall.

3 Walkways are to be unobstructed and there are to be no loose lying material or equipment

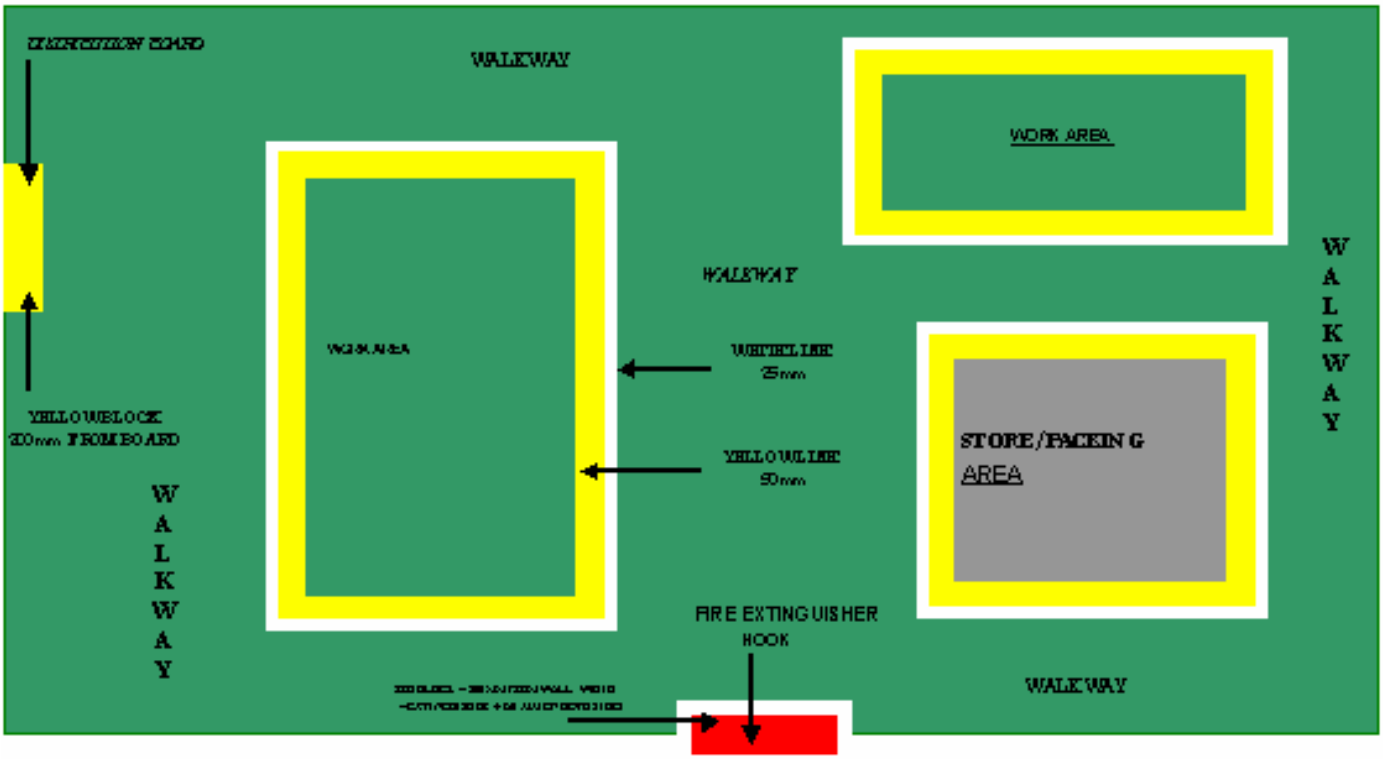
4 No obstructions are permitted to protrude into walkways or into no-stacking areas.

5 All waste-bin locations will be demarcated where reasonably possible to do so.

6 Suitable Safety Signs e.g. Emergency Exit, PPE, No Smoking, Flammable, Toxic etc. shall be posted all over the storage facility.

7 The floor demarcation of workshops, stores and electrical substations should be as per the drawing **QDW- RHT- 100- 001**

FLOOR DEMARCATION FOR WORKSHOPS, STORES AND ELECTRICAL SUBSTATIONS



QDW- RHT- 100- 001 Rev. A0 Sept.05

Back

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.22	Good Stacking and Storage Practices

OBJECTIVE

To ensure that stacked and stored materials are stable and controlled to prevent accidents and/or damaging of equipment. To create a system whereby the available space will be used effectively.

STANDARD

1. Material must be stacked on sturdy, flat surfaces capable of carrying the weight. Adequate space between and above stacked materials must be allowed, as well as enough space in the vicinity of electric lighting and water sprinklers.

2. The load must not be too heavy for the support it is resting on.

3. Material that can roll around must be checked, i.e. when stacking circular items, e.g. shafts, wheels, oil drums etc. then chocks, wedges must be used to secure the stack.

4. Stacking on cupboards, cabinets and shelves must be safe, tidy and stable.

5. No stacking shall be permitted on windowsills.

6. Stacking of any material or equipment in front of doors, means of escape/emergency exits, critical equipment, such as fire extinguishers or electrical distribution boards shall be strictly prohibited.

7. All gas cylinders shall always to be stored in an upright position, properly labelled and shall be secured properly or individually chained to prevent them from falling over.

8. Toxic and /or flammable material shall be stored at designated storage areas according to its compatibility as per the standard storage practices.

9. All the stacked material shall be labelled suitably and safe material handling practices shall always be followed.

10. Suitable Safety Signs e.g. Emergency Exit, PPE, No Smoking, Flammable, Toxic etc. shall be posted all over the storage facility

Back

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.23	Factory and Yard: Tidy

OBJECTIVE

To ensure that all working areas, as well as areas around buildings are neat, tidy and clean, to prevent injuries.

STANDARD

A prerequisite is the adequate provision of stacking amenities, the sorting of different materials and the removal of unusable materials. These actions will ensure optimum usage of floor space, as well as promoting good housekeeping.

1. No loose waste, such as paper, wood, scrap metal, etc. should be left lying around in working areas or outside. These areas must be kept neat and tidy. Where material is to be stored proper racks or storage facilities must be provided.

2. Weed control should be carried out where necessary under supervision of Site Services.

3. Suitable Safety Signs e.g. Emergency Exit, PPE, No Smoking, Flammable, Toxic etc. shall be posted all over the storage facility.

4. Thrash collection bins shall be provided in the area and locations clearly marked.

5. All working and outside areas shall be inspected regularly. Any deviations must be brought to the attention of concerned management representative.

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.24	Waste Management

OBJECTIVE

To ensure that there is a practical and effective waste removal system in place to minimise or eliminate environmental impacts and to ensure a tidy working area.

STANDARD

A waste is any refuse, garbage, other discarded materials or waste including any solids, semisolids, liquid material resulting from industrial, commercial or community activities which is discarded, removed or intended to be discarded. Type of waste shall be identified (waste inventory to be drawn up). Sufficient containers of correct type of refuse shall be provided, identified and placed in demarcated storage areas.

1. A waste management system shall be established for RLIC that incorporates the handling, storage, collection and disposal of wastes and the handling, storage, collection, removal and disposal of hazardous wastes.

2. Type of waste shall be identified and sufficient containers of correct type of scrap / refuse shall be provided, identified and placed in demarcated storage areas.

3. All bin/ container locations shall be clearly marked. The type of waste must be indicated on the bin/container. No containers shall be overflowing.

4. No chemicals shall be dumped into regular refuse containers.

5. An inventory of hazardous wastes at Ras Laffan Industrial City must be drawn up by the Environmental Section.

6. For more information and clarification on the waste management system, Environmental Regulations for Ras Laffan Industrial City, Rev. 1, 2005 shall be referred.

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.25	Colour Coding: Plant and Pipelines

OBJECTIVE

To have a uniform standard for equipment identification, to prevent any confusion with the identification of equipment.

STANDARD

The identification of plant components, the contents of pipelines, moving machinery and potential hazardous areas, must be uniformly marked throughout Ras Laffan Industrial City using standard colours, for immediate identification and to serve as warning against possible danger.

1. Pipelines (including water, steam, chemical, gas and fuel lines), dangerous moving machine components, storage areas, electrical conduit/cable channeling and appliances, walkways, no smoking areas, etc. are to be marked according to the QP and Ras Laffan Industrial City's colour code chart (**RLC/GL/002/2004**).

2. Colour code charts are to be displayed in prominent and conspicuous places, such as at plant entrances, control rooms and workshops.

3. Where considered to be a high risk area those structures where the potential for damage by motorised transport exists shall be coded with yellow and black chevron strips that are 50mm wide.

4. All personnel should be trained to make them familiar with the use of the colour codes (and the types) and the meaning thereof.

5. New machinery and plant must be colour coded prior to commissioning.

6. Safety valves must be colour coded for identification and maintenance purposes.

7. Low head bumping and tripping areas may be colour coded with yellow and black chevron stripes.

SECTION 1.00	PREMISES AND HOUSEKEEPING
Element 1.26	Resource Conservation Programme

OBJECTIVES

A program must be implemented to conserve water and energy sources at Ras Laffan Industrial City.

STANDARD

1 The Environmental Section shall co-ordinate efforts to identify significant water and energy conservation areas.

2 Flow meters shall be calibrated where appropriate by Infrastructure Department.

3 Indicators to measure performance shall be developed by the Environmental Section.

4 The Environmental Section shall co-ordinate efforts to develop/identify objectives and targets to promote conservation.

5 The Environmental Section shall arrange for reviews to be held to assess achievements and targets.

6 Resources Conservation Awareness Programme for the employees shall be developed by the Environmental Section and be implemented.

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.11	Machine Guarding

OBJECTIVE

To enclose all dangerous, moving and rotating parts on equipment to such an extent that no injuries to personnel can occur when coming into contact with these part(s) accidentally or deliberately.

STANDARD

1. No person is permitted to operate a machine or piece of equipment without all its guards and safety devices in place and in good working order.

2. All rotating axles, wheels, pulleys, gears, belts or couplings of machinery shall be provided with a suitable guard.

3. All machine guards shall be mounted firmly and be of substantial construction as well as be kept in position during normal operation of the machine.

4. The clearance between the metal guard and any axles, couplings, wheels, gears and pulleys shall not be less than 20 mm.

5. The maximum gap between the guard and machine framework should not exceed 6 mm.

6. The outside area of the guard shall be painted the same colour as the equipment, while the inside areas of the guard, as well as the danger points shall be painted as per the prevailing standard colour codes.

7. Splashguards shall be provided on glands and seals of any pumping equipment that handles strong acids, alkalis and hot products.

8. If any maintenance work needs to be done on guards, the relevant equipment must be out of commission, and where applicable, electrically and steam isolated. Repair to broken, ineffective, inadequate, and unsafe or missing machine guards should take precedence over production.

9. A machine guard inspection must be carried out periodically and all machines must be inspected.

10. All new or second hand machinery must be inspected before commissioning to ensure that adequate guards are provided to meet legal and Company Safety Standards.

11. Guards must provide maximum protection; the construction thereof must make entry of a finger, hand or any part of the body to the nip point impossible.

Back

12. Guards must not affect the operator's efficient operation of the machine.

13. Guards shall be a permanent part of the machine, but not weaken the structure of the machine.

14. Guards are not to create hazards such as nip-points and/or splinters.

15. Guards shall be designed as to provide easy access to parts requiring adjustment, maintenance and repair.

16. No shaft shall protrude more than a quarter of its diameter, and all shafts are to be guarded.

17. All drives shall be guarded front and back.

18. All couplings shall be guarded.

19. All V – belts shall be guarded (including vehicles).

GENERAL RULES

REVOLVING MACHINERY

Unless moving or revolving components of machinery are in such a position or of such that they are as safe as they would be if they were securely fenced or guarded, the user shall cause –

a) every shaft, pulley, wheel, gear, sprocket, coupling, collar, clutch, friction drum or similar object to be securely fenced or guarded;

b) every set screw, key or bolt on revolving shafts, couplings, collars, friction drums, clutches, wheels, pulleys, gears and the like to be countersunk, enclosed or otherwise guarded;

c) every square projecting shaft or spindle end and every other shaft or spindle end which projects for more than a quarter of its diameter is to be guarded by a cap or shroud;

d) every driving belt, rope or chain is to be guarded; and

e) the underside of every overhead driving belt, rope or chain above the passages or workplaces is to be so guarded as to prevent a broken belt, rope or chain from falling and so injuring persons: Provided that the provisions of this paragraph shall not apply where in the opinion of an inspector no danger exists in the case of light belts due to the nature thereof and the speed of operation.

ROLLS

The user shall, where practicable, cause every power driven machine consisting of or incorporating two or more rolls rotating in opposite directions, which are less than 75mm apart, to be guarded for the full length of the in running side or nip of the rolls where each nip is within the reach of persons using the following means:

a) a fixed guard; or

b) a trip bar a cable or an electronic sensing device not more than 300mm from the nip, which will stop or reverse the rotation of the rolls if the bar or cable is touched or if the danger area is invaded by any foreign object:

Provided that where it is not practicable to install any of the specified devices an inspector may require or permit any other means of protection at the intake of the rolls.

AIR COMPRESSORS.

The user of a positive displacement type air compressor which is not provided with automatic means for limiting the operating temperature to a safe level shall provide a fusible plug fitted close to the outlet valves or discharge ports of every stage of compression; Provided that the provisions of this regulation shall not apply to air compressors with a free air delivery of less than 8,5 cubic meter per minute or in which compression does not take place in the presence of lubricating.

REFRIGERATION AND AIR CONDITIONING INSTALLATIONS

No user shall use or permit the use of a refrigerator or an air conditioning installation unless it complies with a safety standard with respect to its construction, installation, operation and inspection.

EXPLOSIVE POWERED TOOLS

No user shall use or permit any person to use an explosive powered tool unless –

a) it is provided with a protective guard around the muzzle end which effectively confines any flying fragments or particles;

b) the firing mechanism is so designed that the explosive powered tool will not function unless-

- it is held against the surface with a force of at least twice its weight; and
- the angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle

Provided that the provisions of this sub regulation shall not apply to explosive powered tools in which the energy of the cartridge is transmitted to the bolts, nails or similar relevant objects by means of an intermediate piston which has a limited distance of travel.

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.12	Lock-out System and Usage

OBJECTIVE

To ensure that whenever any work on machinery needs to be done, the steam supply or electrical power supply to equipment can be locked out and completely switched off, until the work has been completed; and for the effective use and control of locks and blanking-off plates for the isolation of pipelines, valves and other equipment.

STANDARD

To prevent accidents occurring where equipment is put into operation while people are working on it, switches or valves must be locked in the closed or off position by the person working on that equipment.

1. Isolation and reconnection procedures for equipment must be done according to internationally recognized best practice.

2. The procedure for the lockout of on/off switches of electric motors is to be done according to internationally recognized best practice.

3. Isolation and reconnection procedures with respect to the use of locks is to be done according to internationally recognized best practice. All locks are to be numbered and must be on a register

4. Record is to be kept of all temporary and permanent blanking-off plates and strict control is to be exercised in respect of the removal and replacement of this type of isolation equipment.

5. All persons who are required to use the lockout procedure have received a copy of the written procedure and have signed for the receipt of the procedure.

6. The “ZERO ENERGY” concept is to be understood and is to be applied to any situation where unexpected motions of equipment undergoing repair, installation etc, could result in an accident or injury. This includes electrical, hydraulic, pneumatic, kinetic, radiation and other similar energy sources. Unexpected motion is to be precluded by removal of all sources of energy from any machine or equipment before any work is done on it.

7. Where two or more persons are working on a machine or equipment, each person shall lockout before commencing work.

8. The main switch shall be available at all times in each electrical distribution board, even after lockout has been affected.

Back

9. A lockout facility should be available on each piece of equipment.

10. All contractors working on site shall adhere to the lockout procedure.

11. After lockout has been applied the circuit is to be tested to ensure that there is zero energy in the circuit.

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.13	Labelling of Electrical Switchgears and Critical Valves

OBJECTIVE

To ensure that switchgear, isolators, contact breakers, critical valves and equipment are adequately marked for identification purposes, to prevent misunderstandings or faulty operation.

STANDARD

1. The following equipment/facilities shall be clearly labelled.
   a) Electrical distribution
   b) Sub stations
   c) All electrical and main switches as well as emergency switches (including emergency stop buttons and start buttons)
   d) Electrical sockets, wall and light switches.
   e) Valves, pumps, compressors, heaters and tanks
   f) Normal/domestic water ring main valve and electrical panels
   g) Mechanical guards
   h) Ladders
   i) Portable electrical equipment
   j) Electrical motors.
   k) Lifting machinery
   l) Lifting gear
   m) Apparatus/equipment involved in the lockout system.
   n) Earth leakage units.
   o) Fire mains and valves as well as fire fighting equipment
   p) Offices, transformer rooms
   q) Sampling points
2. All the above shall be suitably identified and labelled to ensure that only the correct equipment or process is operated, maintained, isolated and inspected.
3. The identification of all critical valves, switchgear, etc is of utmost importance to prevent any confusion, especially during emergency situations.
   a) All emergency switches shall be clearly marked.

Back

b) All switches in the distribution board shall be numbered and a legend displayed with a permanent labelling system placed in the door of the distribution board. The critical breaker number must be cross-referenced and each circuit breaker must be identifiable.

c) All light switches, lights and wall plugs should be numbered according to the lists placed in the distribution board and must indicate the corresponding number traceable to the circuit breakers.

d) All plant equipment such as pumps, compressors, heaters, tanks, etc shall be provided with clearly identified site numbers.

e) Critical valves shall be clearly identified (colour coded/identified) and tagged/indicated.

f) Each sampling point shall be clearly identified with a board specifying the type of product, dangers associated with the product, as well as the personal safety equipment and clothing that must be worn while handling the product.

g) Information boards mounted at the battery limits of the plant must specify the contents of pipelines.

h) The location of the transformer room, main switch, fire mains valve and normal domestic water ring mains valve shall be indicated on a lay-out plan of the premises.

i) All emergency stop buttons shall be red.

j) All start buttons shall be green.

k) “Open” and “Close” direction signage shall be indicated on a critical valve.

4. All distribution/fuse boards/panels shall be:

a) Colour-coded or be provided with the correct signage.

b) Identified with a suitable numbering system.

c) Indicated where it is fed from.

d) Provided with an index card that will be fitted to the inside of the Distribution Box door summarizing the labelling.

e) Each switch/circuit must be labelled in such a way that it describes, “what the switch represents” e.g. plug in office no. 30.

5. Labelling must be permanent and distinct.

6. All the fire fighting equipment and refuse bins will be labelled at the point of location and on the equipment.

7. All portable electrical equipment should be numbered and labelled.

8. All lifting equipment shall be numbered and labelled indicating:

- Equipment number
- Safe Working Load

Back

9. All valves shall be numbered and labelled indicating:
   a) number
   b) type of agent
   c) where is it critical

10 Updating shall be done after any changes that are made.

11 The description of all pipelines shall be clearly marked on pipes, showing direction of flow.

12 The direction of flow arrows shall be indicated at least every 5 meters as well as above/next to the valve where the pipe line enters/exits a wall.

13 The Supervisor must report deviations.

14 No equipment to be purchased/manufactured/used unless it complies with this standard.

15 Labeling of electrical switchgears and critical valves shall comply with RLC Equipment Identification and Tag Numbering System **ES.0.07.0025**

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.14	Ladders and Stairs, Scaffolding

OBJECTIVE

To ensure at all times that Ladders, Stairs, Walkways and Scaffolding are safe and functional, in order to prevent injury.

STANDARD

To prevent injuries as a result of falls, it is important that responsibility for the regular checking and controlling of critical items like Ladders, Walkways, and Platforms is clearly spelt out.

A. SCAFFOLDING

1. All scaffolding shall be provided with safe and suitable ascending and descending points, unless a ladder or stairway is used from an adjoining structure that is safe for this purpose.

2. All scaffolding shall be provided with adequate handrails and guard chains above each working platform of the scaffold.

3. Scaffold platforms shall be provided with toe-boards.

4. Scaffold platforms shall consist of sturdy scaffold planks or steel boards that have been properly secured with suitable clamps or wire. No gaps are allowed in-between the boards on scaffolding platforms.

5. All scaffolding shall be erected by competent persons only.

6. The area beneath a scaffold should be cordoned off in order to prevent anybody from walking through underneath the scaffold.

7. All scaffolding shall be inspected and approval granted by the responsible Safety Representative before being used, and as well as directly after bad weather conditions "Safe for use" boards and /or Scaffold Tag shall be attached. Deviations must be recorded and attended to promptly.

8. Scaffolding shall be built/erected in accordance with international best practice standards and as per the scaffolding requirements detailed in the relevant Ras Laffan Industrial City procedure.

9. Mobile Platforms, Chain Ladders and Stairs shall be numbered, registered and inspected periodically by an authorised competent person.

Back

10. Every time scaffolding is erected it shall be inspected by the authorised competent person.

11. All stairways, landings, open-ended platforms etc. shall be fitted with toe-boards.

12. All catwalks, platforms, walkways etc. higher than 1.8 m from the ground shall be fitted with toe-boards.

13. The height of any toe-board shall be at least 100mm and, if of wood construction, at least 35mm thick.

14. All fixed ladders, steel steps and steel staircases should be numbered and be logged into a Ladder Inspection Register and be inspected once per year. Inspections must be correctly recorded into a register.

15. All ladders shall be stored in dedicated storage areas, and where possible on purpose made racks.

16. All staircases or fixed steps with four or more risers must be fitted with handrails.

17. If a ladder is unsafe it shall be tagged “out of order” and taken out of use until it is repaired.

18. The bottom ring of the cage of any fixed ladder must be painted yellow and black.

19. Scaffold Checklist **QFM - RHT - 001 - 001** to be referred for this purpose

B. LADDERS

1. All portable ladders should be numbered and registered in a clear and legible manner.

2. All portable ladders shall be inspected by an authorised competent person periodically according to a control list (attached). Deviations must be recorded and attended to promptly.

3. All fixed/cat ladders should be numbered and be registered in a clear and legible manner.

4. All fixed/cat ladders shall be inspected by an authorised competent person periodically according to a control list (attached). Deviations must be recorded and attended to promptly.

5. Only wooden ladders are allowed in areas where they may come into contact with electrical energy sources at Ras Laffan Industrial City.

6. Portable ladders shall not be painted.

Back

7. Fixed ladders shall be inspected according to a standard checking regime.

8. Fixed ladders shall be provided with booms in a closed position

9. Ladders shall be stored horizontally on brackets fixed on a wall or onto racks.

10. Ladders shall not be used as scaffolding.

11. All ladders shall be fitted with safety feet/non-skid devices.

12. All ladders shall be in a safe and clean condition and defective ladders shall not be used.

13. No employees shall use a ladder that does not comply with these standards.

14. **Fixed ladders**

    a. All fixed ladders exceeding two (2) meters in height shall have a back support.

    b. All fixed ladders must:

    - Be numbered and put in a register.
    - Be checked periodically and deviations noted in a register.

15. Fixed Ladder Inspection Form **QFM – RHT – 001 – 002** and Action List of Ladders **QFM – RHT – 001 – 003** to be referred for this purpose.

16. **Staircase / Catwalks/ Platforms/ Stairways**

    a. Toe boards/kick plates shall be fitted to prevent equipment/objects falling down causing incidents and damage to equipment.

    b. Stairways, catwalks, landings and platforms shall be kept clear and maintained in a safe condition.

    c. To prevent slipping, non-slip / skid plates shall be fitted on the edges of the steps.

    d. All steps shall have a uniform step height.

    e. Steps with more than four rises/steps shall be constructed with one handrail onto the open side.

    f. Steps with more than eight (8) rises/steps shall be constructed with two handrails either sides.

    g. Kick plates / toe boards /platforms / catwalk and landing shall be fitted with handrails.

    h. All stairways/platforms/kick boards/handrails/landing/catwalks shall be inspected at least once in a year.

Back

SCAFFOLD CHECK LIST

DATE OF WORK COMMENCEMENT:	AREA:	SCAFFOLD NUMBER:

Scaffolding Inspections – Inspected by a competent person with adequate experience with the erection and maintenance of scaffolding, at least once a week and every time after inclement weather – replacing or changing of scaffolding

AT EACH INSPECTION TICK OFF THE ITEMS – MARK WITH CROSS IF FOUND DEFECTIVE AND SPECIFY COMMENTS BELOW

FOUNDATIONS	1	2	3	4	ENTRY	1	2	3	4	HANGING SCAFFOLD	1	2	3	4
Firm footing (foundation)					Ladders secured					Safe condition				
Sole plates under standards					500 mm above platform					Not overloaded				
Base plate under standards					Safe condition					Safe support beam				
Jack					Adequately braced					Hoisting equipment				
										Cables				
CONNECTIONS					STANDARDS					Couplings				
Correct structure					Vertical					Safety harnesses available				
Adequate ties					Safe condition					Inspected by competent person				
Ties reinforced					Correct spacing									
BRACES					SCAFFOLD LEDGER					SPECIAL SCAFFOLDING				
Enough braces					Correctly spaced					Inspected by competent person				
Adequate types					Firmly attached					Type of scaffold				
Correctly fitted					Safe condition									
PLATFORMS					MOBILE SCAFFOLDS					SIGNS				
Planking securely fastened					Correct caster wheels					Displayed as required				
Planking in good condition					Height/width ratio									
Toe-boards fitted					Bracing									
Guard rails fitted					Brake/Chock									

PLACE/TYPE	DATE	DEFECTS FOUND DURING INSPECTION	DATE RECTIFIED	SIGNATURE

Back

FIXED LADDER INSPECTION CHECKLIST

FIXED LADDER INSPECTION:						
DEPARTMENT:						
INSPECTED ON A YEARLY BASIS:						
DESCRIPTION		**NUMBER**	**REG**	**FAULTY**	**ACTION**	**DEF NO**
1	NUMBERED					
2	IS PROVIDED WITH A BOOM					
3	BACK REST					
4	RUNGS STURDY					
5	LADDER FIRMLY ATTACHED TO THE STRUCTURE AS WELL AS THE GROUND					
6	CORRECTLY COLOUR CODED (BLACK)					
COMMENTS:						
INSPECTION BY:						
DATE:						

QFM-RHT- 001- 002 Rev. A0 Sep 05

ACTION LIST FOR LADDERS

RAS LAFFAN INDUSTRIAL CITY ACTION LIST FOR LADDERS						
LADDER:		TYPE:			DIVISION:	
	DETAILS	CORRECTIVE ACTIONS	P.R.	IF P OR R/ DETAILS	CORRECTIVE ACTIONS	ACTIONS DATE
1	Loose steps or rungs	Repair if possible				
2	Loose screws or nuts	Repair if possible				
3	Loose hinges/spreaders	Repair if possible				
4	Stop on hinge spreaders defective	Repair or replace				
5	Rubber base and pad	Repair or replace				
6	Cracks in welding seams	Repair if possible				
7	General cracks or breaks	Repair if possible				
8	Extension ladder ropes	Repair or replace				
9	Extension ladder hooks	Repair or replace				
10	Extension ladder pulley	Repair or replace				
11	Marked legibly with dept's mark & number	Mark legibly				
12	Is ladder clean	If not, have cleaned				
13	Stability	Repair if possible				
NOTE: LADDERS MAY NOT BE PAINTED				Checked by:		
(P)	SPARES REPLACED					
(Q)	IN ORDER			Signature:		
(R)	ONLY REPAIRED – NO SPARES USED					

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.15	Lifting Machines and Lifting Tackles

OBJECTIVE

To ensure that Lifting Equipments and Tackles are in a good working condition and that they are used correctly.

STANDARD

The standard requires that all lifting machinery and tackle are inspected and tested regularly.

1. All lifting equipment for example cranes, hooks, steel slings, rope pulleys, fork lifts, jacks and chain pulleys, shall be numbered and marked clearly to a uniform standard and recorded in a register. These must be kept clean and in a good condition.

2. All lifting equipment shall be inspected and tested periodically by a competent authorised person and/or agency. The results of the inspection/test shall be recorded.

3. The safe working load in kilograms shall be affixed on all forklifts, weight bearing beams, pulley systems, slings, mobile and overhead cranes.

4. The weight bearing capacity of the pulley system shall not exceed that of the weight beam that it is attached to.

5. The Maximum Mass Load (MML) capacities shall be clearly marked on all equipment and on the structure to which it is attached. The MML should also be indicated on all trestles, jacks and similar equipment.

6. All hooks shall be provided with a safety catch. No more than 5% spreading of a hook shall be allowed, over and above the normal standard opening of the hook.

7. Damaged ropes, slings, and chains shall be immediately removed from the service and destroyed.

8. Inspections shall be carried out according to a schedule as indicated in the logbook for each type of crane (overhead or mobile).

9. All access routes to overhead cranes should be locked.

10. Load charts and hand signal signs shall be posted up in each mobile crane.

11. Persons doing light rigging shall have passed the relevant training module.

Back

12. Only certified operators shall operate the cranes and other lifting equipments.

13. The lifting and lowering of persons with mobile cranes shall be carried out according to the relevant safety requirements.

14. All mobile and overhead cranes shall be provided with a limiting device, to automatically lock in the closed position when the hook has reached its highest safe position.

15. All winch lifting equipment with the hoisting capacity of 5000 kg or more shall have an automatic cut-out to stop the winch from moving if the mass is higher than the hoisting capacity (except mobile swing arm cranes).

16. All mobile swing arm cranes with a hoisting capacity of 5 000 kg or more, should be at least fitted with an indicator that informs the operator at all times of the exact mass being lifted. If not, it shall be fitted with a limiting device that prevents the mass load being exceeded for a specific radius.

17. Any person (except for a qualified rigger) who undertakes hoisting or rigging must have had specific training. Any person operating a swing arm mobile crane with a maximum mass load of 5 000 kg or more must have undergone and passed an accredited training course.

18. All hooks should be punched / pop marked (where possible three marks) to allow the spread in throat opening to be measured. Distances between the marks must be recorded into a register. The initial mark will be recorded and when the hook is checked every three months the hook spread measurements should be recorded. Hooks shall be replaced if the spread exceeds 15% of the original measurement.

19. Safety latches shall be in place and checked to ensure that they are operational and functioning correctly.

20. Safe access and emergency escape ladders shall be provided for all overhead cranes.

21. The lifting mechanism of forklifts is classified as lifting gear and a register should be kept especially for this purpose.

22. All lifting gear whether rope, wire or chain should be stored on purpose made racks in a suitable storeroom when not in use.

23. The fundamental principal “KEEP CLEAR OF A SUSPENDED LOAD” must be understood and observed by everybody.

24. Signals must be standardised, and must be understood by all persons involved in lifting operations.

25. Where forklifts are used to lift humans, only a purpose-made cage with a certificate of approval from the competent authority shall be used, and all the prescribed precautions must be adhered to.

Back

26. Only properly trained and certified operators are allowed to operate the equipment for which they are certified.

27. The competent person shall ensure that all inspections are done as per lifting machine and lifting tackle standards and regulations.

28. QP regulations on Lifting Equipments , **QP- REG- Q- 001** Revision 3 shall be referred for this element.

All inspections work should be done in well-lit conditions and should be preceded by thorough cleaning. If there is any doubt at all about the competency of available personnel for inspection purposes then the service of a specialist should be called in. At no time shall repair-work be done to slings by the user.

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.16	Boilers, Pressure Vessels and Compressed Gas Cylinders

OBJECTIVE

To ensure that all pressure vessels are operated and controlled safely according to international best practice requirements to prevent injuries to personnel or damage to equipment.

STANDARD

1. All pressure vessels shall be properly identified and be recorded in an equipment register.

2. New pressure vessels shall be designed, manufactured and tested according to international best practice requirements,

3. Repairs to pressure vessels shall be carried out according to international best practice requirements and the relevant design codes and specifications.

4. All pressure vessels shall be provided with an identification plate.

5. Steam boilers shall be provided with a pressure gauge marked with a red line on the dial of the maximum allowable safe working pressure.

6. Pressure vessels shall be provided with a safety relief valve, which is sealed and provided with an identification plate indicating the date of the previous inspection, the number of the safety relief valve and its set point.

7. All safety relief valves shall be physically locked or sealed and recorded in an equipment register. These are to be subjected to regular scheduled maintenance, according to legal requirements.

8. All pressure driven equipment shall be recorded in an equipment register and be subjected to regular scheduled inspections, as well as annual testing of speed governors, according to an approved control list.

9. All Gas Cylinders (full or empty) shall be stored in an upright position and individually secured with chains to prevent them from falling over.

10. All Gas cylinders shall be stored in a suitable well-ventilated area, be marked as full or empty and be fitted with a safety cap/hood. All gauges shall also be in a good working condition.

11. Portable Gas Cylinders should not be transported without a cylinder valve cap or guard being in position. Only approved type cylinder connections shall be used

and hoses shall be of an approved type, clamped together and not be perished, defective or cracked.

12. The correct type of pressure regulator shall be used with each gas cylinder.

13. All oxy-acetylene equipment shall be inspected regularly and inspections are to be recorded.

14. All pressure gauges should be marked with a red line on the dial face indicating maximum permissible safe operating pressure.

15. All oxy-acetylene cylinders shall be fitted with flashback arrestors at the cylinders and with a non-return valve on the torch.

16. Oxygen cylinders shall be stored apart from cylinders containing flammable gasses.

17. Other cylinders containing gasses that will react shall be segregated and stored apart according to compatibility.

18. Hose connections shall be fitted with a safety chain or rope where compressed air is used if an automatic shut-off valve is not provided, and where the pressure is over 667 kPa.

19. Compressed air shall never be used for cleaning of personnel.

20. A safe work permit shall be issued before any work is done on any pressurised system.

21. Only the specified air hose as approved by the manufacturer or supplier of air-powered equipment shall be used.

22. Air compressors shall be inspected on regular basis to check that they are clean and in a safe condition.

23. Defect Report Form **QFM – RHT – 001 – 004** and Pneumatic Equipment Checklist **QFM – RHT – 001 – 005** to be referred for this purpose.

Back

DEFECT REPORT FORM

EQUIPMENT NUMBER:			EQUIPMENT DESCRIPTION:			
DEFECT DATE						
DEFECTS REPORTED						
REPORT ON REPAIRS DONE						
JOB CARD No						
JOB DONE BY						
CONTROL No						
DESCRIP. OF REPAIRS						
JOB SIGNED OFF: DATE						
SIGNED OFF BY:						
CONTROL NUMBER:						
DATE RECOMMISSIONED:						
RECOMMISSIONED BY:						
CONTROL NUMBER:						

Back

CHECKLIST: PNEUMATIC EQUIPMENT

EQUIPMENT TYPE:		
INSPECTION DATE:		
CHECKLIST: (Only one item per checklist)		
1	**Condition of safety guard and air fittings**	
2	**Is grinder wheel free of cracks and correct size?**	
3	**Free running of grinder wheel**	
4	**Operations of trigger or broken insulation?**	
5	**- Rotating speed during inspection is:**	
	- Normal rotating speed as stipulated on equipment is:	
6	**Overall condition**	
7	**Other**	
INSPECTED BY (NAME PRINTED)		
SIGNATURE AND CONTROL NO		
SIGNATURE OF RESPONSIBLE MANAGER/SUPERVISOR IN WHOSE AREA THE EQUIPMENT RESIDES		

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.17	Hazardous Chemical Substances (HCS) Control

OBJECTIVE

To have effective control measures in place to minimise hazards associated with the handling and storage of existing and new chemicals / substances.

STANDARD

Adequate procedures must be implemented for the control of existing chemicals, new chemicals as well as the process and techniques used in the manufacturing process. It is of utmost importance to keep record of all hazardous and chemical substances on site.

In the case of radioactive sources being utilised on site, the responsible person appointed, as well as his/her alternate must be licensed with the appropriate regulatory body.

1. An alphabetical list of all process chemicals and catalyst used in Ras Laffan Industrial City should be available, and kept up to date by the responsible person.

2. Each division (including Medical centre, User Departments and Warehouses) shall have a “Hazardous Substance Control Manual” which contains the alphabetical list of all the relevant substances and Material Safety Data Sheets (MSDS) which shall be reviewed and updated annually. The MSDS shall be readily available and accessible.

3. Divisions handling high-risk hazardous substances shall have MSDS for these substances readily available. The personnel responsible shall be trained in handling and dealing with hazardous substances and this must form part of the Area Safety Rules and Regulations.

4. A list must be available regarding the use and control of high-risk substances as required by legislation.

5. Exposure to hazardous substances shall be monitored regularly according to a schedule and a report submitted to the Heads of both Fire and Safety Section as well as the Manager/Supervisor for the area/employees concerned.

6. All products/chemicals shall be clearly labeled as per the list of substances.

7. The Hazardous Chemical Substance Controller for Ras Laffan Industrial City is the Industrial Hygienist.

8. For all new substances, Managers/Supervisors shall:

Back

- make sure that the Industrial Hygienist places the substance in a register,
- obtain MSDS before the substance is put to use, and
- ensure safe storage, handling and regular monitoring.

9. Radio active sources

a) Responsible persons for radio active sources shall be appointed

- Regular inspections/leak tests shall be done on sealed radioactive sources.
- An annual report about sealed radioactive sources shall be handed over to the Head of Safety Section each year.

b) All sources shall be secured / locked and barred against unauthorised access and the necessary notices displayed.

c) All relevant personnel who will be exposed to such sources shall be trained in the correct procedure for handling, maintaining and use of sources.

d) Employees responsible for radioactive sources shall undergo periodical medical surveillance.

e) The Industrial Hygienist for Ras Laffan Industrial City is responsible to ensure that Ras Laffan Industrial City complies with all licensing and other requirements concerning the use of radioactive sources.

10. Laboratory safety

The following points should be adhered to by all Laboratory Personnel when working with equipment.

- All chemicals shall be properly labelled.
- No eating shall be permitted in the laboratory

11. Where hazardous chemical substances are transported by contractors, they shall be supplied with the necessary MSDS.

12. All the applicable legal requirements shall be complied with at all times during the transportation of hazardous chemical substances.

13. All transportation staff should be trained on the hazards, methods, and spillage containment procedures of the substances that they transport (HAZCHEM signs to also be posted on vehicles).

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.18	Motorised Equipment Checklist, Licensing

OBJECTIVE

To ensure that motorised equipment and transport are used in a controlled and safe manner. To also prevent costly repairs to vehicles as well as to implement and maintain an effective inspection and control system.

STANDARD

The excessive wear and tear to motorised equipment can be controlled and minimised by the use of preventive maintenance checklists, as well as the thorough selection, training, licensing and supervision of drivers.

1. Only persons in possession of a valid drivers license should drive motorised equipment (excluding mobile cranes with a hoisting capacity exceeding 5 000kg).
2. Only persons who have passed an accredited training course (specifically for the operating and driving of mobile cranes), are permitted to drive and operate this equipment. A list of persons in possession of licenses for the operation of a forklift or mobile crane is to be kept at the relevant Section.
3. Motorcycle drivers must be in possession of a legal valid driver's license.
4. Vehicles must be inspected on regular basis by drivers or a pre-determined person, and the results of the inspection must be recorded on an official inspection form. All deviations must be attended too as soon as possible.
5. All training records are to be kept at the relevant Division. Only persons with a legal valid driver's license are to be appointed as full-time drivers and only they are permitted to drive company vehicles. These licenses must be checked by Supervisors regularly.
6. Drivers responsible for motor vehicles are obliged to keep them in a neat and clean condition.
7. All vehicles and motorcycles used on Ras Laffan Industrial City's premises must be roadworthy and licensed. (This includes all trailers).
8. All drivers/operators must have in their possession a license to drive / operate the class of equipment that they are authorised to operate.
9. An employee traffic and road safety awareness program must be implemented and maintained by the Safety Section.
10. Vehicle Inspection List **QFM - RHT- 001 - 006,** Checklist for Forklift Drivers **QFM - RHT - 001 – 007** and Motorcycle Checklist **QFM - RHT -001 - 008 to** be referred for this purpose.

Back

VEHICLE INSPECTION LIST BY DRIVER OF LDV/CARS/TRUCKS/TRACTOR

DATE:	REGISTRATION NO:
INSPECTION CARRIED OUT BY :	SPEEDOMETER: KM

NO	ITEM	CORRECT(X)	FAULTY(X)
1	Engine oil level		
2	Raidiator water level		
3	Brake fluid		
4	Head lights		
5	Parking lights		
6	Stop lights		
7	Indicators and reflectors		
8	Licence disc		
9	Windscreen / windows		
10	Windscreen wipers		
11	Tyres		
12	Battery		
13	Brakes		
14	Hooter		
15	Hand brake		
16	Jack		
17	Wheel spanner		
18	Spare wheel		
19	Hub caps		
20	Tyre pressure (pump if necessary)		
21	Scratches and dents to body work		
22	Number plates		

REMARKS:

Name of Driver :	Name of Supervisor :
Signature :	Signature :
Date & Time :	Date & Time :

Back

CHECKLIST FOR FORKLIFT DRIVERS

NOTE: This list must be completed at the start of each driver's shift, as well as by the driver whenever the forklift is taken out

DATE AND TIME PERIOD OF SHIFT	FORK-LIFT CHECK	SHIFT					
		MARK X IN THE RELEVANT BLOCK		MARK X IN THE RELEVANT BLOCK		MARK X IN THE RELEVANT BLOCK	
ITEMS TO BE CHECKED		CORRECT	FAULTY	CORRECT	FAULTY	CORRECT	FAULTY
Oil level – engine (1) Oil level – gearbox Water level – radiator Petrol level – tank Hand brake Foot brake Steering mechanism Idling speed of engine Hoist and tilting action Grip and turn action (2) Tyres General condition Other (specify)							

GENERAL REMARKS:

PARTICULARS OF DRIVER

Name (capital letters)	
Control number	
Drivers permit number	

This forklift has been inspected by me and its condition is as stated above

Signature: Date: Time:

Supervisor/ Foreman's Name :

Signature :

Date and Time :

Back

MOTORCYCLE CHECKLIST

DATE:

REGISTRATION NUMBER:	CORRECT	FAULTY	REMARKS
Visual inspection of controls, axles, suspension and steering components			
Hooter			
Indicators			
Reflectors			
Foot brake efficiency and brake lights			
Hand brake			
Head lights and parking lights			
Tyres – tread on front tyres			
Tyres – tread on rear tyres			
Tyre pressure – front (1,8 kg/cm^2)			
Tyre pressure – rear (2,0 kg/cm^2)			
INSPECTION CARRIED OUT BY:			
NAME AND SIGNATURE OF DRIVER:			

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.21	Portable Electrical Equipments

OBJECTIVE

To ensure the safe working condition of portable electrical equipment at all times. To safeguard employees against electrical hazards. (This includes contractors and labour hires employees).

STANDARD

All equipment using power through an electric cable from a socket is classified as portable electrical equipment and the condition of this equipment must be safe at all times.

1. All portable electrical equipment being the property of Ras Laffan Industrial City must be numbered and registered.

2. All faulty equipment shall be immediately withdrawn from use and sent for repairs (Users). Only a qualified electrician may join cables and this must only be done in accordance with acceptable safe practice.

3. All portable electrical equipment used frequently, for example hand drills, lead lights, extension leads, etc. shall be inspected at least quarterly.

4. All static equipment such as office fans, air conditioners, typewriters, etc. shall be inspected periodically.

5. All electrical equipment including private equipment such as radios, kettles, etc. that are operated with electrical power, are to be numbered and put on a register in a standardised system. These shall be checked regularly.

6. All portable electrical equipment used by contractors, shall be inspected and approved by the competent authority before being used within the RLC.

7. Portable electrical stores equipment shall be inspected each time it is received back, to ensure its safety when it is reissued.

8. Persons who do the inspections of the portable electrical equipment shall be trained on how to do the inspections.

9. Any faulty equipment must be immediately tagged and removed from use until it is repaired.

10. Only three-core cables shall be utilised except when the equipment is double insulated.

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.22	Earth Leakage (E/L) Relays: Use and Check

OBJECTIVE

To ensure that earth leakage relays function properly and provide the protection for which they are designed. To protect employees, contractors and labour hire employees as well as property from incidents involving electrical hazards.

STANDARD

All electrical circuits in workshops, kitchens, cafeterias, casualty rooms, laboratories, contractor sites and offices shall be equipped with earth leakage relays.

1. All 220V – 240V electrical socket outlets/circuits shall be provided with earth leakage relay units.

2. All earth leakage relays shall be tested at scheduled times to see that they conform to the mill ampere/time sensitivity tests.

3. All units not conforming to design set points shall be withdrawn and replaced.

4. Portable earth leakage units shall be available for work in confined spaces or for work inside metal structures.

5. All units shall be identified and records maintained in register.

6. Only trained person shall test the units at scheduled regular intervals.

7. The test results must be recorded in a register and deviations actioned.

8. The criteria for replacing an earth leakage unit is: Unit must be replaced if the sensitivity reading is below 15 mill amperes or if the sensitivity reading is over 30 mill amperes.

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.23	General Electrical Installations and Electrical Machinery in Hazardous Locations

OBJECTIVE

To ensure that general electrical equipment is inspected according to a schedule, to ensure safety.

STANDARD

All general electrical installations in the Ras Laffan Industrial City shall be inspected at least on an annual basis, by a qualified competent person to ensure complete safety. These inspections should ensure the following:

1. No open or damaged wiring or cables.
2. No open electrical distribution boards or switchgear cabinets.
3. No damaged switches or socket outlets.
4. No loose or damaged earth cables (Operations). All steel structures in operating areas are to be properly earthed.
5. Scheduled inspections shall be carried out on earth leakage systems and proper records shall be maintained.
6. Entry to all Electrical Sub-stations and Transformer houses shall be controlled and be for authorised personnel only.
7. Flameproof electrical equipment shall be inspected and tested as per scheduled frequency by a qualified competent person and records shall be maintained.
8. An inspection of the electrical distribution boards (DB's) shall be carried out by a qualified competent person periodically.
9. All the switches, circuit breakers in electrical distribution boards shall be labeled and a legend shall be displayed in the Distribution Board indicating the function of each circuit breaker/switch.
10. Lock out must be able to be facilitated on each circuit breaker or switch in any Distribution Board.
11. The main switch shall be available at all times even if the Distribution Board door is locked.
12. Faulty switches and socket shall be replaced / repaired immediately.

Back

13. All electrical conduit and cable channeling shall be colour coded as per best international standard practices.

14. All buildings and substations shall be grounded to an adequate ground field.

15. A resistance test of grounds shall be carried out at scheduled frequency, and be recorded.

16. Deactivated machinery is to be rendered safe and locked-out until such time as it can be removed or reactivated. Where electrical leads are disconnected from equipment, the bare ends are to be taped and the source lead isolated in the switch box.

17. Frames of all portable motor driven apparatus such as drills, saws, and grinders, except double-insulated, and shall be provided with grounding. The grounding shall consist of a 3-wire cord with a polarised plug for single-phase circuit and a 4-wire cord with a polarised plug for 3-phase circuits. If the plug is not compatible to any existing receptacle another means of grounding shall be provided.

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.30	Hand Tools

OBJECTIVES

To ensure adequate control of the condition, storage, correct and safe usage of all hand tools. To prevent incidents because of defective hand tools.

STANDARD

Control of the condition, storage and usage of hand tools is part of each safety program. It is the responsibility of each foreman or supervisor to exercise this control.

1. Hand tools include hammers, screwdrivers, tool trolleys, chisels, spanners etc.

2. Hand tools are to be stored in a safe and orderly way – a place for each one and everything in its place.

3. No damaged hand tools shall be used, for example files without handles, damaged or burred chisels etc. All personal and non-personal hand tools must be in a safe and clean condition.

4. Hand tools shall be inspected on regular basis, as applicable to a particular trade. (See attached example of a tool inspection list). Each section must set out their own inspection list for tools. Findings to be recorded in a register.

5. Tools like trolleys, wheelbarrows, brooms, spades, rakes, picks and valve keys should be included in the periodical inspections.

6. Bicycles should be in a roadworthy condition and checked periodically according to a Checklist. Bicycle Checklist **QFM- RHT- 001- 009** to be referred for this purpose

7. No homemade or makeshift hand tools shall be permitted for use.

8. Adequate broom racks should be provided for brooms, mops, squeegees etc. and they are to be kept on these racks when not in use.

9. Punches should be regularly ground down to prevent mushroom heads from forming.

10. Toolboxes shall be kept in a neat and clean condition. Tool Inspection Form **QFM-RHT- 001- 010** to be referred for this purpose.

Back

BICYCLE CHECKLIST

PART DESCRIPTION	CONDITION		REPAIR	RENEW	REMARKS
	GOOD	BAD			
Frame					
Saddle					
Handle					
Chain					
Chain sprocket – main					
Drive axle & bearing – main					
Pedals					
Pedal arms					
Pedal arm cotter pins					
Reflectors – rear					
Reflector – front					
Fork – front					
Wheel – front					
Wheel axle & bearing – front					
Wheel spokes – front					
Tube – front					
Tyre – front					
Mud-guard – front					
Fork – rear					
Wheel – rear					
Wheel axle & bearing – rear					
Wheel spokes – rear					
Tube – rear					
Tyre – rear					
Mud-guard – rear					
Chain sprocket – rear					
Pedal brake - rear					
Bicycle Number :			**Date & Time of inspection**		
Inspection done by: **Signature :**					

Back

RAS LAFFAN INDUSTRIAL CITY

TOOL INSPECTION FORM

NAME:		CONTROL NUMBER:				DATE:
ITEMS		CONDITION				REMARKS
		YES	NO	GOOD	BAD	
1	***HAMMERS***					
	Handle loose in head					
	Handle split					
	Handle wood - steel not allowed					
	Wedge - right size pick					
	Ball head not chipped or burnt					
2	***CHISELS***					
	Striking end - not burnt or chipped					
	Cutting end - not too slim					
	Materials-no home-made chisels only brand names					
3	***SPANNER FLAT***					
	Make - brand name					
	Must fit properly					
	Not to be weld repaired					
	No splitting of chrome or coating					
4	***SPANNER-RING***					
	Make - brand name					
	Must fit properly					
	Not to be weld repaired					
	No splitting of chrome or coating					
5	***SPANNER – SLOGGING***					
	Make – brand name					
	Ring – not stretched, yielded, broken or welded					
	Striking end – not burnt					
6	***SPANNER SOCKET***					
	Make – brand name					
	Not worn, yielded or welded					
7	***SOCKET SPEED WRENCHES***					
	Make – brand name					
	Ratchet – not worn or slipping					
	Handle – not bent or broken					
8	***SOCKET WRENCHES***					
	Make – brand name					
	Ratchet – not worn or slipping					
	Handle – not bent or broken					
9	***SOCKET UNIVERSAL***					
	Make – brand name					
	Female and male square – not broken or worn					
	Swivel joint – not worn or broken					

Back

RAS LAFFAN INDUSTRIAL CITY

TOOL INSPECTION FORM

NAME:		CONTROL NUMBER:				DATE:
ITEMS		CONDITION				REMARKS
		YES	NO	GOOD	BAD	
10	***SOCKET EXTENSIONS***					
	Make – brand name					
	Female and male square – not worn, broken or welded					
11	***SPANNER SHIFTING***					
	Make – brand name					
	Open end – not yielded or welded					
	Adjusting nut and thread – no wear					
	No splitting or flaking					
12	***PIPE WRENCHES***					
	Make – brand name					
	Jaws – not yielded, welded or burnt					
	Adjusting nut and thread – proper fit with no wear					
13	***HACK SAW***					
	Make – brand name					
	Frame – proper mounting of saw blade					
	Handle – not broken or bent					
14	***PLIERS***					
	Make – brand name					
	Jaws – not bent, broken, welded or burnt					
	Handles – not broken or welded					
15	***TIN SNIPS***					
	Cutting end – not bent, welded or blunt					
	Handles – not broken or welded					
	Securing bolt and nut – proper fit, not loose or missing					
16	***CROW BAR (TOMMY BAR)***					
	Make – brand name					
	Ends – not too sharp – breaking danger					
17	***SCREW DRIVERS***					
	Screwing end – not too sharp					
	Handles – plastic or wood, proper mounting					
18	***SCRAPERS***					
	Make – brand name					
	Handles – plastic, wood or steel					
19	***DIVIDERS – CALIPERS***					
	Sharp point protected – adjusting nut proper fit					

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.31	Ergonomics

OBJECTIVE

To ensure that the human being (in relation to his work place and working environment) is positioned in such a way that the work is done safely, comfortably, productively and in a stress free manner.

STANDARD

Ergonomics is the systematic study of productiveness of the person in relation to his place of work and working environment. The purpose is to reduce fatigue and stress of the worker, caused by incorrect work position in relation to machines, levers, etc. which in turn leads to low morale, poor judgement and sub standard productivity. This includes standardisation of control panels and equipment. The design and arranging of tools, chairs, desks and equipment must be of such a nature, that the worker can work effectively in the correct position without being exposed to dangers or unnecessary fatigue. A person must be assigned to conduct ergonomic surveys at Ras Laffan Industrial City and these activities are to be co-ordinated by the Industrial Hygienist.

1. Ergonomic deficiencies are to be identified by Supervisors during inspection.

2. A general ergonomic survey of the entire premises is to be conducted periodically.

3. Following aspects should be considered:
    - Is there adequate space for the task to be done?
    - Is there adequate room to move between equipment?
    - Are there any protruding pipes, valves, etc. in walkways that create obstructions?
    - Do employees have to lean or stretch dangerously to reach levers, valves or switches?
    - Is it a sedentary or standing work – if sedentary, are there enough chairs?
    - Is the work surface relationship to sitting or standing comfortable?
    - If sedentary work is done, is there enough legroom?
    - Are chairs in good condition?
    - Have adequate stairs, platforms been provided to avoid employees from walking on pipes, stretching to operate valves etc.?
    - Do the chairs have backrests for sedentary work?

Back

- Are instruments, equipment controls or job items placed in such a way to ensure a comfortable working posture?
- Are controls such as valves, switches, levers, handles in an accessible position i.e. not positioned too high or is it necessary to climb over other equipment to reach it?
- Are the shape, size, surface and material of levers/handles commensurate with the force that needs to be applied?
- Are instruments positioned such that parallax errors are avoided when taking readings i.e., readings must be taken square onto the instrument and not at an angle?
- Is lighting on instruments such that the reflection from the meter glass makes the taking of readings difficult?
- Are computer screens positioned to avoid reflections?
- Are there sufficient mechanical aids where heavy equipment needs to be manhandled?
- Are operators positioned in a manner to avoid heavy equipment falling on top of them?
- Where materials are manhandled, is the carrying distance minimised?
- Level and types of PPE required

4. Ergonomic factors should be investigated and taken into consideration during the project planning phase (systematic studies)

5. Ergonomic shortcomings should be identified during inspections before projects are handed over/ signed off and deviations must be addressed via an action list. Follow up inspections must be done to ensure that corrective action has satisfactorily been done.

6. Specific ergonomic surveys should be conducted in offices and areas where static machines are utilised and on motorised transport.

7. An ergonomic survey should be carried out if any machines are moved or if structural changes are to be made to any building.

8. An ergonomic survey shall be carried out while the machine operators are busy working.

9. Where possible the position of disabled persons should be taken into consideration, e.g. access to buildings.

10. Ergonomic Checklist **QFM-RHT- 001- 011** to be referred for this purpose.

Back

ERGONOMIC CHECK LIST

ASPECTS TO BE CONSIDERED DURING ERGONOMIC SURVEYS	IN ORDER	NEEDS ACTION	REMARKS
Is the working space adequate for the task adequate?			
Is there adequate room to move between equipment?			
Are there any protruding pipes, valves, etc, in walkways that create obstructions?			
Is sedentary or standing work – if sedentary, are there enough chairs?			
Is the work surface relationship to sitting or standing comfortable?			
If sedentary work is done, is there enough legroom?			
Are chairs in a good condition?			
Do the chairs have backrests for sedentary work?			
Are instruments, equipment controls, or job items placed in such a way to ensure a comfortable working posture?			
Are controls such as valves, switches, levers, handles in an accessible position, i.e. not positioned too high or necessary to climb over other equipment to reach it?			
Is the shape, size, surface, and material of levers/handles commensurate with the force that needs to be applied?			
Are instruments positioned such that parallax errors are avoided when taking readings i.e. readings must be taken square on to the instrument and not at an angle?			
Is lighting on instruments such that reflections from the meter glass do not make the taking of readings difficult?			
Are computer screens positioned to avoid reflection?			
Are instruments not in use clearly marked as such?			
Are there sufficient mechanical aids where heavy equipment needs to be manhandled?			
Are operators positioned in a manner to avoid heavy equipment falling on top of them?			
Where materials are manhandled, is the carrying distance minimised?			

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 A	Personal Protective Equipment (PPE): General

OBJECTIVE

To ensure strict control over the issuing and usage of personal protective equipment.

STANDARD

All PPE must be inspected regularly to ensure that the equipment is used properly and that the damaged Personal Protective Equipments (PPE) are replaced.

1. The prescribed Personal Protective Equipment shall be issued to every employee.
2. Personal Protective Equipment shall be inspected on a regular basis by the responsible supervisor.
3. No defective Personal Protective Equipment shall be issued.
4. The required Personal Protective Equipment that is needed while taking samples, shall be indicated on the sample point notice board.
5. Pictograms should be used to indicate the minimum Personal Protective Equipment required to be used for different tasks.
6. Requirement for special types of Personal Protective Equipment shall be described in the rules of operating areas.
7. A study to determine where and which kinds of PPE are needed should be carried out for each area and all areas and jobs must be considered.
8. Every employee using PPE shall receive on the job training by his/her supervisor in the correct use of PPE.
9. Contractor / outsiders / visitors etc. shall be provided with the necessary PPE before they are allowed into a restricted area.
10. Best industrial hygiene practices should be followed after finishing the job. (e.g. washing hands thoroughly with suitable cleaning agent etc.)
11. All the personal protective equipments shall comply with the appropriate standards listed in Standard Specifications Table **QTL- RHT- 001- 001**

Back

STANDARD SPECIFICATIONS TABLE

DOCUMENT NO.		DESCRIPTION
BS EN 133:2001	:	Respiratory protective devices. Classification
BS EN 136:1998	:	Respiratory protective devices. Full face masks
BS EN 137:1993	:	Specification for respiratory protective devices: self-contained open-circuit compressed air breathing apparatus
BS EN 140:1999	:	Respiratory protective devices. Half masks and quarter masks.
BS EN 142:2002	:	Respiratory protective devices. Mouthpiece assemblies. Requirements, testing, marking
BS EN 143:2000	:	Respiratory protective devices. Particle filters. Requirements, testing, marking
BS EN 144-1:2000	:	Respiratory protective devices. Gas cylinder valves. Thread connections for insert connector
BS EN 144-2:1999	:	Respiratory protective devices. Gas cylinder valves. Outlet connections
BS EN 149:2001	:	Respiratory protective devices. Filtering half masks to protect against particles
BS EN 166:2002	:	Personal eye protection. Specifications
BS EN 175:1997	:	Personal protection. Equipment for eye and face protection during welding and allied processes
BS EN 250:2000	:	Respiratory equipment. Open-circuit self-contained compressed air diving apparatus.
BS EN 340:2003	:	Protective clothing. General requirements
BS EN 342:2004	:	Protective clothing. Ensembles and garments for protection against cold
BS EN 343:2003	:	Protective clothing. Protection against rain
BS EN 352-1:2002	:	Hearing protectors. Safety requirements and testing. Ear-muffs
BS EN 352-2:2002	:	Hearing protectors. Safety requirements and testing. Ear-plugs
BS EN 352-3:2002	:	Hearing protectors. Safety requirements and testing. Ear-muffs attached to an industrial safety helmet
BS EN 352-4:2002	:	Hearing protectors. Safety requirements and testing. Level- dependent ear-muffs
BS EN 352-5:2002	:	Hearing protectors. Safety requirements and testing. Active noise reduction ear-muffs
BS EN 352-6:2002	:	Hearing protectors. Safety requirements and testing. Ear-muffs with electrical audio input
BS EN 352-7:2002	:	Hearing protectors. Safety requirements and testing. Level-dependent ear-plugs
BS EN 353-1:2002	:	Personal protective equipment against falls from a height. Guided type fall arresters including a rigid anchor line
BS EN 353-2:2002	:	Personal protective equipment against falls from a height. Guided type fall arresters including a flexible anchor line

Back

BS EN 354:2002	:	Personal protective equipment against falls from a height. Lanyards
BS EN 355:2002	:	Personal protective equipment against falls from a height. Energy absorbers
BS EN 358:2000	:	Personal protective equipment for work positioning and prevention of falls from a height. Belts for work positioning and restraint and work positioning lanyards
BS EN 360:2002	:	Personal protective equipment against falls from a height. Retractable type fall arresters
BS EN 361:2002	:	Personal protective equipment against falls from a height. Full body harnesses
BS EN 362:2004	:	Personal protective equipment against falls from a height. Connectors
BS EN 363:2002	:	Personal protective equipment against falls from a height. Fall arrest systems
BS EN 365:2004	:	Personal protective equipment against falls from a height. General requirements for instructions for use, maintenance, periodic examination, repair, marking and packaging
BS EN 367:1992	:	Protective clothing. Protection against heat and fire. Method for determining heat transmission on exposure to flame
BS EN 374-1:2003	:	Protective gloves against chemicals and micro-organisms. Terminology and performance requirements
BS EN 374-2:2003	:	Protective gloves against chemicals and micro-organisms. Determination of resistance to penetration
BS EN 374-3:2003	:	Protective gloves against chemicals and micro-organisms. Determination of resistance to permeation by chemicals
BS EN 388:2003	:	Protective gloves against mechanical risks
BS EN 397: 1995	:	Specification for industrial helmets
BS EN 405:2002	:	Respiratory protective devices. Valved filtering half masks to protect against gases or gases and particles.
BS EN 407:2004	:	Protective gloves against thermal risks (heat and/or fire)
BS EN 420:2003	:	Protective gloves. General requirements and test methods
BS EN 421:1994	:	Protective gloves against ionizing radiation and radioactive contamination
BS EN 443: 1997	:	Helmets for fire fighters
BS EN 455-1:2000	:	Medical gloves for single use. Requirements and testing for freedom from holes
BS EN 455-2:2000	:	Medical gloves for single use. Requirements and testing for physical properties
BS EN 455-3:2000	:	Medical gloves for single use. Requirements and testing for biological evaluation
BS EN 463:1995	:	Protective clothing. Protection against liquid chemicals. Test method. Determination of resistance to penetration by a jet of liquid (jet test)
BS EN 470-1:1995	:	Protective clothing for use in welding and allied processes. General requirements
BS EN 510:1993	:	Specification for protective clothing for use where there is a risk of entanglement with moving parts

Back

BS EN 529:2005	:	Respiratory protective devices. Recommendations for selection, use, care and maintenance.
BS EN 531:1995	:	Protective clothing for workers exposed to heat
BS EN 659:2003	:	Protective gloves for firefighters
BS EN 813:1997	:	Personal protective equipment for prevention of falls from a height. Sit harnesses
BS EN 943-2:2002	:	Protective clothing against liquid and gaseous chemicals, aerosols and solid particles. Performance requirements for “gas-tight” (Type 1) chemical protective suits for emergency teams (ET)
BS EN 1073-1:1998	:	Protective clothing against radioactive contamination. Requirements and test methods for ventilated protective clothing against particulate radioactive contamination
BS EN 1073-2:1998	:	Protective clothing against radioactive contamination. Requirements and test methods for non-ventilated protective clothing against particulate radioactive contamination
BS EN 1486:1997	:	Protective clothing for fire-fighters. Test methods and requirements for reflective clothing for specialized fire-fighting
BS EN 1827:1999	:	Respiratory protective devices. Half masks without inhalation valves and with separable filters to protect against gases or gases and particles or particles only. Requirements, testing, marking
BS EN 1836:1997	:	Personal eye protection. Sunglasses and sun glare filters for general use and filters for direct observation of the sun
BS EN 1891:1998	:	Personal protective equipment for the prevention of falls from a height. Low stretch kern mantel ropes
BS 7028:1999	:	Eye protection for industrial and other uses. Guidance on selection, use and maintenance
BS 7184:2001	:	Selection, use and maintenance of chemical protective clothing. Guidance
BS 7193:1989	:	Specification for lined lightweight rubber overshoes and over-boots
BS 8405:2003	:	Personal protective equipment against falls from a height. Descender devices. Single-hand operated descender devices for self or assisted rescue
BS EN 12021:1999	:	Respiratory protective devices. Compressed air for breathing apparatus
BS EN 12477:2001	:	Protective gloves for welders
BS EN 13087-1:2000	:	Protective helmets. Test methods. Conditions and conditioning
BS EN 13087-4:2000	:	Protective helmets. Test methods, retention system effectiveness
BS EN 13087-10: 2000	:	Protective helmets. Test methods. Resistance to radiant heat
BS EN 13287:2004	:	Safety, protective and occupational footwear for professional use. Test method for slip resistance
BS EN 13911:2004	:	Protective clothing for firefighters. Requirements and test methods for fire hoods for firefighter
BS EN 14058:2004	:	Protective clothing. Garments for protection against cool environments

Back

BS EN 14387:2004	:	Respiratory protective devices. Gas filter(s) and combined filter(s). Requirements, testing, marking
BS EN 14458:2004	:	Personal eye-equipment. Face shields and visors for use with firefighters and high performance industrial safety helmets used by firefighters, ambulance and emergency services
PD CEN/TR 14560: 2003	:	Guidelines for selection, use, care and maintenance of protective clothing against heat and flame
BS EN ISO 14877: 2002	:	Protective clothing for abrasive blasting operations using granular abrasives
BS ISO 16604:2004	:	Clothing for protection against contact with blood and body fluids
BS EN ISO 20344: 2004	:	Personal protective equipment. Test methods for footwear
BS EN ISO 20345: 2004	:	Personal protective equipment. Safety footwear
BS EN ISO 20346: 2004	:	Personal protective equipment. Protective footwear
BS EN ISO 20347: 2004	:	Personal protection equipment. Occupational footwear
BS EN 50321:2000	:	Electrically insulating footwear for working on low voltage installation
BS EN 50365:2002	:	Electrically insulating helmets for use on low voltage installations
BS EN 60903:2003	:	Live working. Gloves of insulating material
BS IEC 61942:1997	:	Live working. Gloves and mitts with mechanical protection

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 B	Personal Protective Equipment (PPE): Head Protection

OBJECTIVE

To define the standards applicable for head protection at Ras Laffan Industrial City and to avoid any incidents in this regard. To eliminate the severity of incidents which may cause head injuries.

STANDARD

1. A study to determine where, and which kinds of head protectors are needed should be carried out and all areas and jobs considered.

2. The appropriate symbolic signs shall be displayed at the entrances to all areas where the wearing of hard hats is compulsory.

3. Head protection prescribed for a specific job or area shall be worn at all times and no exceptions shall be made for anybody.

4. Visitors, customers, etc. shall be provided with the necessary head protection before they are allowed into a protected area.

5. A chart or matrix should be made available showing the areas where hard hats should be worn.

6. Head protectors shall be purchased as per the best international specifications.

7. The Supervisors must report and follow up on deviations.

8. No defective equipment shall be used. Employees should not deface or damage their helmets.

9. Supervisors shall be responsible to educate their employees in the correct use of head protectors.

10. Any person who enters areas requiring head protectors must wear the required headgear, regardless of whether the person works there or not.

11. Head protectors shall only be used for the purpose for which it is designed.

12. Head protectors should not be painted. No holes shall be drilled in a hard hat.

13. The inner lining shall not be removed from the hard hat. The inner lining shall be kept secured at all times.

14. All the head protection equipments shall comply with the appropriate standards listed in Standard Specifications Table **QTL- RHT- 001- 001**

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 C	Personal Protective Equipment (PPE): Eye and Face Protection

OBJECTIVE

To reduce the severity of incidents involving eye and face injuries.

STANDARD

1. A study should be conducted to determine where eye and face protection are needed, covering all areas.

2. Suitable eye protection shall be provided for all the different operations taking place on the premises.

3. The appropriate symbolic signs shall be displayed in the vicinity of all areas where wearing eye protection is compulsory.

4. Persons who normally have to wear spectacles shall have overspecs or prescription lenses hardened and mounted in an approved safety frame. This applies only to persons who are normally required to wear safety glasses in the execution of their work.

5. Eye protection shall be worn at all times when any kind of grinding work is done.

6. Special glasses and/or face protection shall be worn when decanting, mixing, or carrying out any similar operation with hazardous chemicals.

7. Where hazardous chemicals are used in large quantities, eyewash, or safety shower shall be readily available at all times.

8. A chart/matrix should be made available showing areas where eye/face protection should be worn.

9. Eye and face protection must be purchased as per the best international specifications.

10. The Supervisors must report deviations and follow up where necessary.

11. The supervisors shall be:
    - Responsible to check the condition of personal protective equipment of their employees.
    - Responsible to educate the employees in the correct use of eye and face protection.

12. No defective and/or damaged equipment shall be used.

Back

13. Any person that enters an area requiring eye and face protection must wear the eye and face protection required, as per issued standard.

14. Eye and face protection must only be used for the purpose for which it is designed for and as per issued standard.

15. No eye and face protection shall be painted or stickers stuck on to it.

16. No holes shall be drilled into eye and face protection.

17. A safety shield must be fitted at all bench grinders, if it is not practical then a face shield must be issued in addition to the safety goggles.

18. All eye and face protection must be kept clean and free from cracks and scratches.

19. Managers and Supervisors must enforce the use of eye and face protection.

20. All eye and face protection equipments shall comply with the appropriate standards listed in Standard Specifications Table **QTL- RHT- 001- 001**

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 D	Personal Protective Equipment (PPE): Footwear

OBJECTIVE

To ensure the appropriate level of foot protection for all employees at Ras Laffan Industrial City.

STANDARD

1. A study should be carried out to determine where and which kind of foot protection is required for all areas/jobs.
2. The appropriate symbolic signs shall be displayed at the entrance to all areas where the wearing of foot protection is compulsory.
3. No person shall be permitted into any area where foot protection is required unless wearing such protection.
4. Visitors, customer's etc. shall be provided with the necessary foot protection before they are allowed into an area where foot protection is required.
5. Where it is necessary additional protection for the bridge of the foot (metaguard) is to be worn.
6. Foot protection shall be purchased as per the best international specifications.
7. The Supervisors must report deviations and follow up where necessary.
8. The Supervisors must:
   - Check the condition of their employee's footwear.
   - Educate the employees on the correct use of footwear.
9. No defective and/or damaged footwear shall be used.
10. Any person entering areas where protective footwear is required must wear the required footwear regardless of whether the person works there.
11. Footwear must only be used for the purpose for which it is designed.
12. Care must be taken to ensure that the correct type and size footwear is being issued to the employees.
13. Maintenance of safety shoes is the responsibility of every employee e.g. Shoe laces, polish etc.
14. Industrial footwear shall comply with the appropriate standards listed in Standard Specifications Table **QTL- RHT- 001- 001**

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 E	Personal Protective Equipment (PPE): Protective Clothing

OBJECTIVE

To define the standard that will ensure that suitable protective clothing is provided and maintained to protect the employees at Ras Laffan Industrial City.

STANDARD

1. A study must be carried out by Safety Section in conjunction with the respective Managers/Supervisors to determine which kind of protective clothing is needed for different areas and jobs.

2. A matrix or chart should be made available showing the areas where Protective Clothing in respect of all the different jobs performed on the premises.

3. No person shall be permitted into an area without wearing the protective clothing that is compulsory for that area.

4. Visitors, customer's etc. must be provided with the necessary protective clothing before they are allowed into an area where the wearing of protective clothing is required.

5. Protective clothing shall be maintained and must be in a clean and good state of repair.

6. The Safety Section in conjunction with the Fire Section, Medical Services and employees should identify health related problems due Protective Clothing e.g. dermatitis due to detergent use in washing of clothing.

7. Protective clothing shall be purchased as per the best international specifications.

8. Protective clothing shall be replaced as the need for replacement becomes evident.

9. The Supervisors must:
   - report all identified PPE deviations.
   - check the conditions of their employee's protective clothing.
   - educate their employees on the correct use of protective clothing.

10. No defective personal protective clothing shall be used.

11. Any persons entering areas where protective clothing is required must wear the required protective clothing, regardless whether they work there.

Back

12. Protective clothing must only be used for the purpose, which they are designed for.

13. No torn or loose hanging overalls shall be permitted to use. Overall jackets must be zipped up the front when worn.

14. Care must be taken to ensure that the correct type and size of protective clothing is issued and worn.

15. Maintenance of protective clothing is the responsibility of each employee e.g. buttons missing, torn clothing, dirty equipment etc.

16. “Civilian” clothing such as jeans or windbreakers must not be worn over an overall.

17. The Managers/Supervisors must enforce this standard.

18. All the personal protective clothing shall comply with the appropriate standards listed in Standard Specifications Table **QTL- RHT- 001- 001**

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 F	Personal Protective Equipment (PPE): Respiratory Equipment

OBJECTIVE

To ensure that respiratory equipment is at all times freely available and in a good working condition in order to deal with any gas emergency. To protect employees against health hazards caused by poisonous/toxic gases, fumes, dust or where oxygen is insufficient.

STANDARD

1. The location of respiratory equipment shall be clearly indicated in all the areas.
2. All respiratory equipment shall be inspected as per the manufacturers recommendations by the authorised competent person according to a schedule and the results be recorded.
3. Escape Masks, Airline Hood Masks / Airline Cabinets should be inspected by the HSE Department as per the schedule and the results are to be recorded.
4. Oxygen Generators should be inspected by the HSE Department as per the schedule and the results are to be recorded.
5. All employees who are required to use respiratory equipment shall be given training in the correct use of respiratory equipment and attendance must be recorded.
6. All contractors, who are required to use respiratory equipment, shall be given training in the correct use of such equipment.
7. The HSE Department must perform annual surveys to determine the adequacy and condition of respiratory equipment.
8. A study to determine where and when respiratory equipment must be worn should be completed by the Head of both, Fire and Safety section and in conjunction with the Senior Medical Officer and Emergency Response Co-ordinator.
9. The correct types of respiratory equipment shall be provided to employees required to wear it.
10. Persons who are required to use self-contained breathing apparatus must attend a formal training course on the use and maintenance of this equipment, from someone who is qualified to perform such training.
11. All respirators with filter cartridges shall be inspected by the authorised competent person periodically and inspections are to be recorded in an inspection register.
12. Breathing apparatus shall be inspected on a regular basis by a competent person from the Fire Section and inspections are to be recorded in an inspection register.

Back

13. Respirator cartridges shall be replaced before expiry date.

14. At least one spare cartridge (expiry date still valid) should be kept for each respirator.

15. Respiratory equipment must be purchased as per the best international specifications.

16. The HSE Department must report all deviations.

17. The Supervisor must:
    - Check the condition of Respiratory Equipment worn by their employees.
    - Educate their employees on the correct use of Respiratory Equipment.

18. All employees required to wear self contained breathing apparatus or airline masks or who may need to do so in the event of an emergency must be medically tested for asthma or other respiratory ailments.

19. Respiratory Equipment must be worn where the mandatory signs are displayed. No defective and/or damaged respiratory equipment shall be used.

20. Any persons entering areas where respiratory equipment is required must wear the required Respiratory Equipment regardless of whether the person works there.

21. Respiratory Equipment must only be used for the purpose for which it has been designed.

22. Care must be taken to ensure that the correct type of Respiratory Equipment is issued and used.

23. When not in use Respiratory Equipment must be stored/kept in a designated suitable containers and/or cupboards to protect against dust etc.

24. Spot-checks should be done by both the Fire/Safety Section as well as users to ensure that the non-return valve on the cartridge type respirator is not rendered useless.

25. Regular checks on the condition of the cartridge type respirators should be carried out by both, the Fire/Safety section as well as users with special attention for fine cracks in the sidewall and seals. The records of these checks shall be maintained.

26. No natural or mineral oils should be used to achieve a better seal.

27. No solvents, chemicals and/or sharp detergents shall be used to clean Respiratory Equipment, e.g. thinners, petrol etc. The cleaning shall be done as per the manufacturer's recommendations.

28. All the respiratory equipments shall comply with the appropriate standards listed in Standard Specifications Table **QTL- RHT- 001- 001**

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 G	Personal Protective Equipment (PPE): Hearing Conservation

OBJECTIVE

To prevent/minimise noise as well as the potential for induced hearing loss.

STANDARD

1. A noise survey shall be conducted by a qualified Industrial Hygienist at least every two years and all areas where noise levels exceed 85 dB (A) shall be demarcated as noise zones.

2. All persons working in a noise zone shall wear approved hearing protectors at all times. The wearing of hearing protectors shall be strictly enforced at all noise areas.

3. All persons who work in noise zones shall undergo hearing acuity testing at the Medical Centre once a year. The Industrial Hygienist shall identify these persons and co-ordinate their attendance. Senior Medical Officer shall maintain records of all such hearing tests.

4. When a noise area is initially identified an attempt should be made by the concerned area Managers/Supervisors to reduce such noise at its source. If the noise cannot be reduced at the source, approved hearing protectors shall be provided to persons working in the area.

5. All noise zones shall be identified by a qualified Industrial Hygienist and symbolic signs shall be posted in the area.

6. Noise measurement levels should be completed by a qualified Industrial Hygienist for all new or modified processes before commissioning. Copies of results of noise surveys shall be available at the HSE Department.

7. Record should be kept of employees per area tested for hearing loss as part of a Medical Surveillance Program. These records shall be maintained by the Industrial Hygienist.

8. Hearing protectors must be purchased as per the best international specifications.

9. The Supervisors must:
   - Check that their employees have been issued with and wear their hearing protection at noise zones.
   - Ensure that the employees are educated in the correct use of hearing protectors.

Back

10. No defective and/or damaged hearing protection shall be used.

11. Any persons entering areas where hearing protection is required must wear hearing protectors, regardless of whether they work there.

12. Hearing protectors must only be used for the purpose for which they were designed.

13. Regular checks must be conducted by the Safety Officers and Supervisors on the condition and correct usage of hearing protectors.

14. Any person that works in any noise zone shall:
    - Be medically checked before employment
    - Be checked on a regular basis
    - Be removed from a noise zone if deterioration is detected in his/her hearing.
    - Wear the hearing protector(s) in the manner in which it is intended to be worn.

15. All employees wearing hearing protectors shall be educated by the Supervisor on “ear” hygiene and maintenance of hearing protectors.

16. Hearing protectors should not be washed with solvents or strong detergents e.g. petrol, thinners etc. The cleaning shall be done as per the manufacturer’s recommendations.

17. The Managers/Supervisors must enforce this standard. (where applicable)

18. All the hearing protection equipment shall comply with the appropriate standards as listed in Standard Specifications Table **QTL- RHT- 001- 001**.

Back

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 H	Personal Protective Equipment (PPE): Safety Harnesses

OBJECTIVE

To ensure that Safety Harnesses are correctly stored and inspected on a regular scheduled basis, in order to comply with prescribed safety requirements. To ensure that controls are in place to protect employees working at heights.

STANDARD

Safety harnesses, and rescue ropes are essential to protect employees from injury or death when working at elevated positions and where the danger of falling exists.

1. Safety Harnesses shall be issued on request after its condition has been visually inspected and where the possibility of employees falling from an elevated position exists.

2. Safety Harnesses, Ropes and Chains are to be numbered and inspected according to a schedule, by an authorised competent person. Records shall be maintained for inspection results.

3. Safety Harnesses shall be used where work is done at a height of two meters and higher from ground level and concerned employees be trained in the use of Safety Harnesses.

4. The type of harness provided shall be appropriate for the job to be carried out.

5. Harnesses must be inspected after use by the user and the Supervisor for any visible damage.

6. The Supervisor must ensure that the employee is familiar with the harness and that it is safe to use.

7. The Managers/Supervisors must enforce this standard. (where applicable)

8. All the personal protective equipments against fall from height shall comply with the appropriate standards listed in Standard Specifications Table **QTL- RHT- 001-001**

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 I	Personal Protective Equipment (PPE): Hand Protection

OBJECTIVE

To protect workers hands against injury or harm.

STANDARD

1. All areas and tasks that require hand protection shall be identified and documented in a matrix by the concerned Managers/Supervisors.

2. Person/job specifications must be made available which identify substances that may cause allergies.

3. Hand protection shall be provided to all persons required to wear such protection.

4. Hand protective equipment/materials shall be maintained in a good state of repair.

5. Barrier creams shall be provided where it is needed i.e. workshops.

6. Employees with severe skin irritations shall be referred to a dermatologist.

7. Hand protection shall be supplied/ worn by employees who are responsible for the replacement of fluorescent lights.

8. Hand protection must be purchased as per the best international specifications.

9. The Supervisors shall:
   - Check the conditions of hand protection issued to employees
   - Educate their employees on the correct use of hand protection and barrier creams.
   - Report deviations

10. Tasks which require the use of hand protection such as barrier creams must be indicated on the employee's medical check/man-job specification. These employees should be tested for skin sensitivity. This is to be co-ordinated and arranged by the Industrial Hygienist.

11. The correct barrier cream must be purchased according to the type of exposures and risks applicable to the tasks.

12. If any skin deterioration is noted, then the employee is to be treated and/or stopped from performing the task that is necessitating the exposure.

13. Hand protection must only be used for the purpose, which it was designed for.

Back

14. All areas/tasks requiring hand protection must be sign-posted by the mandatory sign.

15. Any persons entering these areas must wear the required hand protection regardless of whether he performs work in the area.

16. Hand protection must be stored properly e.g. in cupboards etc.

17. Care must be taken to issue the correct size and type of hand protection.

18. Damaged or old hand protection that no longer serves the purpose or that may have an expired life shall be destroyed to prevent the re-use, abuse or re-issue thereof.

19. Employees shall be educated on “hand” hygiene. This is to be co-ordinated by the Industrial Hygienist.

20. The Managers/Supervisors must enforce this standard.

21. All the hand protective equipments shall comply with the appropriate standards listed in Standard Specifications Table **QTL- RHT- 001- 001**

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.40 J	Personal Protective Equipment (PPE): Control Over Personal Protective Equipment

OBJECTIVE

To ensure control over the purchase, issue, wearing of, maintenance, and replacement of all personal protective equipment.

STANDARD

1. Each employee shall be issued with all the necessary personal protective equipment that is needed to carry out his/her job safely.

2. Each employee must sign a commitment to wear his/her PPE as prescribed on receipt thereof.

3. Each employee shall be instructed by his/her Supervisor in the correct use and maintenance of his/her PPE.

4. PPE shall be maintained in a clean and good state of repair, and shall be replaced once it is no longer serviceable.

5. A training syllabus should be developed, implemented and available for all users of PPE. This must be co-ordinated by the respective Supervisors.

6. Wherever protective equipment is required to be worn a symbolic sign shall be posted in a conspicuous place to remind the employee of his/her obligation to wear it.

7. Supervisors must carry out regular inspections to ensure that PPE is in a clean and serviceable condition.

8. A procedure must be available for removing redundant PPE from the premises.

9. PPE will be issued in terms of the Ras Laffan Industrial City PPE procedure.

SECTION 2.00	MECHANICAL, ELECTRICAL AND PERSONAL SAFEGUARDING
Element 2.50	Electrical, Mechanical, Protective Equipment, Traffic Signs and Symbolic Signs

OBJECTIVE

To ensure that employees' attention is drawn to dangers associated with electricity, machinery, fires, toxic materials, as well as personal protective equipment requirements, by means of notices, signs and traffic signs.

STANDARD

Symbolic safety signs facilitate the identification by employees of operational dangers, without the use of words and notwithstanding language and ethnic differences or degrees of literacy.

1. Managers/Supervisors shall ensure that Pictograms/identification boards are affixed at conspicuous places.

2. The meaning of symbolic signs should be explained to employees by Supervisors during their site specific induction training.

3. Pictograms must conform to the Colour Code standards and standards applied by the traffic authorities in Qatar.

4. All sample points in RLC shall be provided with sample point boards, which clearly indicate the type of product and personal protective equipment required.

5. Notice boards should not be obscured/ obstructed.

6. Sub stations shall be provided with the following notice boards conforming to legal requirements:

   - Unauthorised entry prohibited.

   - Unauthorised handling or interfering with electrical machinery.

   - Emergency procedures in case of fire.

   - General emergency procedures.

7. Notice boards shall be displayed where hazardous materials are handled, in order to indicate the necessary safety requirements.

8. All notices and signs shall be clearly visible, clean and in good condition.

9. The specifications for written notices are left to the discretion of the user, and must conform to the Colour Code.

Back

10. The standard heights at which road signs must be installed is as follows:

Stop and yield signs	-	From ground level to below board 1.5m
Keep left arrows	-	From ground level to below board 750mm
All other road signs	-	From ground level to below board 2.1m

11. Standardised signs should be displayed where required and be in a good condition.

12. Damaged or faded signs shall be removed and replaced as soon as they are discovered.

13. A survey should be carried out to determine if the correct symbolic signs are displayed where they are required.

14. All the appropriate signs shall be displayed at sub-stations and at live conductors.

15. All workers should be given training in the meaning of the signs used on site.

16. All signs shall be mounted in such a manner that they are clearly visible at all times.

17. Symbolic signs should be used instead of notices wherever possible.

18. All notices and signs must be purchased as per the best international specifications.

19. The HSE Department shall conduct a survey to establish where and what safety signs need to be erected.

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.01	Fire Extinguishing Equipment

OBJECTIVE

To ensure that the correct types of fire extinguishing equipment are available, easily accessible and in a good working condition.

STANDARD

1. A survey covering all areas of the premises shall be conducted by the Fire Section to identify the fire risks.

2. The correct types of fire equipment shall be provided for each identified risk area.

3. The fire equipment shall be strategically located in relation to the fire risk e.g. at the exit to an office or room.

4. A list of all fire equipment, including fire hydrants, hose reels and extinguishers, shall be compiled by Fire Section in conjunction with Infrastructure services

5. All fire equipment shall be indicated on a lay out plan of the premises.

6. All welding trolleys and oxy-acetylene sets shall be supplied with dry powder fire extinguishers of suitable capacity.

7. Where possible Ras Laffan Industrial City must standardise by using one or two types of fire extinguishers, and this must especially be taken into consideration when new equipment is acquired (the purpose is to minimise confusion during a fire).

8. Fire equipment should not be positioned too high above floor level. Relevant standard practices shall be adhered to.

9. No fire extinguishers shall be located too close to the fire hazard, thus rendering them inaccessible during a fire situation.

10. All fire extinguishing equipment should be numbered by the Fire Section and a record is to be kept of where it is situated.

11. *Fire extinguishers in offices*: only the fire extinguishers number is required against the wall, next to the mounted extinguisher. The number must be visible whilst the extinguisher is in position and a symbolic sign must indicate the location of the nearest fire extinguisher. Refer drawing QDW-RHT-001-002 for details.

12. *Fire Extinguishers in workshops*: a red block against the wall is required which is the size of the width of the fire extinguisher plus 150 mm on both sides – and the

height of fire extinguisher plus 150 mm above the handle. The fire extinguisher number must be displayed on the wall. Refer drawing QDW-RHT-001-003 for details

13. Fire Extinguishing Equipments shall be inspected by the Fire Section periodically with checklists and the results recorded.

14. Emergency Equipments cabinets shall be sealed and provided with an inventory list listing the contents of the cabinet.

15. For standby purposes the only equipment that may be used must be located in the plant/section cabinets.

16. Sprinkler systems shall be checked by the authorised competent person as per schedule.

17. No vehicle parking shall be permitted in front of fire hydrants, monitors, fire extinguishers and any other emergency equipments.

18. All fire fighting equipment must be sited/positioned/located/sign posted and demarcated where they are not hidden by obstructions.

19. The locations of Fire Equipment should be reviewed by the Fire Section as necessary.

20. No fire equipment shall be removed without the authority of the Head of Fire Section.

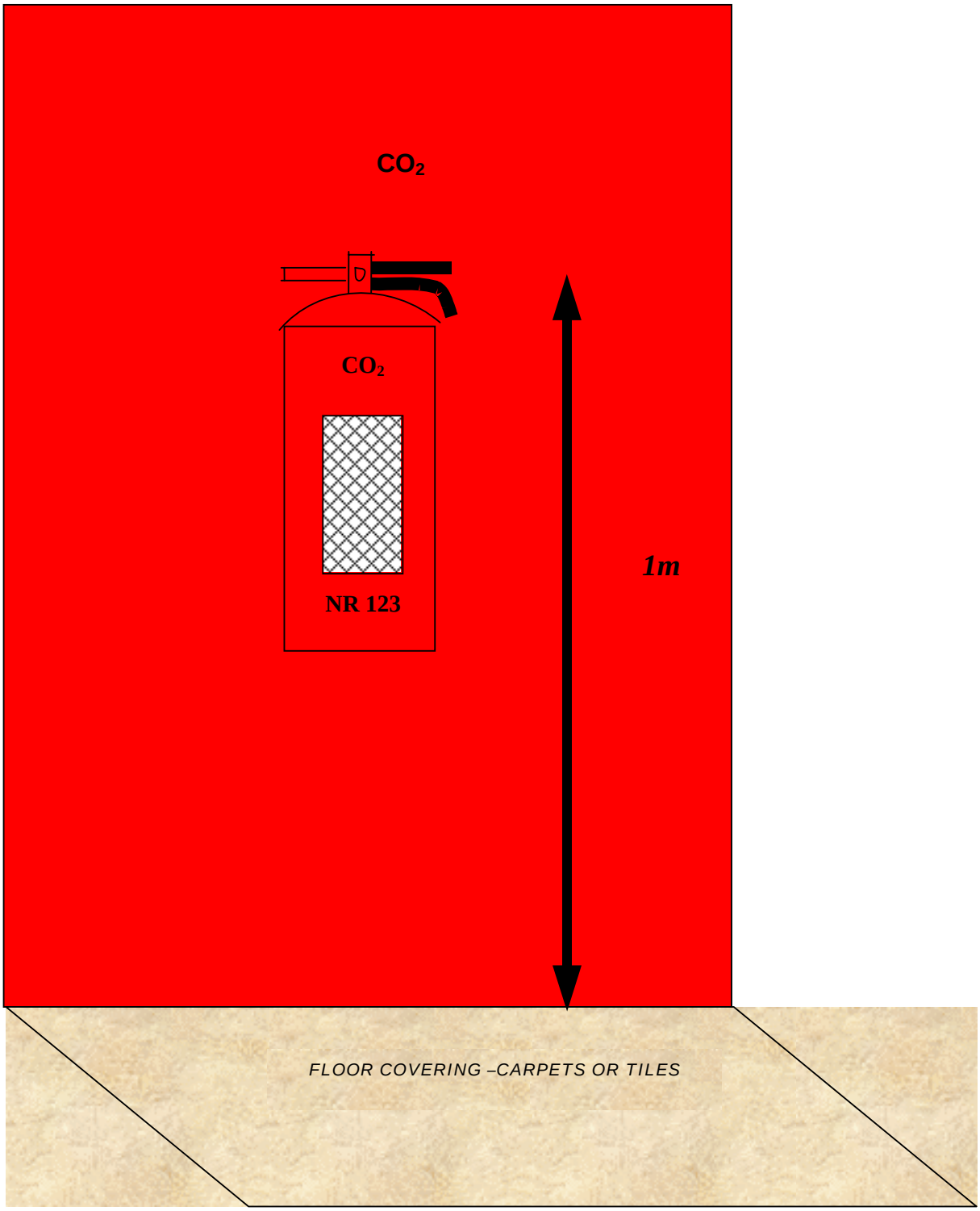
21. All Fire Extinguishers and Hose Reels shall be serviced by a competent servicing agent as per schedule.

22. Signage shall not be permitted to become faded. Damaged signs shall be replaced immediately. Managers/Supervisors must ensure that this standard is adhered to.

23. Managers/Supervisors must see to it that missing signs are replaced as soon as possible.

24. It is the responsibility of the Ras Laffan Industrial Head of Fire and respective Managers/Supervisors to educate the employees to adhere to this standard.

DEMARCATION OF FIRE EXTINGUIHSERS IN BUILDINGS/OFFICES WITH FLOOR COVERINGS



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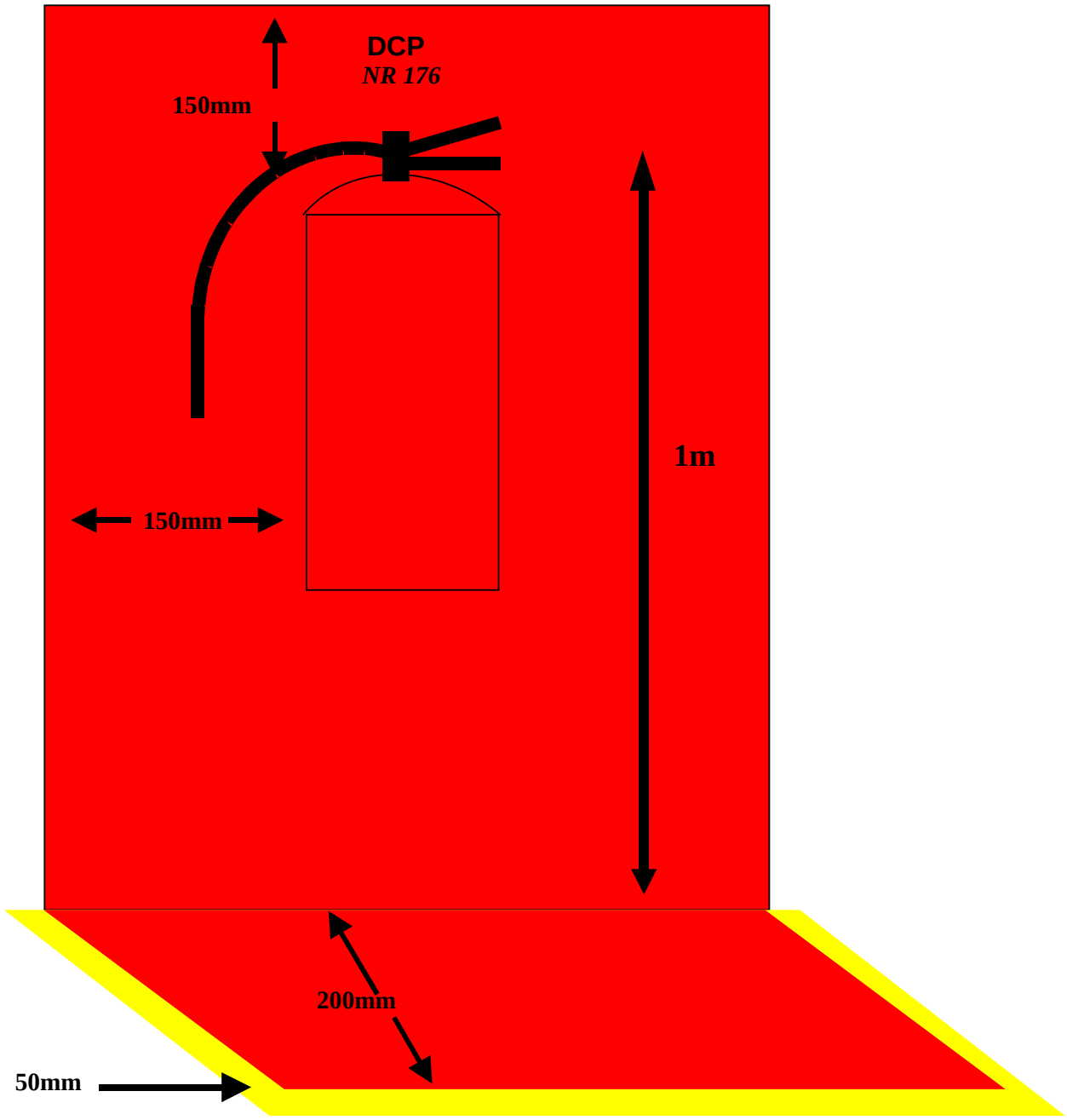
DEMARCATION OF FIRE EXTINGUIHSERS IN WORKSHOPS, SUB STATIONS AND STORES



Back

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.02	Locations Marked, Floor Clear

OBJECTIVE

Fire protection equipment must be clearly identified, demarcated and unobstructed.

STANDARD

1. A demarcation standard shall be documented for the demarcation of all fire equipment. This is the responsibility of the Head of Fire Section.

2. The location of all fire equipment e.g. fire extinguishers, hose-reels, hydrants etc. should be indicated by means of the applicable international symbolic sign and an arrow.

3. Symbolic signs shall be positioned high enough above the equipment to indicate their location even if direct view of the equipment is obstructed e.g. by stacking.

4. A **"Keep Clear"** area should be demarcated in front of all fire equipment, except in offices or where it is practically impossible.

5. The **"Keep Clear"** must be strictly maintained in offices or areas where demarcation is impossible.

6. All fire equipment must be accessible at all times.

7. Strict and swift action should be taken against persons who stack in front of any fire equipment and the situation must be corrected as soon as possible.

8. All emergency doors and escape routes shall be unobstructed at all times.

9. All fire equipment signage shall conform to international best practice standards.

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.04	Maintenance of Equipment

OBJECTIVE

To achieve a high level of reliability, it is necessary to develop a well-conceived and executed schedule for inspection, testing and maintenance of fire extinguishing and rescue equipment.

STANDARD

1. Fire Section in conjunction with Infrastructure Department shall be responsible for inspection, testing and maintenance of Fire Fighting and Rescue equipment at Ras Laffan Industrial City.

2. All Fire Equipment shall be listed by the Fire Section on an inspection register, clearly indicating location, type and capacity.

3. The numbering or identification of equipment and its location shall be done according to a standardised method throughout the entire premises. The Fire Section shall be responsible for co-ordinating and implementing the actions to comply with this standard.

4. All fire equipment shall be inspected as per schedule by a suitable trained person. The inspection shall cover items such as:

   n) Accessibility of fire equipment.
   o) Fittings corroded.
   p) Seals intact.
   q) General maintenance of equipment
   r) Signs in good condition and visible
   s) Hoses intact and in good condition
   t) Equipment correctly located and supported on a bracket or inside a box.
   u) Equipment accessible.
   v) Demarcation in order.
   w) General checklist been filled in correctly and deviations have been rectified.
   x) Accessibility of means of escape from premises.
   y) Employee's knowledge on fire equipment location and usage.
   z) Correct pressure and weight.

Back

5. Proof of competency of persons responsible for inspections and maintenance needs to be provided.

6. Fire fighting equipment shall be serviced periodically as per the recommendations of the manufacturer. If service contractors are used then they shall be competent servicing agents.

7. Service contractors shall be monitored on site to ensure that their maintenance conforms to acceptable standards.

8. Standby units of the correct type shall be made available for units that have to be serviced off-site, i.e. the service company must leave standby units in the place of any which might be removed from the site for servicing.

9. Whenever a fire extinguisher is discharged, immediate action must be initiated to refill the fire extinguisher. Also, an incident report form must be sent to the Head of Safety as per RLC Accident / Incident Reporting Procedure **QPR- RHT- 012**.

10. The Fire Section and Infrastructure Department shall ensure that sprinkler installations are inspected periodically by an approved sprinkler inspection authority.

11. Fire extinguishers shall be pressure tested according to international best practice specifications when required and records shall be kept by the Fire Section of such pressure tests.

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.05	Storage of Flammables / Chemicals and Explosive Material

OBJECTIVE

To ensure that flammable and explosive materials are stored safely, in order to prevent injuries and fires. To provide guidelines for the control, storage, handling and use of flammable liquids.

STANDARD

1. An assessment shall be carried out by the Safety Section to determine if the quantity of flammable liquid kept on sight warrants the building of a flammable liquid store or stores.

2. The flammable liquid store(s) shall conform to the relevant standards and all legal requirements.

3. The flammable liquid store(s) shall be kept neat and tidy at all times.

4. No combustible material like wood, rags, carton boxes, etc. shall be kept in the flammable liquid store(s).

5. Where there is no need for a flammable liquid store(s), all flammable liquids (minimum amount) shall be stored in a metal cupboard with doors.

6. The maximum storage capacity of the flammable liquid store(s) and cupboards shall be prominently displayed at the store(s) entrance.

7. Decanting procedures shall be available. (Decanting is not permitted inside a flammable liquid store)

8. “No Open Flames” and “No Smoking” symbolic signs shall be displayed in the vicinity of the flammable liquid store or where applicable, on the doors of the flammable liquid cupboard.

9. Flammable liquids should be issued only on a need-to-use-basis and strict control should be exercised to ensure that persons do not draw more than what is needed for the specific job.

10. Bonding cables/chains shall be available to bond containers of high volatile liquids when decanted and/or processed.

11. All cables should be grounded as appropriate.

12. An adequate number and type of fire fighting equipment shall be available in the close vicinity of the flammable liquid store.

Back

13. Flammable liquid stores shall be equipped with approved flameproof electrical equipment.

14. Flammable liquid stores shall be well ventilated and free of explosive vapours.

15. Flammable liquid containers in the flammable liquid stores shall be clearly marked/ labeled as to their contents. They shall be provided with earthed drip trays. (Labels to comply with Hazchem standards).

16. Flammable liquid containers (paint, thinners, etc.), which are not stored in flammable liquid stores, shall be stored in steel cabinets clearly marked “Flammable Liquids”. These steel cabinets’s area to be well ventilated. The steel cabinets must be locked at all times.

17. A personal static measurement meter shall be situated at the entrance to flammable liquid stores to identify high risk areas (spontaneous sparks). A measurement record book shall be completed for all entries.

18. Static protectors shall be available or worn in high risk areas.

19. The static measurements that are taken are to be recorded for relevant processes.

20. MSDS shall be available for all flammable/hazardous products at the location where such substances are present.

21. The number of 200 liters drums containing flammable liquids in RLC should be kept to a minimum and necessary signs should be visible at these storage areas.

22. Flammable liquid tanks shall be properly earthed in order to prevent the accumulation of static electricity.

23. Drainage points on flammable liquid tanks shall be provided with threaded caps or blanking plates.

24. Flammable liquid tanks shall be provided with high level alarms.

25. Bund walls surrounding the storage tanks containing flammable liquids should be able to contain the entire volume of the contents plus 10% in case of spillage.

26. Earthing shall be tested periodically.

27. Fire Alarms shall be installed and must be accessible.

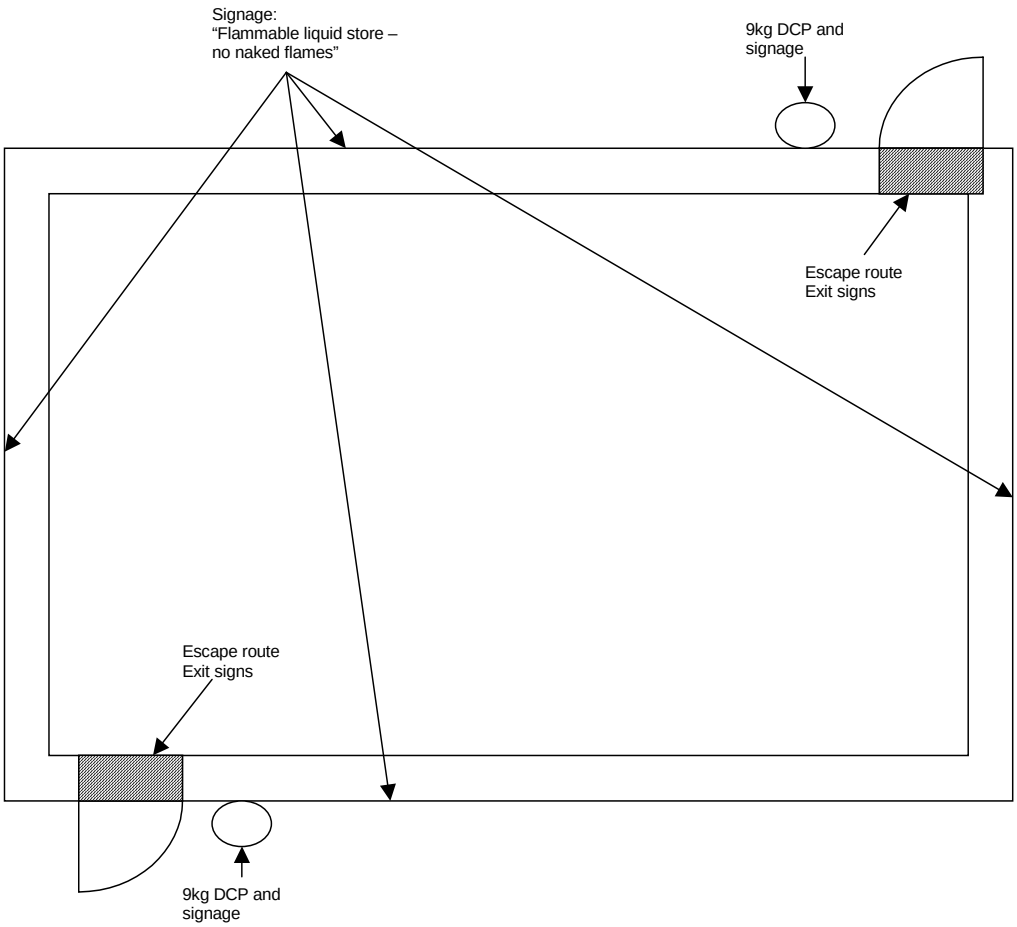
28. All relevant employees shall be trained and informed about hazards and emergency procedures.

29. Adequate precautions must be taken, such as wearing relevant protective equipment when handling substances.

30. Flammable liquids must be stored away from any spark or ignition sources.

Back

FLAMMABLE LIQUID STORES REQUIREMENTS



Flammable liquid Store

- The floor to be of an impervious material.
- Bunded floor so as to contain 110% of the maximum storage capacity.
- 2 Exit doors that open in the direction of exit and to be as far apart form each other as possible.
- Depending on the size of the store at least 2 x 9kg DCP fire extinguishers are to be located at each exit.
- "Flammable liquid" warning signs are to be prominently displayed and "No naked flame" sign.
- Roof to offer protection against the elements.
- Paint containers to be clearly marked & MSDS available.
- Impervious floor that is bunded to contain the volume of paint stored plus 10%.
- Store to have necessary earthing.
- Shelving must be strong enough to carry the full weight of the load it is expected to carry.
- Store to be well ventilated.
- Intrinsically safe/flameproof switches, lights & electrical equipment.
- Empty containers to be disposed of.
- Tins/canisters and drums to be neatly packed.

Back

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.06	Emergency Alarm System

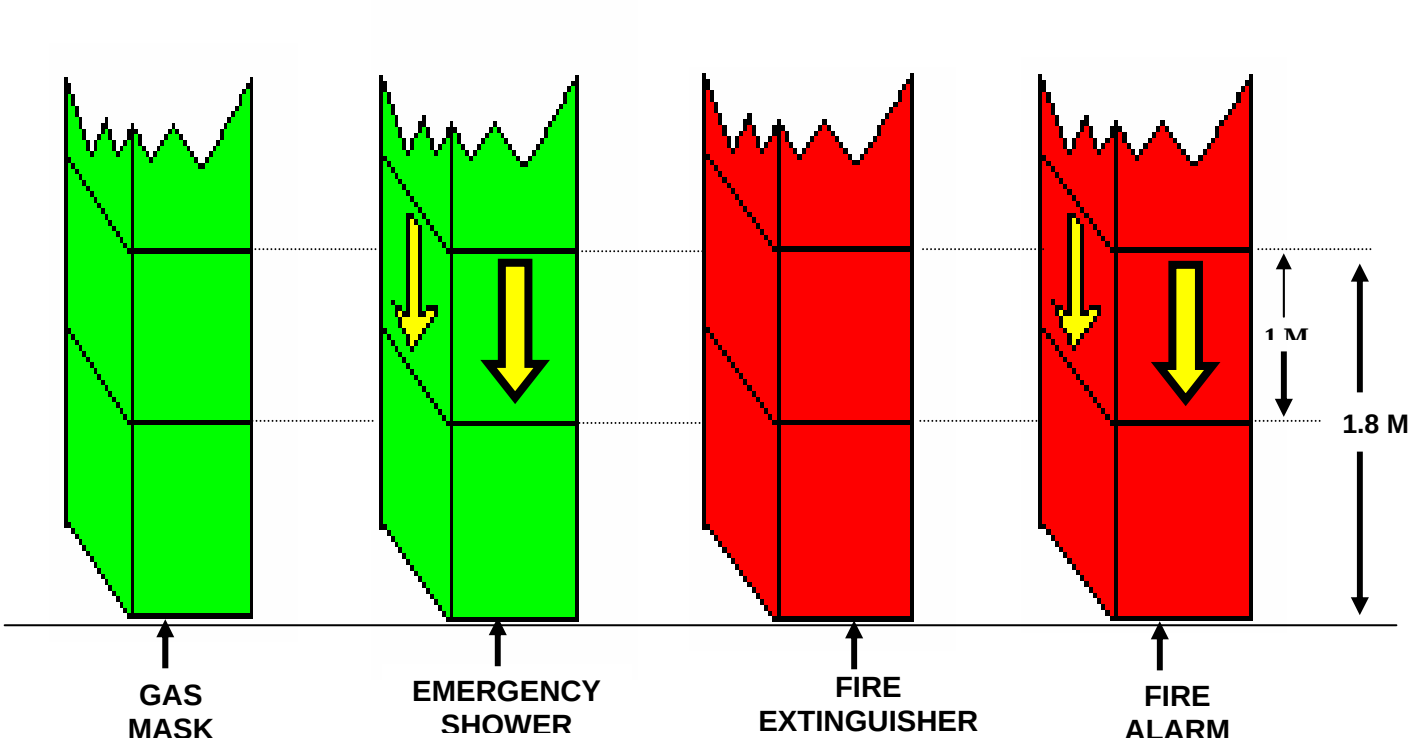
OBJECTIVE

To ensure that all danger areas can be evacuated safely and effectively during emergencies. To ensure a timely response in the event of fire.

STANDARD

1. A standard shall be available for the alarm system regarding placement, testing, back-up system, response and training. Emergency alarm switches shall be placed at strategic locations and their positions clearly identified.
2. Emergency alarms shall be tested as per schedule and a record of the test results maintained.
3. Employees shall be made familiar with the emergency alarm system and the different emergency signal patterns by their Supervisor.
4. The notices detailing the emergency alarm signal patterns shall be displayed at all places of work and offices.
5. Emergency telephone number charts shall be displayed at all locations.
6. Emergency exits shall be clearly marked and not be obstructed.
7. Emergency assembly areas shall be clearly indicated. Assembly points shall be clearly marked with notice boards
8. Employees shall be made familiar with the location and number of ambulance points as well as the location of the fire alarm activation points in their section/workplace, by their Supervisor.
9. The emergency communications system shall be tested as per schedule.
10. All the fire alarm activating points shall be indicated on a layout plan of the premises and be described on a notice.
11. For the colour coding of the Fire Fighting and Safety Equipments, drawing **QDW-RHT- 001- 005** should be referred.

COLOUR CODE FOR FIRE FIGHTING AND SAFETY EQUIPMENT



QDW – RHT – 001 – 005 Rev. A0 Sep 05

Back

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.07	Fire Fighting, Drill and Instruction

OBJECTIVE

To ensure that various categories of personnel are familiar with and trained in the applicable emergency equipment and the use thereof.

STANDARD

1. Fire teams shall be available on a 24-hour basis (during and after working hours).
2. All fire teams shall participate in fire drills.
3. The names of all the fire teams and contact numbers shall be displayed prominently on notice boards at the fire stations.
4. Fire fighting teams shall be given the required practical training. The effectiveness of the teams shall be tested periodically by means of pre-arranged or unscheduled mock emergencies.
5. Mock emergencies/simulations shall be held according to a schedule by the Fire Section and Emergency Response Co-ordinator.
6. Record of all fire protection training attended by employees shall be maintained.
7. Written standards shall be made available by the Fire Section for fire drills.
8. Whenever possible, live fires should be used to test the fire fighting skills of the fire teams during exercises.
9. An evacuation drill shall be carried out at least once per year every division and the evacuation procedures must be discussed by the Fire Section with all the employees.
10. Written standards/procedures for evacuation shall be available from the Fire Section (to include assembly points, emergency aids etc.).
11. Medical staff/first-aiders shall be trained regarding their role during emergencies like fires and explosions.
12. Each fire drill or exercise shall be recorded by the Fire Section and the records to be kept for at least two years.

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.08	Security System

OBJECTIVE

To ensure that losses as a result of theft, fraud vandalism, sabotage and industrial espionage by employees or outsiders is prevented by means of an effective security program.

STANDARD

1. All Ras Laffan Industrial City employees shall be issued with a permanent entry permit.

2. Entry permits shall be attached to the persons clothing in a conspicuous place.

3. Vehicles entering RLC require permission to do so and are subject to a strict search.

4. The Security Officers from the RLC Security Section shall report all unsafe conditions observed during their patrols to the Safety Section.

5. The security awareness of all employees shall be encouraged by means of placards, slogans and talks.

6. Instructions and procedures in connection with admission requirements for employees, contractors, vendors and visitors to RLC shall be implemented and be reviewed annually by the Head of Security.

7. Written standards for security aspects e.g. entrance, exit, risk control etc. shall be developed and made available by the Head of Security.

8. Records of all entries and exits shall be recorded in a register, including after hour visits.

9. All visitors and contractors shall be given a temporary entry permit before they are permitted onto the site, and which must be returned to the security checkpoint before they leave the premises.

10. Security staff shall monitor all movement of people/vehicles accessing and leaving the site.

11. Security staff shall ensure that they are familiar with the location of fire equipment and emergency exits.

12. Security shall ensure that no unauthorised persons enter site without necessary authorisation, and that no RLC goods enter or leave site without authorisation.

Back

13. During any emergency situation within RLC, Security Personnel shall assist the Fire Section in controlling the traffic to the affected areas and cordoning the areas as per the requirement of Emergency Response Co-ordinator and/or On-site Commander.

14. For any further information and clarification, various procedures by RLC Security Section shall be referred.

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.09 A	Emergency Planning

OBJECTIVE

To have procedures which are to be followed during various emergencies in order to co-ordinate emergency activities and to minimise losses to the greatest extent reasonably possible.

STANDARD

1. Emergency Response Plan shall exist for each potential type of emergency that can occur at Ras Laffan Industrial City. Copies of these plans shall be available in each department.

2. The Contractors and End Users shall have their own internal emergency procedures that is based upon and compliments the Ras Laffan Industrial City Emergency Procedure.

3. Personnel shall be made familiar with control lists detailing their responsibilities during an emergency as well as those of senior personnel.

4. All personnel shall be made familiar with actions to be taken in the event of:
   - Telephonic bomb threat
   - Suspicious parcels/articles
   - Suspicious persons
   - Major Gas Leakage or fire / Explosion emergency

5. Emergency plans shall be regularly tested by means of simulated mock emergencies.

6. Floor Marshals should be appointed and trained for each building/area.

7. A list of persons that will be responsible for assisting during large scale emergency incidents and their contact numbers must be made available by the Fire Section as well as the Emergency Response Co-ordinator and be updated regularly.

8. The Director Ras Laffan Industrial City shall assume overall command and take charge of any major emergency situation.

9. An emergency control centre and an alternative emergency control centre must be designated and be equipped with the necessary communication equipment and other emergency equipment as determined by the Emergency Response Co-ordinator and Heads of Fire and Safety Sections.

Back

10. Emergency equipment shall be stored at strategic points and must be, accessible at all hours.

11. All Emergency equipments shall be checked and maintained periodically according to relevant requirements.

12. The emergency team shall be trained on the use and application of all equipments.

13. Material safety data sheet files shall be available in the communication control centre.

14. An independent power supply for emergency equipment shall be available for the control centre. The Infrastructure Department in conjunction with the Emergency Response Co-ordinator and the Head of Fire shall ensure that provision is made for this.

15. For detailed information, RLC Emergency Response Manual shall be referred to.

SECTION 3.00	FIRE PROTECTION AND PREVENTION
Element 3.09 B	Fire Prevention and Emergency Control

OBJECTIVE

To ensure that a high standard of fire prevention and emergency control is maintained. To appoint a co-ordinator to control aspects relating to fire protection and fire prevention.

STANDARD

1. The Emergency Response Co-ordinator and Heads of Fire Section and Safety Section shall be legally appointed and their duties and responsibilities must be clearly defined.
2. The Emergency Response Co-ordinator, Heads of Fire Sections and Safety Section shall assists in the approval process of all new building plans, plant plans and modifications to buildings and plants.
3. Heads of Fire Section and Safety Section are responsible for training his own personnel as well as the personnel of other divisions.
4. Head of Fire is responsible for fire prevention inspections as well as fire protection audits.
5. The Emergency Response Co-ordinator in conjunction with others is responsible for the review and updating of emergency plans.
6. Heads of Fire Section and Safety Section shall assists in performing risk assessment studies.
7. Head of Fire is responsible for fire protection, fire prevention, risk management studies and response during emergency situations.
8. The Emergency Response Co-ordinator is responsible for Emergency Planning, Control and Training of emergency role players
9. The Head of Fire shall ensure that regular fire fighting training is conducted and that all members of the fire teams attend this training.
10. For more clarification, relevant procedures of RLC Fire Section shall be referred.

Back

SECTION 4.00	INCIDENT REPORTING AND INVESTIGATION
Element 4.11	HSE Incident Records

OBJECTIVE

To ensure that all the Health, Safety and Environmental incidents and occupational injuries/diseases are recorded and reported.

STANDARD

1. All incidents and hazards occurring on RLC sites shall be reported, investigated, analyzed and Followed-up in accordance with the documented procedure **QPR-RHT- 012**.

2. An official record – register of all the HSE incidents, reportable injuries, occupational illnesses/diseases, including disabling, classified, and minor injuries shall be kept up to date by Safety Section.

3. The following details (minimum) shall be recorded:
   - Date, time and brief description of Incident
   - If incident involves injury, short description of injury and the incident that caused the injury, date the person went off duty and reports back on duty (if applicable)
   - Incident Classification as per the relevant guidelines

4. The Safety officer shall keep an incident register up to date based upon reported incidents channeled via an incident investigation recording system.

5. All reportable injuries/occupational illness/diseases shall be recorded on the official forms.

6. Record of all the incidents involving lost work, Medical Treatment and first-aid treatments shall be kept by Safety Section.

7. All incidents are to discussed/included in the management committee agenda/minutes.

NOTE:

Any incident which had, or has the potential to result, in any negative physical, effect for the person/s involved must be reported and recorded. Therefore adverse occupational health issues are not limited to disease, but include any exposure to occupational health hazards, which are in excess of Threshold Limit Value (TLV's) or to which the person shows any signs or symptoms of sensitivity.

Back

SECTION 4.00	INCIDENT REPORTING AND INVESTIGATION
Element 4.12	Internal Incident Investigation

OBJECTIVE

To ensure that all injuries, incidents are reported and investigated, in order to initiate the necessary corrective actions to prevent repetitions thereof.

STANDARD

1. An official record shall be maintained of all injuries and occupational diseases by the Senior Medical Officer (Medical Centre).

2. All injuries, incidents and near-miss incidents are to be reported via the approved internal incident reporting form by employees prior to the end of their shift.

3. All injuries, incidents and near-miss incidents shall be investigated as soon as possible after the incident and the investigation report/docket shall be fully completed.

4. All reports/dockets shall be checked and signed by the relevant Departmental Manager. The corrective actions are to be followed up by the relevant Managers/Supervisors and Head of Safety Section.

5. The Safety Officer shall follow up on any outstanding investigation reports.

6. Summaries of relevant injuries/incidents shall be communicated monthly to all appropriate divisions by the Safety Section.

7. All incidents and injuries should be a standing item on the agendas of the Committee Meetings. Lessons learnt should be discussed.

8. Ras Laffan Industrial City procedure for the notification, investigation and reporting of the incidents, **QPR- RHT- 012**, shall be referred for this purpose.

9. Incident/injury analyses shall be performed by the Safety Officer.

10. Incident investigators must be designated in writing by the Head of Safety Section.

11. The incident investigators should undergo training in the technique of professional incident investigation.

12. An incident investigation should be completed only when the following steps have been followed:

    - The investigator has visited the scene of the incident
    - The direct or immediate cause of the incident has been identified.

Back

- The root/basic cause of the incident has been identified.
- Positive and practical recommendations have been made to prevent or minimise the recurrence of a similar incident.
- A specific person has been made responsible for implementing the recommended action.
- The actions have been completed.

13. Follow up shall be carried out by the Managers/Supervisors after the action has been taken to determine if the action is effective and practical.

14. Other departments should be included in analysis/formulation of recommendations (where applicable).

15. Follows up meeting/inspections should be scheduled/ implemented.

16. All incident investigation documentation shall be kept for at least 5 years and must be available at all times during this time for inspection.

SECTION 4.00	INCIDENT REPORTING AND INVESTIGATION
Element 4.13	Incident Statistics

OBJECTIVE

To ensure that incident statistics are kept which are used to analyse trends in order to implement proactive action plans which in turn can assist to prevent future incidents.

STANDARDS

1. Statistics of disabling injuries/non-disabling injuries/first aid injuries and occupational illnesses shall be kept by the relevant Safety officer at the Safety Section.

2. Trends should be represented graphically and summarised in a monthly report, which is distributed to all Managers.

3. Injuries shall be analysed by the relevant Safety Officers in respect of direct causes and underlying causes.

4. Statistics of injuries, damage and incidents shall be discussed at the Committee meetings.

5. In order to determine trends regarding the causes of incidents, all injuries should be analysed in the following categories:
   - Analysis city wide (Ras Laffan Industrial City)
   - Analysis per department and division.
   - Analysis per body part/system affected.
   - Analysis per day of week.
   - Analysis per time of day.

6. Incident statistics shall be displayed for the purpose of informing the workforce.

7. The number of man-hours between disabling incidents shall be calculated and displayed. The previous record and target of man-hours that Ras Laffan Industrial City aims to achieve without another disabling injury should also be displayed.

8. Fatal incidents are also to be reported to QP Corporate HSE when they occur.

Back

SECTION 4.00	INCIDENT REPORTING AND INVESTIGATION
Element 4.22	HSE Risk Financing

OBJECTIVE

To ensure that records are kept of all costs related to injuries. To inform management of all costs regarding injuries and payments.

STANDARD.

1. The Head of Safety should cost all incidents and the summary must be made available to Management (down time, re-training, product damage etc. Included).

2. All employees should be made aware of the efforts of management to reduce assessments and premiums paid and to achieve the maximum rebate.

SECTION 4.00	INCIDENT REPORTING AND INVESTIGATION
Element 4.23	Incident Recall

OBJECTIVE

To ensure that repetition of previous incidents, which have occurred at Ras Laffan Industrial City do not re-occur, by means of incident recall. To establish a continual awareness of past incidents from which employees may learn valuable lessons.

STANDARD

In order to create continuous safety awareness, the lessons learnt from previous incidents as to what was responsible for injuries or damage, are to be recalled on a regular basis.

1. Previous incidents and other applicable incidents with lessons learnt and preventive measures should be stressed at Committee meetings by the Head of Safety and Managers/Supervisors.

2. “Incidents” shall be a standing item on the agendas of Committee meetings.

3. Selected incidents shall be noted by the Managers/Supervisors and Head of Safety and discussed at Committee meetings.

4. Information regarding large incidents shall be distributed to relevant persons by the Head of Safety for information and lessons learnt.

5. A health and safety talks, or “scenario” based upon incident recalls should be discussed with the employees in each Division at each shift team talk session or as often as is deemed necessary. (The lessons learnt from previous incidents to be prepared in an incident form by the Head of Safety and provided to Supervisors to be discussed with the employees)

6. A record of all persons who attended the talk or incident recall shall be kept by the Supervisors and be available at all times.

SECTION 5.00	HSE ORGANISATION
Element 5.01	Corporate HSE Policy

OBJECTIVE

To ensure that the mutual responsibilities of employer and employee in respect of the prevention and elimination of injuries, fires, explosions, damage and situations that can negatively influence the Health, Safety and Environmental well being of employees are clearly defined.

STANDARD

1. An internal Company HSE Policy must exist and must be signed by the DIRECTOR RAS LAFFAN INDUSTRIAL CITY.

2. The HSE policy shall indicate both Management and Employees commitment towards Quality, Health, Safety and Environment

3. The HSE Policy shall be displayed in all offices, workshops and control rooms.

4. All employees shall be conversant with the message contained in the HSE Policy.

5. Management must set the example!

6. Top Management should be involved in the HSE programme activities, where applicable. This should include, at minimum, the following:

   - Attend internal Self-audits.

   - Endorsing all pertinent HSE programme documents e.g. appointments, inspection reports, etc.

7. The entire success of the HSE Programme depends on the involvement and commitment of every employee towards the HSE policy.

SECTION 5.00	HSE ORGANISATION
Element 5.02	HSE Risk and Impact Assessment

OBJECTIVE

To identify and assess HSE risks through a dynamic, pro-active, formal, structured and holistic process to facilitate effective risk reduction plans and actions.

STANDARD

1. General Requirements – Formal Risk Assessments

a. A systematic approach should be taken to identify and assess risks and impacts.

b. The criteria and a risk / impact assessment methodology shall be defined to evaluate risks and impacts.

c. A cross section of employees should be involved in the risk/impact assessment process.

d. A company standard shall be set for risk/impact assessment review and shall include all activities carried out by all end users, contractors and off-site activities/installations.

e. The assessment should cover the full scope of the company responsibility and accountability.

f. Appropriate risk and impact assessments shall be carried out before all changes and/or modifications.

g. All “carry over” risks shall be identified and assessed.

h. Ras Laffan Industrial City should take into consideration normal and abnormal conditions as well as potential incidents and emergencies throughout the product and/or process life cycle.

2. Health Risk Assessment

a. Health Risk Assessment with respect to the following should be conducted in accordance with accepted standards:

- ***Physical Stressors***
  - Noise
  - Lighting and vision

- Heat and cold extremes
- Vibration
- Ventilation
- Non ionising radiations
- Ionising radiations

- ***Chemical Stressors***
  - Vapours
  - Mists
  - Gases
  - Fumes
  - Dust

- ***Biological Stressors***
  - Bacteria
  - Viruses
  - Fungus
  - Parasites

- ***Psychological Stressors***
- ***Ergonomics***
- ***Manual Handling***
- ***Occupational Hygiene***

b. Risks related to all identified occupational health stress factors should be assessed, taking full cognizance of MSDS data, hygiene survey results, medical surveillance information and employee complaints

c. Health risk assessments should be done regularly, or upon availability of new information, reviewed

d. Occupational Medical Services staff should be involved in risk assessment reviews.

3. Environmental Impact Assessment

Ras Laffan Industrial City shall take into consideration past (historical) and current activities, products or services associated with the scope of the company responsibility and accountability

Back

a. Environmental Impact Assessment with respect to the following should be conducted in accordance with accepted standards:
   - Past, Current and Potential Emissions/Discharges
   - Waste
   - Natural Resources
   - Noise, Vibration and Radiation
   - Social Impact
   - Ecosystem sustainability

b. An estimate should be done of environmental impacts in terms of risk and evaluation / assessment of each identified risks shall be done.

c. Risk management strategy shall be determined covering the implementation of decisions about the management of the various risks or types of risks

4. Fire Risk Assessment

a. Fire risks and follow on risks as a result of a fire, shall be identified and assessed

b. A recognised fire authority should be consulted

c. Level of service available from local authority shall be assessed and results incorporated in to the risk management plan

5. Process Risk Assessment

a. Major process hazards shall be identified

b. Risks associated with major process hazards shall be identified and assessed

6. Motorised Equipment

Risks associated with routes travelled and loading/off loading operations shall be identified assessed

7. Hazardous Substances

a. An inventory shall be established and updated of all substances in use including products, by-products and waste from manufacturing

b. Hazardous substances shall be identified

c. Risks associated with hazardous substances shall be identified and assessed

8. Emergency Scenarios

Potential emergency scenarios shall be identified and assessed

9. Hazardous Tasks

a. An inventory of tasks shall be established

b. Hazardous tasks shall be identified

c. Tasks requiring permits to work shall be identified

10. Informal/point of Operation Risk Assessment

Employees should be competent to identify hazards and assess associated risks relevant to their specific task/function

SECTION 5.00	HSE ORGANISATION
Element 5.03	Legal Requirements and / or Standards

OBJECTIVES

Applicable legal requirements/standards must be identified and employees should have access to this information.

STANDARD

- Legal requirements should be identified
- A system should be established to provide access to relevant current legislation
- A system should be established for early identification of legal non-compliance
- Applicable legal documents shall be valid and available
- Employees should be made aware of the consequences of non-compliance
- Legal non-compliance shall be recorded and rectified accordingly
- Company standard setting must take cognisance of appropriate guidelines and standards

Back

SECTION 5.00	HSE ORGANISATION
Element 5.04	HSE Objectives and Targets

OBJECTIVES

To ensure that HSE Objectives and Targets for Ras Laffan Industrial City are established.

STANDARD

HSE Objectives and Targets

- Objectives and targets shall be established
- Objectives commensurate with risks and significant environmental impacts shall be identified
- Objectives shall be documented at appropriate levels in the organisation
- Objectives and targets shall be specific, measurable and achievable.
- Objectives should be consistent with the policy
- Relevant parties should be afforded the opportunity to comment on the objectives

SECTION 5.00	HSE ORGANISATION
Element 5.06	System Review

OBJECTIVES

To ensure that established HSE Objectives and Targets for Ras Laffan Industrial City are reviewed periodically

STANDARD

System Review

- Full HSE performance shall be reviewed by management
- Any recommendations for system changes shall be actioned
- HSE system review shall consider statistics, audit results, and other performance indicators
- Cost of risk shall be considered in the HSE system review
- Company standards must be set regarding the frequency of HSE system reviews
- Other relevant parties shall be provided access to the results of review
- The policy shall be periodically reviewed to reflect changing conditions and information

SECTION 5.00	HSE ORGANISATION
Element 5.10	Responsibility of Chief Executive Officer

OBJECTIVE

To ensure management commitment and involvement to the HSE programme.

STANDARD

1. The Director Ras Laffan Industrial City is overall responsible for ensuring that systems and controls are in place to create a safe, healthy and environmentally acceptable workplace within the confines of the RLC site.

2. The Director Ras Laffan Industrial City shall approve a HSE Policy for Ras Laffan Industrial City.

3. The Director Ras Laffan Industrial City must designate subordinate managers at every site under his control and must assign to them Health, Safety, Environment and Security responsibilities

4. The appointed endorses at least the following pertinent program documents:

   - Incident investigation reports.
   - Self-audit reports.

5. All the designated managers must have attended a course providing them with knowledge and understanding regarding the application of Health, Safety, Security and Environmental principles

6. A site plan shall be available indicating the location of risks.

SECTION 5.00	HSE ORGANISATION
Element 5.11	Appointments

OBJECTIVE

To ensure that all persons who, as a result of the requirements of their post specifications, are appointed (in writing) in order to be legally bound to assist the designated manager with the Health, Safety and Environmental well being of employees and the safe operation of the plant and equipment under their control. Also, to ensure compliance with the ISO 9001, ISO14000 and OHSAS 18001 system requirements.

STANDARD

1. The DIRECTOR Ras Laffan Industrial City and all the subordinate Managers shall be designated in writing

2. The persons responsible for Health, Environment, Safety and Quality shall be appointed in writing and his/her responsibilities and duties be clearly specified.

3. Appointees have to accept their appointment in writing on the prescribed form.

4. Persons acting in posts shall be appointed in writing.

5. Records shall be kept of all legal appointments

6. Risk assessments shall be arranged by the Heads of Safety in conjunction with Head of Fire Section, Lead Environmental Engineer, Senior Medical Officer, Head of Security and Emergency Response Co-ordinator and copies of surveys shall be on file.

7. Risk assessment must be done to identify any risks to employees and the property.

8. All Health Hazards shall be identified by the competent Industrial Hygienist in conjunction with the Senior Medical Officer.

9. All survey results must be brought to Senior Managements attention.

10. An action plan shall be available on deviations, which are to be followed up, and managed by the respective Managers/Supervisors.

11. Calibration of biological monitoring equipment should be available on-site (e.g. audiometer).

Back

12. Site plan matrix shall be available at the Senior Medical Officer and Heads of Fire and Safety showing raw materials, process hazardous materials and the managers responsible.

13. Progress on medical surveillance programs shall be reported to the Managers by Industrial Hygienist in conjunction with the Senior Medical Officer.

14. An annual HSE plan shall be available for each section/functionary.

SECTION 5.00	HSE ORGANISATION
Element 5.12	HSE Representatives

OBJECTIVE

To outline the criteria for the appointments of HSE Representatives.

STANDARDS

1. Sufficient HSE Representatives shall be nominated/elected and be appointed in writing

2. Suitable members of management shall be appointed as HSE Representative's Reporting Officers (Managers/Supervisors). The duty of the Reporting Officer (Managers/Supervisors) is to receive the HSE Representative's inspection report and to action any reported deviations.

3. All HSE Representatives shall be aware of their role, functions, duties and scope of operation.

4. All HSE Representatives must have attended a HSE Representatives Course.

5. All HSE Representatives must have attended an Incident Investigation course.

6. Training certificates/schedules for the above courses shall be available at the HR Department.

7. HSE Representatives should identify risks and records of health risk identification shall be available.

8. All HSE Representatives must be a member of a HSE Committee and attend the HSE Meetings.

9. All HSE Representatives shall complete the customised monthly inspection form and submit to the Managers/Supervisors who, after actioning the relevant items shall forward it to the Chairperson of the HSE Committee meeting.

SECTION 5.00	HSE ORGANISATION
Element 5.13	HSE Committee

A. MEETINGS (GENERAL ISSUES)

OBJECTIVE

To ensure that the policy decisions are communicated to all employees by means of a structured HSE Committee network.

STANDARD

1. HSE Committee members are appointed in writing

2. The frequency of HSE Committee meetings should be as follows:
   - First line supervisors with subordinates, monthly (non obligatory)
   - Departmental/area HSE Committee meetings, quarterly (obligatory)
   - Central HSE-committee meetings, quarterly (non obligatory)
   - HSE Representative Forum meetings, monthly (non obligatory)
   - Contractors HSE Forum meetings, monthly (non obligatory)
   - HSE Sub-committee Meetings, monthly (obligatory)

3. Meetings shall be held according to a standard agenda, which is to be distributed at least seven days before the meeting is held.

4. Written minutes of decisions taken and actions and responsible persons for actions shall be kept.

5. Minutes of meetings should be signed by a Ras Laffan Industrial City Management Representative and/or the Committee Chairperson.

6. HSE Representatives shall be members of the various HSE Committees or be represented on these forums. Attendance should be clearly indicated on the attendance records.

7. Each Manager/Supervisor must report quarterly to their respective area HSE Committee, concerning his/her division's HSE achievements and performance.

8. Management, the workforce and QMS Representative shall be represented on each HSE Committee.

9. The chairperson and members of the Departmental and Central HSE Committees shall be appointed in writing.

Back

10. All HSE Committee Meeting minutes shall be filed and retained for reference. (All minutes are to be kept for a minimum period of two years).

11. The HSE Committee minutes must make provision for an “action” and “date” column and minutes and action plans shall be circulated to employees. It shall also specify responsible person for each action.

B. MEETING PROTOCOLS

OBJECTIVE

To ensure that effective HSE meetings are held that comply with the requirements of the ISO9001, ISO 14001 and OHSAS 18001 requirements.

STANDARD

Items to be discussed in the meetings:

1. Approval of the minutes of the previous meetings

The minutes of the previous meeting must be approved and signed by the Chairperson of the meeting. The minutes must also be circulated to the Managers/Supervisors and to the rest of the committee members as well as to others that need to be aware of the outcome of the deliberations.

2. Matters arising from the previous minutes.

The persons responsible for actions arising from the previous minutes must give concise feedback on the status of the actions, without repeating the whole discussion.

It is important that the minutes are provided with an action list with the responsible persons attributed to every action, clearly identified.

3. Matters arising from the Departmental/Area HSE Committee Meetings

Important items that have been discussed at the above meetings must also be discussed briefly at the First Line Supervisors Meetings.

4. Health Aspects

Health aspects should be discussed at HSE committee meetings.

The following items can be discussed:

- Hygiene facilities
- Exposures that can adversely affect the health of employees, e.g. hazardous gases, vapours, chemicals, heat, noise, pollution, etc.

- Health information literature.

5. Incidents

All injuries, incidents, fires and damage to property that have occurred since the previous meeting, shall be discussed under this item. Section incidents as well as incidents from other divisions can be discussed (the HSE Monthly Report can be used).

- It is important that the lessons learnt from incidents are discussed and highlighted.
- It is also important that the status of corrective actions taken to prevent reoccurrence is discussed.

6. Report by the HSE Representatives

The HSE Representatives must discuss any deficiencies, problems and concerns that he/she has observed.

7. Quality Aspects

The Chairperson can decide whether quality aspects should be discussed at the meeting. Suggestions for preventing incidents can form the basis for good discussion points. All the quality aspects shall be communicated to the concerned QMS Representative.

8. Environmental Aspects

Environmental aspects must form part of the meetings deliberation. Issues to be discussed include, amongst others; environmental impacts/aspects, soil, water and/or air pollution incidents, compliance with standards and other issues that can bring about improvement.

9. HSE Discussion

The Chairperson should nominate a member on a rotational basis to deliver a five-minute HSE discussion. Any subject relevant to HSE or off the job HSE can be presented.

SECTION 5.00	HSE ORGANISATION
Element 5.14	HSE Communication

OBJECTIVE

To ensure that additional communication systems are put in place, in support of the formal HSE Committee Meetings.

STANDARD

1. Supervisors should conduct daily HSE reviews with their personnel. Records must be kept of these talks and attendees.

2. Ras Laffan Industrial City must encourage involvement and communicate **"THINK SAFETY- ACT SAFELY**" messages to all employees.

3. A list of high risk tasks performed at Ras Laffan Industrial City shall be identified/compiled by the Supervisors/Section Managers and should be available i.e. tasks that require formal job instruction.

4. A list of health hazards shall be identified/compiled by the Senior Medical Officer / Industrial Hygienist and be made available where necessary to formulate plans in collaboration with the Managers and other role players.

5. Precautionary measures need to be determined for tasks that are of a particular hazardous nature in conjunction with the relevant Managers.

6. Before a hazardous task is performed, the supervisor or group leader must run through the task with his team. This is achieved by thoroughly and formally communicating the hazards of the task using written work procedures.

7. Publicity and recognition shall be given by top management.

SECTION 5.00	HSE ORGANISATION
Element 5.15	First Aid and Occupational Health Service Facilities

OBJECTIVE

To establish minimum requirements / guidelines for First Aid and Occupational Health Service Facilities at Ras Laffan Industrial City.

STANDARD

1. To ensure that adequate First Aid facilities are available for the employees and other who may become ill or get injured at workplace.

2. To ensure that written procedure for first aid and occupational health services are developed. The employees and all the concerned personnel must be aware of the procedure to be followed in the event of any illness and/or injury at workplace.

3. To ensure the provision of sufficient numbers of trained First Aid personnel onsite to deal with any accidents and injuries occurring at workplace.

4. To provide information and training on First Aid to employees to ensure that statutory requirements and the needs of the organisation are met.

5. A plan indicating the requirement and placement of First Aid Boxes shall be developed and made available to all the employees and other interested parties.

6. Location of the all the First Aid Boxes shall be clearly marked and the list of the contents posted on the First Aid Box.

7. The name of each division's trained First Aider must be affixed to the relevant First Aid Box.

8. All the First Aid Boxes shall be periodically inspected by the competent person and records for all such inspections maintained in inspection register.

9. A treatment record book (logbook) shall be kept with each First Aid Box and all treatment given using its contents recorded in the book.

10. Immediate action shall be taken to replenish any First Aid Box if the contents have been used or do not comply with the minimum contents.

11. Where the eyes or body of any person may be exposed to injurious corrosive material, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

12. Where an employee is expected to be exposed to high noise levels (more than 85 dBA average) due to the nature of job and the surrounding equipments /

machinery, suitable hearing protection shall be available at the workplace of such employees. Use of suitable hearing protection shall be made mandatory for the employees working in such areas.

13. Where an employee is expected to be exposed to any toxic, corrosive or hazardous chemical vapours and/or gases, suitable respiratory protection shall be available at the workplace of such employees and use of the same shall be mandatory for the employees working in such areas.

14. All the potential causes for occupational illness, including relevant exposure levels and consequences as appropriate, shall be identified for every workplace within RLC and provision of appropriate PPE's and other suitable measures shall be available at such workplaces.

15. The Medical Center must keep the records of all the reported cases of occupational illness in accordance with the relevant legislation.

16. Medical Centre shall be managed by a fully trained Senior Medical Officer during office hours.

17. A list of First Aiders / First-Aid Teams shall be available with the Medical Center.

18. A well-equipped First Aid Station shall exist under the direct control of a qualified and registered Senior Medical Officer.

19. Trained First Aiders shall be available in the respective workplaces at RLC.

20. At least 5% of Ras Laffan Industrial City employees should be trained in first aid. The distribution should be such that each division has a First Aider available to render assistance when required.

21. The Medical Centre shall assess the personnel strength at Ras Laffan Industrial City and determine the need for First Aiders to be trained and appointed. Accordingly, Manager of the respective workplaces, divisions/ section shall nominate the employee(es) of his area for the First Aid Training through the Corporate Training Department.

22. All the trained First Aiders shall be provided with refresher training at regular intervals to ensure that their skills are maintained.

SECTION 5.00	HSE ORGANISATION
Element 5.21	Awareness and Promotion

OBJECTIVE

To ensure the widest possible HSE awareness by employees is attained through the circulation and display of HSE awareness promotional material.

STANDARD

The attitudes of employees can be influenced by HSE awareness promotions, especially if they form part of a Ras Laffan Industrial City HSE program. Selected posters, banners and slogans must be exchanged by the HSE Representatives regularly. Newsletters, bulletins and videos shown during working time, are also successful in promoting the functions and focus areas of HSE.

1. A variety of HSE information brochures are to be distributed by the HSE Department from time to time.

2. Recognition should be given for achieving specific targets without incurring any disabling injuries. (e.g. one million disabling injury free man-hours)

3. Fixed poster display points shall be identified throughout the premises.

4. All posters shall be numbered and entered into a poster record and rotated periodically.

5. Posters should be discussed by Supervisors with the workforce in the area where they are displayed (Poster appreciation talks).

6. As far as reasonably possible only posters with a message applicable in a specific area should be displayed in that area.

7. Periodical HSE Questionnaire/ Quiz shall be conducted for all the employees and all the employees be encouraged by suitable rewards.

8. HSE Department shall develop suitable Safety Incentive Scheme to encourage the participation of employees at all the levels.

SECTION 5.00	HSE ORGANISATION
Element 5.22	Injury and Occupational Diseases Experience and Star Grading / HSE Performance Board

OBJECTIVE

To ensure that the HSE programme statistics are visibly displayed in a conspicuous place to all employees and visitors, in order to highlight the company's HSE performance as well as its commitment thereto.

STANDARD

1. A HSE performance notice board should be located at the main entrance to Ras Laffan Industrial City.

2. These notice boards should be in a conspicuous position and be kept up to date daily by the Safety Section.

3. Disabling injuries shall be indicated with an activated red light.

4. An information bulletin/flash report should be distributed to Managers whenever a disabling injury occurs, which affects the total hours reflected on the HSE performance notice boards.

5. A record shall be kept of all motor vehicle incidents.

SECTION 5.00	HSE ORGANISATION
Element 5.24	HSE Reference Source

OBJECTIVE

To ensure that a repository of HSE information is available to employees who wish to expand their HSE related knowledge.

STANDARD

1. The HSE Department shall maintain a wide variety of Safety literature and relevant codes / standards, within individual divisions.

2. Ras Laffan Industrial City's HSE Standards and other HSE information should be available in all divisions.

3. Hazardous substances' data sheets (MSDS) shall be available in all relevant divisions. (Where applicable).

4. HSE related journals must be distributed to relevant Managers and Supervisors.

5. The history of incidents shall be recorded and be available on the computer system.

SECTION 5.00	HSE ORGANISATION
Element 5.25	Annual Report

OBJECTIVE

To ensure that HSE successes and the performance achieved are reported on a regular basis.

STANDARD

1. Managers/Supervisors should assume responsibility for ensuring that HSE programs for their division are developed and implemented which is aligned with the Ras Laffan Industrial City HSE policy/system. Each division should be given the opportunity to discuss the results achieved at Meetings.

2. HSE achievements and performances should be discussed in the various Ras Laffan Industrial City reports.

3. Recognition should be given for reaching certain HSE achievements (e.g. 1,00,0000 injury free man hours).

4. The monthly and annual reports must contain the following information

   - Incident statistics (incident rates) for last 12 months and/or January to date.
   - Analysis of incident statistics (per department, body part affected etc.).
   - Damage incidents or losses (e.g. fires, equipment damage etc.).
   - Incident costs statistics for last 12 months and/or January to date.

SECTION 5.00	HSE ORGANISATION
Element 5.30	HSE Training

A. TRAINING (GENERAL)

OBJECTIVE

To ensure that all new, as well as existing employees are trained effectively in all aspects of HSE in the execution of their duties.

STANDARD

1. Personnel must receive additional HSE rules relevant to the dangers/risks that exist in their respective divisions.
2. Personnel must receive training modules detailing the safety, health and environmental aspects of their tasks.
3. The Supervisor must keep record of the status of personnel training.
4. Company HSE rules must be drawn up by the Head of Safety and these are to be available.
5. Each new employee should be issued with a copy of the HSE rules and he/she must sign for the receipt thereof and this signed document must be kept on his/her personal file at the HR Department.
6. The HSE induction document must contain Ras Laffan Industrial City's HSE Policy. An induction program must also be available for contractors and visitors.
7. Contractors must also attend an induction program as well as be provided with a copy of the HSE site requirements.
8. HSE Induction training should be given to the new employee and contractors before they are required to start with duties.
9. Managers/Supervisors must ensure that they provide their employees with the necessary on-site (on the job) training regarding site/task specific risks and how they can be protected against them.
10. Supervisors should be trained to give on-the-job training (including the HSE aspects of the job).
11. An induction-training checklist is to be completed in respect of each new employee and kept on file.

B. TRAINING (RECOGNISED TRAINING INSTITUTIONS)

OBJECTIVE

To ensure that maximum number of employees at Ras Laffan Industrial City attend the approved HSE Courses.

STANDARD

1. A list of Ras Laffan Industrial City approved HSE courses should be made available

2. The HSE Division shall conduct a survey for each division to determine who needs training from the listed HSE courses.

3. An attendance register of each course shall be available for record purposes.

4. Record shall be kept of persons that have completed all courses, as well as a copy of the completion certificate of that person.

5. Training by external training institutions and/or consultants on HSE may also be considered if in-house training courses do not cater for the specific need of the company.

6. HSE training should be directed at the following:
   - Systematic Causal Analysis Technique – Incident Investigators
   - Health and Safety Representatives
   - Managers
   - Supervisors
   - Security staff – General Health and Safety Training Course
   - At least one supervisor per department/section – Safe Work Procedure Course.
   - At least two employees per department/section – Employee Health and Safety Training Course
   - Environmental Management – Managers/Supervisors

SECTION 5.00	HSE ORGANISATION
Element 5.32	Medical Services

OBJECTIVE

To ensure that employees exposed to medical risks identified, undergo scheduled medical examinations, in order to identify problem areas at an early stage.

STANDARD

Periodic medical examinations play a vital role in the early detection of occupational and work related illnesses before it reaches serious proportions. These examinations also expose shortcomings existing in the application or the absence of HSE rules and procedures.

1. All new employees are to be given a medical examination before commencing employment.

2. All employees working in high noise areas 85 dB (for 40 hours per week) must undergo audiometric tests as per schedule.

3. Drivers (crane drivers, vehicle drivers, forklift drivers, etc.) and equipment operators must undergo annual medical examinations, which must include vision tests.

4. Welders must undergo complete annual medical examinations, which include lung function tests and X-rays.

5. Personnel who are exposed to lead must undergo medical examinations as per the prevailing standards.

6. The person job specifications are to be used by the Medical Officer who carry out the pre-employment examination.

7. All persons who handle hazardous substances are to be checked regularly as required.

8. All food handlers are to be checked regularly as required by legislation.

9. All employees are to be medically checked according to the frequency as decided by a qualified Medical or Occupational Health Professional.

10. Employees are to be medically examined when their job category changes (transfers and promotions).

11. All employees are to be medically examined when terminating their services.

Back

12. Biological monitoring and medical surveillance is to be carried out on all people performing listed work. This monitoring/surveillance are to be done according to a formal program and at a pre-determined frequency.

13. A suitable plan is to be implemented to ensure that all employees are medically examined.

14. Record is to be kept of all occupational diseases reported.

15. All records are to be archived when the employee leaves the company.

16. All medical information will remain highly confidential and will not be divulged to any other person without the consent of the employee.

17. For any further clarifications and information, relevant procedures of Medical Services shall be referred.

SECTION 5.00	HSE ORGANISATION
Element 5.33	Selection and Placement

OBJECTIVE

To ensure that the most suitable person is appointed to a specific post, thus ensuring that the person meets the physical and psychological requirements of the post.

STANDARD

1. Person Task Specifications shall be available via the Human Resources Department for each post category

2. New persons must undergo medical tests to ensure that the right person is placed in each specific job

3. An effort should be made to match the worker to the job. This could include, but is not limited to the following tests:
   - Aptitude
   - Lung function
   - Potential battery
   - Literacy level
   - Reaction time
   - Depth perception
   - Colour blindness
   - Social inclination
   - Leadership potential
   - Does the person fit the job – physically, mentally, ergonomically, etc.

4. Supervisors should be trained in selection procedures and techniques.

5. A merit appraisal system shall be used by Managers and Supervisors to monitor competencies and to identify development areas.

6. All chronic illnesses and conditions shall be identified by the Senior Medical Officer per name and department.

7. The task specification should be used as a guideline by Managers and Supervisors to determine if the prospective employee will fit the job.

Back

SECTION 5.00	HSE ORGANISATION
Element 5.39	Environmental Monitoring

OBJECTIVES

Environmental conditions are to be monitored carefully and a monitoring plan must exist.

STANDARDS

1 Identification of Monitoring Requirements

- Monitoring requirements must be identified
- Monitoring requirements must be linked to the legal requirements and /or to the identified environmental risks and impacts

2 Monitoring Plan

- A monitoring plan shall be developed. This plan should includes:
  - Activities
  - Locations
  - Standards identified
  - Procedures
  - Frequency
  - Resources (people/equipment)
  - Recording/reporting requirements
- Reports/response details must be determined in the event of non-conformance
- Equipment calibration requirements must be identified and complied with

3 Implementation and Review

- Monitoring must be undertaken as per plan
- Results shall be reviewed and actioned according to response requirements/plan
- Annual review of monitoring plan must take place

Back

SECTION 5.00	HSE ORGANISATION
Element 5.40	Inspections and Actions

OBJECTIVE

To ensure that all unsafe conditions are identified and rectified by means of routine inspections, in order to prevent damaging incidents.

STANDARD

1. The appointed HSE Representatives must do regular inspections of their areas of responsibility.

2. HSE Representatives must do their inspections according to the prescribed customised checklists. These checklists shall be filled in and handed over to their Managers/Supervisors.

3. Any incomplete actions should be carried over by the HSE Representatives with each inspection, to prevent any actions being lost or overlooked.

4. HSE Representative's inspection reports shall be discussed at HSE Committee meetings and approved/signed by the Chairperson of the relevant HSE Committees.

5. Internal Management Audits shall be done according to a pre-determined schedule by the management team using prescribed checklists

6. High-risk conditions as well as human error/inefficiencies shall be reported.

7. The HSE Representatives as well as Managers/Supervisors should make positive recommendations on how to correct the high-risk conditions or human error/inefficiencies.

8. The results of all HSE inspections/audits shall be forwarded to management and signed by the designated person or his appointee.

9. Management must take action on the HSE Representatives inspection reports as soon as possible.

10. Feedback should be given to the person submitting the reports during the HSE Committee meetings.

11. The HSE Representatives shall be included in the audits for the entire premises.

12. All HSE inspection reports shall be filed and kept for a minimum period of three years.

Back

13. The HSE Representatives shall be made aware of the hazards in the area by the Supervisors responsible for the specific area.

14. Internal Environmental inspections/audits shall be performed by the Lead Environmental Engineer of according to the ISO 14001 requirements and objectives and targets.

15. Internal Health inspections/audits shall be performed by the Senior Medical Officer/ Industrial Hygienist according to the objectives/standards and criteria prescribed by the checklists in the Health Auditing procedure.

16. Internal Fire Protection inspections/audits shall be performed by the Head of Fire according to the objectives/standards and criteria prescribed by the checklists in the Fire Protection auditing procedure.

17. Internal Security inspections/audits must be performed by the Head of Security according to the objectives/standards and criteria prescribed by the checklists in the Security auditing procedure.

18. Internal Safety inspections/audits must be performed by the Head of Safety according to the objectives/standards and criteria prescribed by the checklists in the Security auditing procedure

SECTION 5.00	HSE ORGANISATION
Element 5.41	Bi-annual Self Audits

OBJECTIVE

To strive for a successful zero incident program by conforming to prescribed HSE standards.

STANDARD

1. Audits shall be done according to the procedure

2. A program shall exist for inspecting housekeeping standards in all divisions.

3. All deviations and findings arising from the internal self-audits shall be reported and corrective actions be taken.

4. A HSE program self-audit team shall be appointed. The team should include at least the following persons or their duly elected designates:
   - The Director Ras Laffan Industrial City.
   - Managers/ Supervisors
   - Fire Officers
   - Safety Officers
   - The Environmental Officers
   - The Senior Medical Officer
   - Emergency Response Co-ordinator

5. A name list with all the members of the self-audit team must be kept on file.

6. A self-audit of the HSE program shall be carried out according to the audit schedule.

7. Spot checks and sample evaluations should be done on the criteria in each checklist by the respective members of the audit team.

8. All persons on the self-audit team should be present during the self-audit and attendance record be kept.

9. A report shall be made after the audit by the auditors regarding all findings and setting out the actions required to correct the deviations found during the audit. This report shall be sent to the applicable Managers/Supervisors for follow-up and action.

Back

10. Follow-up actions shall be carried out by the Managers/Supervisors to see if progress is being made with the corrective actions and to ensure that the target dates set at the audit are adhered to.

11. At least one member of the self-audit team must have completed an approved Auditor's Course.

SECTION 5.00	HSE ORGANISATION
Element 5.42	HSE Design Specifications, Purchasing, Engineering Control, New Plans and Modifications

OBJECTIVE

To ensure that purchased equipment, plants, machinery and new premises conform to the prescribed legal requirements, to protect the health and safety of employees, ensure a high standard of environmental management and achieve the desired quality specifications.

STANDARD

1. Ras Laffan Industrial City should have technical specifications, which clearly describe safety requirements. These should be used for the design and purchase of equipment.

2. Project evaluations should be done on all new plants and plant modifications.

3. HSE site requirements shall be included in contractor's contracts.

4. Contractors should receive HSE training and be in possession of Contractor's HSE Rules and Ras Laffan Industrial City's Standards.

5. Contractor's working areas shall be inspected regularly.

6. Contractor's supervisory personnel are contractually appointed and records kept at the HSE Division.

7. Investigations shall be done and record kept of all contractors' injuries on Ras Laffan Industrial City site by the designated Safety Officer.

8. Deviations shall be identified during inspections on all new plant and equipment and be corrected before handing over the equipment.

9. New equipment should not be used until all the relevant persons have signed the new equipment checklist.

Back

SECTION 5.00	HSE ORGANISATION
Element 5.43	Contractors Control

OBJECTIVE

To ensure that an effective control exists of contractor activity on site.

STANDARD

1. Policy, standards and guidelines for contractors covering the general procedures shall be followed
2. Contractor selection shall address appropriate HSE criteria
3. HSE criteria shall be identified specific to contracts
4. All compliance requirements shall be documented, accepted and verified.
5. Contractors must be able to demonstrate means and competence to comply.
6. Contractors and their worksites shall be subjected to scheduled HSE compliance inspections
7. Contractors should be adequately insured against potential HSE liability
8. Contractors shall appoint a HSE Co-ordinator or Representative
9. Formal induction training shall be provided and includes all relevant HSE areas
10. Contractor’s registration and assessment payment must be verified.

SECTION 5.00	HSE ORGANISATION
Element 5.50	Written HSE Work Procedures (Issued and Used)

OBJECTIVES

To ensure that the employees know:

1. The steps in the task.
2. The tools to use in the task.
3. The hazards in each step in the task.
4. The safety considerations in each step.
5. The personal protection to wear.

To compile a procedure or instruction enabling employees to identify the hazardous tasks, for every job/task.

To educate the employees on these procedures and to ensure that the employee understands his or her tasks.

STANDARD

1. The following items should be considered when compiling the procedures and instruction:

   a) The steps in the task.

   b) The tools to be used for each step.

   c) The hazards to the employee for each step.

   d) The loss to the company for each step.

   e) The HSE considerations for each step.

   f) The personal protective equipment for each step.

   g) The designation responsible for each step.

2. Advantage for written HSE work procedures are:

   - A clear indication regarding the safe and environmentally friendly way to perform a task.
   - Ensure reliability of work and product.
   - Improved performance.

Back

- Improve supervisory techniques.
- Enhance morale of workers.
- Reduce incidents.
- Improve productivity.

3. These procedures/instructions shall be updated on a regular basis.

4. All written procedures/instruction relevant to each department shall be kept in the department. This shall be available for any employee to study/refer to.

5. The employee should be given a copy of the applicable procedures/instructions pertinent to his/her task and be provided with training in them.

6. The procedure/instruction should be used as the standard format for task observations.

7. The procedure/instruction shall be reviewed and updated, if necessary, on an annual basis.

SECTION 5.00	HSE ORGANISATION
Element 5.51	Planned Task Observations and Behaviour Based Approach to HSE

OBJECTIVES

To ensure that written HSE work procedures are in place for the safe, healthy and environmentally acceptable execution of tasks and to provide a means for supervisors to determine whether these work procedures are being adhered to.

STANDARD

1. Each person that is required to execute a hazardous task must complete a "hazardous task identification" form.

2. This list or a copy thereof must be kept in a file at the HSE Section for verification.

3. After all the hazardous task identification forms have been received, a list of priorities must be completed.

4. Each hazardous task must be evaluated according to the level of risk and compliance with procedures.

5. The results must be sent out for comment, after it has been completed.

6. The Task Analysis Form must be kept on the relevant file at the HSE Section as proof that the analysis has been completed.

7. A schedule for planned job observations shall be compiled by the Supervisors

8. When a job observation results in a follow-up action, a follow-up date should be scheduled.

9. The observer and the person being observed must both discuss the outcome of the observation as well as any lessons learnt.

10. Task Safety Observations to be carried out as per the approved procedure (all tasks and employees doing the work must be observed as part of the Behaviour Based Approach process).

11. All supervisors should be trained in the correct method to carry out Task Safety Observations.

12. The forms used in this process shall be filled in thoroughly.

    Task observations should be done when:

    - The accident rate goes up of an individual.

Back

- The incident rate goes up of an individual.
- Employee causes poor performance.
- Employee causes losses.
- Employees take constant chances.
- The “new” employee starts a job.
- The “old” employee starts a “new” job.
- Procedures/ instructions are updated/ changed.
- New machinery, chemicals, methods etc. are introduced.
- The 6-month period has expired, without an observation.
- All records must be kept for a period of three years.

SECTION 5.00	HSE ORGANISATION
Element 5.52	Work Permits

OBJECTIVE

To ensure that maximum precautions are taken for the safe execution of maintenance tasks. Areas and tasks are identified that require a permit. Employees are familiar with the purpose and content of these permits.

STANDARD

1. A survey shall be carried out by the respective Managers/Supervisors to identify the areas/jobs where work permits are required.

2. Managers/Supervisors shall ensure that a list of all areas/jobs that require a safe work permit is in existence.

3. All supervisors/department heads shall be made aware by the Managers/ Supervisors of the areas/jobs that require the use of a work permit.

4. Permits shall always to be used where or when they are required.

5. A copy of the work permit shall always to be kept at the work site where the work is being carried out.

6. A responsible person shall be appointed in writing by the Managers/Supervisors to issue permits and control the work permit system.

7. The work site shall be inspected (before the work commences) by the appointed person and the permit holder to ensure that all the precautions required in terms of the permit have been taken and that it is safe to start the work.

8. After the work has been completed the responsible person and the permit holder shall inspect the work site again to certify that the work has been completed and that the work site is safe.

9. All the completed work permit forms shall be filed and kept for a period of at least three years.

10. Employees who are required to work under work permit conditions shall be trained to use the equipment prescribed in terms of the work permit e.g. fire extinguishers, breathing apparatus, safety harnesses, or any other equipment prescribed to do the job safely.

11. Detailed work permit procedures are explained in the work permit procedure and in work permit modules.

Back

12. The list of Supervisors/ foreman, who are authorised to issue permits, should be available at the area in which the work will be performed. A list of all persons at Ras Laffan Industrial City who are trained to sign or receive permits should be available.

13. The names of persons, who are authorised to accept work permits, should be available.

14. Supervisors must undergo a permit training course, followed by a test, which must be passed before being authorised to issue or receive permits.

15. The following are the different permits to be used:

    a) Access Permits.

    b) Hot work/Cold work permits

    c) Confined Space Permits

    d) Lock-out/Isolation Permits

16. The Supervisor and Managers/Supervisors shall ensure that permits are used.

17. Permits shall be valid only for the period specified in the permit.

18. If the job cannot be completed in the specific time, a new permit shall be issued to cover the remaining time/work needed to complete the job.

19. Deviations and unsafe practices must be reported and rectified immediately.

SECTION 5.00	HSE ORGANISATION
Element 5.60	Off the Job HSE

OBJECTIVE

To motivate employees on a continuous basis to guard against unsafe conditions and practices outside the normal work situation, in order to minimise off the job injuries.

STANDARD

1. A Ras Laffan Industrial City off the job safety standard must exist.

2. Off the job safety propaganda should be available for employees.

3. Off the job injuries shall be reported (Off the job injury report forms are to be available at the Medical Centre).

4. Off the job safety shall be discussed at Meetings.

5. A HSE Representative shall arrange for off-the-job HSE promotion material to be procured. This could include but is not limited to the following:
   - Road safety pamphlets.
   - AIDS prevention/information pamphlets.
   - Home HSE information.
   - Safety around the swimming pool.
   - Alcohol drug abuse information.
   - Stop smoking campaign information.
   - Home security information/checklist etc.

6. Off-the-job HSE information/promotion material shall be distributed to all employees as per schedule.

7. Employees should be encouraged to report off-the-job incidents, including vehicle incidents.

8. All off-the-job incident reports shall be kept on file.