

جمعية الشرق الاوسط  
للغازات الصناعية

**MEGA**

# **SAFE MANAGEMENT OF CONTRACTORS**

**TD 05/14/E**

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# SAFE MANAGEMENT OF CONTRACTORS

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## 1. INTRODUCTION

It is for the MEGA member companies' Health, Safety and Environmental policy to ensure that each person (including employees, contractors, visitors and other third parties) at the site, works in a safe and healthy environment and to maintain an accident-free site.

The principal health, safety and environmental objectives of MEGA members are to:

- Protect the health and well-being of personnel and contractors during work site activities and ensure that safety is the prime consideration in their work execution.
- Achieve zero fatalities, zero lost time injuries, zero restricted work and medical treatment injury cases.
- Ensure that surrounding environment and work site are kept free from contamination and disruption.
- Meet or exceed requirements of environmental regulations.

## 2. SCOPE & PURPOSE

### 2.1. Scope

This document is intended for use by the MEGA member companies to provide recommendations on how to plan and safely execute contracted work.

Although many recommendations of this document may apply, it is not intended to cover temporary workers (who for safety purposes should be treated as an employee) and contracted transportation activities which have to follow specific rules.

### 2.2. Purpose

The aim of MEGA member companies is to provide a work environment in which accidents cannot happen.

Conditions which can cause accidents shall be identified and corrected in a timely way in order to accomplish this aim.

The purpose of this document is primarily preventive and it should be the guide for MEGA member companies and contractors.

## 3. DEFINITIONS

### 3.1. Accident & Incident

Accident is an undesired event giving rise to death, ill health, injury, damage or other loss. An incident is an event that gave rise to an accident or had the potential to lead to an accident.

### 3.2. Company

The company purchasing the external service of the contractor.

### **3.3. Contractor**

An outside undertaking or person which provides goods or services to the company under terms specified in a contract.

### **3.4. Contract Work**

Any service performed by a contractor under the terms of an order placed by a company, specifying that, for a lump sum, a daily fee or according to price lists, defined work shall be performed by the personnel belonging to the contractor and under the latter's authority.

### **3.5. Hazard**

A potential source of harm.

### **3.6. HSE**

Abbreviation of Health, Safety and Environment

### **3.7. Risk**

The chance or probability of exposure to a hazard, combined with the consequences of such exposure.

### **3.8. Risk Assessment**

A structured and systematic procedure for identifying hazards, evaluating risks and prioritizing decisions in order to reduce risks to a tolerable level.

### **3.9. Sub-Contractor**

A sub-contractor is one who takes a portion of a contract from the principal contractor or from another subcontractor. Within this document, the term contractor also includes sub-contractor.

### **3.10. Work**

All work required to be performed by contractor to fully comply with its contract with the company.

### **3.11. Work Area (or site)**

The geographic locations where the work is to be performed (including customer sites).

## **4. SELECTION OF CONTRACTOR**

It is important to include in the safe management of contractors the selection criteria of the contractors as we have to select the "competent and qualified" contractor to do the job to maintain the safety of the work.

The company shall assess which contractor is competent for the work. Works with limited or low HSE risks may require less extensive supervision and following up than those with high HSE risk.

Criteria that should be taken into account when selecting a contractor include the criticality of the work and possible experience of contractors in earlier contracts, qualification, training, HSE performance and HSE certification.

The selection of contractor can be done within a list of pre-qualified contractors whose competencies have been assessed and periodically checked according to the above mentioned criteria.

It is the company's responsibility to evaluate the ability of the contractor to perform the work and then to adjust the HSE requirement accordingly. Also, the company is responsible for defining which requirements included in this document are relevant for the execution of the contract.

The company shall ensure that all local HSE requirements regarding the selection of contractors are applied.

#### **4.1. Contract Work Risk Level**

The company shall evaluate the level of risk to people, property, process or environment of the work, the contractor is asked to perform. The criticality of the work has to be determined and classified in to high and low risk level to be able to prioritize the work in terms of risk criticality.

As an example, high risk work could be:

- Major construction works (including turnkey projects)
- Demolition
- Excavation
- Non routine maintenance/ long duration and high risk maintenance
- Work at height
- Crane operation
- Electrical work
- Confined space work
- Hot work
- Other similar works that is deemed by the company of sufficiently high risk

Examples of low risk work could be:

- Security or Garden services
- Janitorial/ Cleaning works
- Routine maintenance
- Minor painting
- Plumbing/building repairs and similar minor civil engineering work, in nonhazardous areas
- Servicing of office equipment and other office works
- Other similar activities with low risk works

When evaluating the level of risk of the contracted work, company management should identify such items as the number of workers, activity, work duration, gases involved, surroundings and overall activities, the simultaneous presence of various contractors.

Also refer to section 6.



## **4.2. Contractual Agreements**

The company manager (see 5.1.1) shall ensure the contractual agreement between the Company and the contractor is appropriate and proportional to the scope of work and the level of risk.

For high risk level works the company management should develop a formal contract process including:

- Invitation to tender (e.g. covering requirements for risk assessments and method statements for the work, legislative compliance, work carried out under a safe system of work i.e. Permit to Work, contractor induction at company site, HSE Plan).
- Tender review process (company to carry out a suitable contractor selection and evaluation).
- Contractor HSE review (review HSE questionnaire completed by the contractor, perform audit where necessary).
- Contractor insurance questionnaire (review contractors' public/product liability insurance details).
- Contractor checklist (to be completed by contractor and returned to Company for review).
- Contractor post-work review (at the completion of the contract to be completed by the company to record the performance of the contractor).
- General terms of contract.

For low risk level works, the company management may develop general terms of contract and pre-qualify contractors to develop a pool of pre-authorized contractors.

The pre-qualification should be carried out by checking:

- Contractors technical and organizational capability
- Contractor HSE policies

## **4.3. Sub-Contractor Selection**

Contractors may employ or use sub-contractors. For each, the contractor shall request written permission of the company. When such permission is granted it shall be on the clear understanding that the contractor is also responsible for ensuring sub-contractor compliance with the terms of contract.

Same assessment requirements apply to contractors when selecting sub-contractors. For high risk work, the Company may be involved in the sub-contractor's selection or may require confirmation that the process has been followed.

# **5. COMPANY AND CONTRACTOR RESPONSIBILITIES**

## **5.1. Company**

### **5.1.1. Company Contract Manager**

For the purpose of this document, the contract manager is the company's employee who has received responsibility and authority delegation for the work to be done (for example. a plant manager, a site manager, a project manager).

The overall responsibilities of the contract manager are to ensure that the HSE objectives of the company are met on all work carried out, including contracted works.

#### 5.1.2. **Company HSE Representative**

For all relevant HSE matters, the company HSE representative is the contact and cooperates with the staff of the different contractors. He/ She ensures that deputies are appointed in the event that they have to leave the site.

Depending on the level of risk, the responsibilities of the company HSE representative may include all or some of the following tasks:

- Ensure that legal requirements had been fulfilled (risk assessments, specific qualifications).
- Monitor that the contracted work is carried out according to the procedures defined and comply with HSE requirements.
- Ensure that all relevant supervisors and employees have received information about the scope of work and the risks posed to normal operations by the contracted work.
- Ensure that all supervisors and employees of the contractors present on the site have received information about the scope of work, basic emergency site instructions and the required training.
- Promote measures, which can prevent accidents and injuries for contractors' employees.
- Stop work of any contractor's employee which is not executed in accordance with site or contractor's HSE rules and/or work permit and/or a safe manner.
- Inform the contract manager of any infringement of the contractual agreement with respect to HSE matters.
- Review and report the HSE performance of the contractors.
- Tour and inspect the site at a frequency in accordance with the risk level.
- Depending on local legal requirements, maintain the HSE files.

### 5.2. **Contractor**

#### 5.2.1. **Contractor Manager**

For the purpose of this document, the contractor manager is the contractor's employee who has received responsibility and authority delegation from their management for the work to be done (for example a construction manager, a project or contract manager).

The contractor manager responsibilities are to ensure that the contracted work is carried out in accordance with the company's HSE requirements and that the contractor's HSE policy conforms to company safety regulations. They have the overall responsibility of all work carried out in the scope of the contract.

#### 5.2.2. **Contractor HSE representative**

The responsibilities of the contractor HSE representative may include all or some of the

following:

- Abide by terms of the contractual agreement and comply with all safety measures, site specific rules, and legislations applying to the site and the local requirements.
- Monitors that the work is done according to the procedures defined and comply with company HSE requirements.
- Ensures that all contractor's and sub-contractor's supervisors and employees on the site have received information about the scope of work, basic emergency site instructions and the required training regarding risks, hazards, safety measures and procedures on the site.
- Reports HSE matters such as new risk identification, incidents or near misses to the company HSE representative.
- Stops sub-contractor's employee's work which is not executed in accordance with company or contractor HSE requirements, procedures and/or work permit and/or in a safe manner.
- Reviews with the company and subcontractors HSE representatives the safety of the work activities.
- Prepares safety reports including up to date safety statistics.
- Cooperates with the staff of other contractors and their own sub-contractors employees in all relevant HSE matters.
- Tours and inspects the site with a periodicity in accordance with the risk level,
- In addition, depending on local legal requirements, they maintain the HSE files on the contracted work.

They shall nominate a deputy in case he has to leave the site.

### **5.3. Sub-Contractors**

Sub-Contractors shall follow the same HSE rules as required for the principal contractor. These rules shall be part of the contractual specifications placed by the contractor. The contractors and sub- contractors shall provide evidence that resources will be available to implement the HSE rules correctly.

### **5.4. Suppliers**

Equipment and machinery suppliers' who are required to deliver, erect, dismantle or maintain these equipment shall conform to same HSE rules as for sub-contractors. They shall provide sufficient information to meet company HSE requirements (for example electrical certification, maintenance records, qualification records, permits).

## **6. RISK MANAGEMENT**

Also refer to section 4.1.

For the activities under their control, each contractor shall be required to produce a written detailed risk assessment of the work activities the complexity will depend on the level of risk of the work.

Risk assessments should include the following:

- Description of the work activity.
- Identification of hazards for life, health, environment and property associated with the activities. The contractor and the relevant company personnel must make a joint risk assessment of the site and work to be undertaken. Results of this joint risk assessment should be documented with details of emergency procedures and intended measures to control risks.
- Equipment, procedures, precautions and controls required to mitigate the hazards.
- Personnel protective equipment required.
- Time schedule for the work.
- Employee training content.

The resulting work activities' risk assessments should be reviewed by the company HSE representative to ensure that all hazards have been identified and suitable control measures have been defined, with a particular focus on the interaction between all activities that can occur at site (for example company's activities and other contractors' activities).

## **7. COMMUNICATION BETWEEN PARTIES**

### **7.1. HSE Company/Contractor's Meeting**

On award of the contract an HSE kick-off meeting shall be held and attended by company, contractors and sub-contractors representatives.

The goal of the kick-off meeting is to share the information of the joint risk assessments, focusing on the hazards arising from the interaction between company and contractor's activities in the same workplace and to agree the rules to be followed during the work. In the kick-off meeting, discussion of the nature of the work shall take place as well as it is to ensure that the work procedures, potential hazards, and safety precautions are understood by the contractor.

A typical agenda should include:

- Nature, scope and schedule of work
- Site and workplace tour
- Number of contracted employees
- Company and Contractor's HSE plans including waste management
- Clarifying responsibilities of all parties
- Security, site access and traffic management
- Identification of potential hazard and risk assessment evaluation, procedures taken to control identified risk and method statements
- First aid and emergency procedures
- Audits, reviews, inspections
- Incident/accident reporting
- Site induction and training

All communications should accommodate varying languages on site, if applicable.

Formal HSE meetings shall be organized between all parties involved to review HSE matters with a periodicity depending on the duration and the risk level appreciation of the work being

contracted.

The goal of these meetings is to review HSE situation, to have a critical review of HSE matters and to take all necessary actions to improve HSE on site.

A typical agenda for the HSE meeting should include:

- Review of the minutes of the last meeting
- Contractor's HSE report (See note 1 below)
- HSE matters arising
- Accidents, incidents and near misses, including lessons learned
- HSE messages and campaigns
- Forthcoming activities and anticipated concerns
- Feedback from personnel
- Follow-up on HSE actions items

Formal minutes of all meetings shall be issued by company HSE representative and distributed to all concerned parties. Names of attendees, distribution list of the minute, location and date of the meeting shall be recorded and archived until end of guarantee.

*Note 1:* When the contract requires it, the Contractor shall prepare and submit to the Company HSE Representative a periodic report to summarize HSE activities. It may include:

- Survey of all near-miss, incidents, accidents and reported unsafe acts or hazardous situations
- Report from contractors' HSE meetings
- Audit and inspection reports
- Given training
- Any other significant HSE event

### **7.2. Daily Briefing Meetings**

According to the size of the contracted work and to the level of risk involved, HSE issues may be addressed with the Contractor in daily briefing meetings.

Daily briefing meetings shall be given at start of each shift in a language understood by the workforce.

Depending on the nature of the work, the company's or the contractor's HSE Representative shall conduct these meetings. These briefings shall address the application of HSE rules and procedures to mitigate the hazards of current work.

Any advice on HSE issues, generated by personnel should be raised at the periodic HSE review meeting with the company. The conclusion of these discussions should be reported back to the workforce.

### **7.3. HSE Communication to Workers**

According to the size of the contracted work and to the level of risk involved, in order to promote

safety awareness, posters and notices may be posted in key locations around the site in a language understood by the workforce. HSE bulletins should be issued to inform employees about particular issues, accidents, incidents and about progress in achieving objectives and results.

## **8. WORK PERMIT SYSTEM**

Following the joint risk assessment, the work permit is prepared (refer to IGC DOC 40 “Work Permit Systems”).

A work permit system is required in all the cases listed in IGC Doc. 40 “Work Permit Systems”, implemented according to that document and applied by the Company according to its standard procedures.

It shall be agreed and signed by the company contract and contractor managers or their HSE Representatives. It is the contractor’s responsibility to communicate to their employees and sub-contractors employees the hazards, and safety measures that have to be put in place according to the work permit.

The work permit(s) shall be displayed at the work site in a designated location.

Different kinds of work permits may be issued such as General work permit, hot work permit, Confined space entry, Electrical work, Excavation. See Appendix 1 for additional information.

Further information is also available in IGC Doc. 44 “Hazards of inert gases” and IGC Doc. 04 “Fire hazards of oxygen and oxygen enriched atmospheres”.

Whenever necessary, a lock out / tag out procedure shall be implemented in order to assist in protecting workers against injury that can occur due to the accidental start up or release of energy from equipment that are being worked upon (for example. pressure, springs, heat and electricity).

See Appendix 1 for further information.

## **9. OTHER HSE GUIDELINES**

### **9.1. Personal Protective Equipment**

Specific personal protective equipment (PPE) including clothing might be required during work and shall be defined after the full risk assessment of the work has been performed.

PPE shall include that required by the activity carried out by the Contractor and that required in the company’s area where the activity is carried out.

For the latter refer to IGC Doc 136 “Selection of Personal Protective Equipment”. For further information, refer to Appendix 2.

### **9.2. Cranes and Lifting Equipment**

All cranes and lifting equipment, whether owned by contractor or hired, shall carry relevant test certificates and examination reports, to demonstrate the equipment is fit for the intended task and

has been maintained, according to legislation and manufacturer requirements.

Only qualified operators and trained riggers, authorized by the contractor, shall be allowed to operate cranes. The contractor shall be able to prove, to the satisfaction of the company, the competence of their employees to operate such equipment prior to its use. Operators shall be qualified for each make and model of crane operated.

The contractor shall submit a lifting plan to ensure the correct selection of the equipment, people and procedures for the intended task.

Contractor shall implement a regular inspection and maintenance program to ensure that all components of the lifting devices are kept in good conditions.

For further information, refer to Appendix 3.

### **9.3. Portable Electrical Equipment and Hand Tools**

Portable electrical equipment and hand tools need to be kept in a serviceable condition and used for their intended purpose according to manufacturer's recommendations and legal requirements.

For further information, refer to Appendix 4.

### **9.4. Material Handling**

The contractor shall make available mechanical equipment to handle materials within the purpose of the contracted work.

Manual handling shall be allowed only when mechanical handling equipment is not available or not applicable and then only following a suitable manual handling risk assessment and training in relevant control measures..

When using a fork lift refer to IGC Doc 165 "Safe operation with fork lift trucks".

### **9.5. Equipment for Elevated Works**

Ladders, scaffolds and barriers, shall be made available by the contractor whenever necessary. Scaffolds shall only be erected by suitably trained and qualified persons. Ladders and scaffolds shall be routinely inspected for defects.

For further information, refer to Appendix 5.

### **9.6. Welding and Cutting**

For all welding, cutting and grinding activities, the contractor shall only use competent and qualified welders. Welders shall be qualified according to the Standard required by the type of work to be done.

All welding activities shall be subject to a hot work permit.

For further information, refer to Appendix 1 and Appendix 6.

### **9.7. Hazardous Substances**

Hazardous substances shall not be used where a less hazardous alternative exists. All hazardous substances purchased for site whether by contractors or subcontractors shall be purchased, shipped and used in full compliance with the REACH Regulation (EC No 1907/2006).

All hazardous substances shall be supplied with an extended Safety Data Sheet (eSDS) that shall be collected by the Contractor's HSE Representative and be freely available for inspection by any worker.

All hazardous substances shall be stored in accordance with the manufacturer's instructions and employees using those substances shall be trained in their use. Combustible material shall be kept away from ignition sources.

The contractor shall implement a safe system of work and provide all relevant PPE to ensure that the risks associated with the use, handling, storage and disposal of hazardous substances are minimized. They will ensure that any person handling such substances have received instructions, regarding the identification of risks, HSE precautions, as well as spillage, waste and emission control procedures.

### **9.8. X-ray Equipment**

Any work involving the usage of X-ray equipment shall be carried out in accordance with legal regulations and by qualified people. Warning signs and barricades shall be used when required.

### **9.9. Emergency Procedures**

Emergency site procedures shall be communicated to the contractor's manager or HSE representative at the start of the work (e.g. during the first HSE meeting). Prior to starting work, the company shall ensure that all contractor's employees are fully aware of the company emergency procedures (refer also to section 11).

### **Fire Fighting and Protection**

It is the responsibility of the contractor to ensure the training of its employees (and/or subcontractor's employees) in fire prevention.

Depending on the contract terms, it shall also be the responsibility of the contractor to provide firefighting equipment for the fire risks anticipated, (for example: fire extinguishers) on the work site. Fire extinguishers shall be identified with the condition and date of inspection. Empty, damaged or malfunctioning fire extinguishers shall be replaced immediately.

After raising the alarm, all fires shall be immediately reported to the company manager (or their representative on duty), and to the contractor and company HSE representatives.

### **Unexpected product release**

Any contractor's employee discovering an unexpected product release (for example a gas leak, a liquid spill or loss of containment) shall alert all personnel in the immediate vicinity and shall



immediately leave the work area and go to a designated safe location.

The release shall be reported immediately to the company manager (or their representative on duty) and to the contractor and company HSE representative.

#### **9.10. Housekeeping**

The contractor shall ensure workers adhere to housekeeping requirements of the company site.

See Appendix 7 for further information.

#### **9.11. Waste**

Waste management is an environmental issue. The generation of waste should be avoided or minimized. If waste is generated, the contractor shall take all practical steps to ensure that all wastes are, safely and legally managed, from the point at which they are created to the point of disposal.

Disposal of waste generated during contractors work at site is not allowed at the plant site.

If waste disposal is part of the contract or accepted by the plant manager/coordinator it shall be advised where the disposal should be made, preferably supervised by the plant manager/coordinator.

Particular care shall be taken in handling hazardous waste, because it could have the potential to cause air, soil or groundwater pollution if not handled or disposed of in accordance with site rules or legislative requirements.

#### **9.12. Health and Fitness for Duty**

The contractor is responsible for defining and implementing health and fitness requirements for each type of duty, according the job safety analysis (for example avoiding vertigo in elevated works and claustrophobia in confined spaces).

#### **9.13. First Aid Service**

Depending on contract terms, the contractor shall provide the work area with a first aid service for contractor's personnel. Where such service is provided, only qualified personnel shall be employed.

In all cases, the company first aid service shall remain available. All first aid treatment shall be recorded.

#### **9.14. Workers Welfare**

Depending on company site and on the contracted work to be done, in some instances, sanitary and mess facilities could have to be provided by the contractor. Such facilities shall be in line with local legislation.

Refer to Appendix 8 for further information.

### **9.15. Vehicular Traffic**

Vehicular traffic should be kept at a minimum.

On the company site, the local road traffic laws are applicable and other specific site rules may apply and it is the contractor's responsibility to ensure that they are observed.

The site traffic management plan shall be reviewed to identify any impact from Contractor's activity.

For large projects where Contractors have responsibility for specific areas of the site, they shall produce a traffic management plan.

### **9.16. Miscellaneous Regulations and Rules of Conduct**

All contractors' employees are required to conform to the rules of the company site.

## **10. SECURITY PROCEDURES**

The company shall communicate site security and access rules to the contractor. It is the responsibility of contractor's manager to ensure its employees, sub-contractor's employees and visitors comply with these rules.

A complete list of all personnel present on site shall be available and kept updated.

Company security personnel are authorized to conduct security inspections at all times, including search of personnel, toolboxes, vehicles etc. as necessary in compliance with local regulation.

Further information is also available in IGC Doc. 907.

## **11. TRAINING**

In relation to the contracted work, the contractor is responsible for HSE training for all his personnel working on the job site.

They are also responsible for any additional training in order to maintain required competency levels of his personnel.

The contractor shall produce an HSE plan identifying the HSE training requirements of contracted work and evidence of the implementation of the plan.

All contractor and sub-contractor's personnel shall be required to attend an HSE induction training carried out by a company Representative prior to authorization to enter the site and/or commencing work.

As a minimum, this training should include a presentation of the site hazards, its HSE and security rules and emergency procedures.

Depending on the assessment of the level of risk for the contracted work, other relevant HSE

subjects shall be presented (for example. hazardous atmospheres, confined space and pressurized systems).

A training register of all personnel who have been inducted, received additional training or re-training shall be maintained by contractor.

## **12. INSPECTION AND AUDITS**

With a frequency defined by the company, it is the responsibility of the contractor's manager to organize routine inspections of the work to be supported by checklists and inspection report forms. Any non-compliance shall be rectified as soon as practicable depending on the risk. An investigation may be instituted, depending on the nature and/or frequency of occurrence of the non-compliance

Depending on the duration of the contract, the contractor may also be required to conduct audits. The basic purpose of the audits is to assess the reliability, efficiency and effectiveness of the various components of the HSE management system of the contractor.

The contractor shall make available a summary of all inspections to the company manager on request. This report may include the principal unsafe conditions or acts which were observed and the corrections made or recommended.

Depending on the requirements of the contract, full documentation shall be kept by the contractor for review on request by the company HSE representative and for auditing.

See Appendix 9 for further information.

The company's management normally has the right to make audits and/or inspections, and review the contractor's HSE performance at any time.

## **13. REPORTING/INVESTIGATION OF ACCIDENTS AND INCIDENTS**

All accidents/incidents shall be reported immediately to the company manager (or their representative on duty) and to the company HSE representative and be recorded by the contractor HSE representative.

They may include:

- Fatalities
- Lost time accidents
- Recordable work injuries
- Vehicle accidents
- Equipment failure
- Fires
- Environmental incidents / accidents
- Security violations
- Near misses and other recordable incidents
- Unsafe or hazardous situations

The Contractor shall investigate all accidents to determine root causes and to develop measures to prevent recurrence and then to be discussed during the periodic safety meeting. The Company may determine that some accidents require more detailed investigation carried out by a team of experienced individuals including Company and the Contractor Representatives.

#### 14. BIBLIOGRAPHY

- IGC Doc 04/09: "Fire hazards of oxygen and oxygen enriched atmospheres"
- IGC Doc 23/08: "Safety training of employees"
- IGC Doc 40/02: "Work permit systems"
- IGC Doc 44/09: "Hazards of inert gases"
- IGC Doc 90/13: "Incident/accident investigation and analysis"
- IGC Doc 88/14: "Good environmental management practices for the industrial gas industry"
- IGC Doc 106/03: "Environmental issues guide"
- IGC Doc 136/09: "Selection of personal protective equipment"
- IGC Doc 165/10: "Safe operation with fork lift trucks"
- EIGA 907: "Security guidelines"

All documents available on, <http://www.eiga.eu>

## APPENDIX 1: Work permit and related safety measures

(Ref. IGC Doc 40 “Work permit systems”)

In addition to general work permit, specific work permit are common whenever the following activities are carried out

### **Hot work permit**

A Hot Work Permit is required for any activities that introduce a potential ignition source of any kind to the work site, including but not limited to activities such as:

- Welding
- Cutting
- Brazing
- Burning
- Grit-blasting
- Use of electrical power tools (such as drill, sander, grinder)
- Use of matches or lighters (smoking should not be allowed on site)
- Driving vehicles into an area with the risk of explosive atmosphere

All hot work activities require the use of trained fire watch personnel

### **Excavation permit**

An excavation permit is required prior to all excavation (including hand digging) to be performed on site.

Controls shall include:

- Barricading and sign posting of all excavation work is mandatory.
- No one is permitted in an excavation while equipment is working near the edge.
- Excavations deeper than 1.5 meter shall be provided with a ladder for access.
- All dirt shall be piled at least 1.5 meter or the depth of excavation back from the excavation edge whichever is the greater.
- Excavations shall be inspected after rain. Measures should be taken to prevent flooding.

### **Permit for entry into confined spaces (ref. IGC Doc. 44: “Hazards of inert gases”)**

The contractor shall not enter or commence work in any excavation, tank, vessel, pipe or chamber or other confined space, until a valid permit to work has been issued by the company.

Typical examples of a confined space are an open pipeline, or any vessel including towers, tanks, drums, etc.

No person shall enter any confined space before a work permit has been issued and the stated requirements complied with. The main requirements prior to entering a confined space are:

- Atmospheric test shall be carried out immediately before work commences.
- Regular atmosphere tests shall be carried out and recorded.

- Rescue personnel and equipment shall be available at the scene where work is to be carried out.
- A standby man shall be available for the duration of the work at the entrance to the confined space to assist those working and to raise the alarm in event of emergency.
- The work permit shall be displayed at the entrance into a confined space. Additional safety measures connected with work permit included.

### **Isolation Lock out / Tag out**

Isolation includes “Lock out” and “Tag out” procedures.

Lock out is the placement of a lockout device on an energy-insulating device, in accordance with the local applicable regulation, insuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

These would typically be applied to motor or machinery power supply isolators and to process fluid isolation valves.

Examples of lockout devices include, but are not limited to the following: Keyed locks, bolted slip blinds, blank flanges, locking hasps in which a keyed lock may be placed.

- All lock out devices shall be identified by means of an information tags, and shall be used exclusively for energy control purposes. They shall be substantial enough to prevent removal with the use of excessive force.
- Each set of locks, operations, mechanical and electrical locks shall be keyed different.
- The authorized person placing a lockout device shall be identified by means of an information tag.
- Tag out is another system used to isolate systems. As it is not as effective as lock out system, it should be used in combination with a Lock out system.
- Tag out is tag that are securely attached to an energy isolating device to indicate that the device may not be activated and that the equipment may not be operated.
- Tag out devices and their means of attachment shall be designed to prevent accidental removal.
- Tag out shall be weather resistant.
- The tags shall be approved and in accordance with local applicable regulation.

## APPENDIX 2: Personal Protective Equipment

(Ref. IGC Doc 136 "Selection of personal protective equipment")

**The contractor shall ensure that at least the following safety measures are adopted whenever necessary:**

- All employees have to familiarize themselves with where and how safety equipment is to be used and contractor shall be responsible to train their employees on the correct use and maintenance of personal protective equipment
- The contractor's employees shall not perform work unless specified protective equipment is worn.
- Areas where hard hat, safety shoes, glasses, protective clothes are required shall be defined
- Eye and face protective systems (e.g. full face shield over spectacles for grinding and cutting activities) shall be used for all operations where there is potential eye or face injury.
- Suitable and approved hearing protection shall be provided by contractors to all employees engaged in activities where the noise level equals or exceeds first action level of 80 dB (A) and worn when it equals or exceeds the upper action level of 85 dB (A).
- The wearing of short trousers and shirts without sleeves shall not be permitted.
- Where there is potential for inhalation of toxic vapors or gases by any employees, the contractor shall provide respiratory protection.
- Use of safety harnesses is mandatory for any work being carried out as per local regulation above ground level unless work is being carried out from a safe work platform or where alternative fall protection is provided.
- The contractor's management shall provide suitable hand protection for all employees engaged in activities where injuries to their hands can occur.
- Specific precaution shall be taken for work with cryogenic liquids (eye and face protective systems and long insulating gloves)

### APPENDIX 3: Cranes and lifting equipment

The lifting plan submitted by the contractor (see 9.2) should include the following safety measures, whenever necessary:

#### Crane

- Cranes shall not be used to hoist people for elevated work.
- The operator shall inspect the machine including safety devices before starting.
- The operator shall have full responsibility for the safety of a lift and may not make a lift until safety is assured.
- The operator shall understand and be able to determine the crane's capacity.
- A copy of the load chart shall be in the crane whenever it is being operated.
- Accessible areas within the swing radius of the rotating superstructure counter weight of a crane shall be barricaded to prevent people from being struck or crushed by counter weight.
- The load shall not be swung over other people and no individuals shall position themselves under a load.
- The load shall be controlled from the ground by means of taglines.
- Crane outriggers shall be leveled and fully extended and on solid compacted soil when making a lift. Outriggers should be supported if necessary.
- No part of the crane, load, hoist (load and boom) lines, boom and tag line shall come within 5 meters of energized electrical line.
- Crane contractors shall be approved by company.

#### Hooks, shackles, beam lamps and slings

- Only one eye on a hook. A shackle to hold two or more eyes shall be used.
- All hooks shall have a safety latch or be mouthed (steel erection and shake-out hooks are exceptions).
- The load shall always be placed in the centre of a hook and never on the edge.
- Approval shall be obtained from a supervisor before rigging from any structural member to ensure that it can support the load raised.
- Never use plate grips, tongs, pipe clamps etc. as substitutes for beam clamps.
- Hooks, shackles and beam shall be inspected and approved before use. The capacity marked on the equipment shall not be exceeded.

#### Chain hoists

- A chain hoist shall be used within its rated capacity.
- Make sure that the capacity is marked on the equipment.
- Chain hoists are designed so that one person can operate the hand chain to lift the maximum load for the chain hoist.
- Load hanging on a chain hoist shall not be left unsecured and unattended.
- Do not stand or have any part of the body below a load suspended on a chain hoist.
- The load chain shall not be wrapped around the load to be lifted.
- Every chain hoist shall be inspected before making a lift. The visual check should



include the hooks for any irregularities, the chain for wear or damage from abusive treatment.

- Softeners should be used, where possible, to obtain a "bite" on material rigged.

### **Ropes**

- Wire shall be inspected for frays, kinks, broken wires and worn spots before using.
- Fiber shall be inspected for excessive broken fibers, worn out and deteriorated inner and outer strands before using.

#### APPENDIX 4: Portable Electrical Equipment and Hand Tools

**The contractor shall ensure that as a minimum the following safety measures are adopted whenever necessary:**

- People should be trained in the safe use of tools and equipment applicable to their trade.
- Tools or guards shall not be altered. "Home-made" tools are not permitted.
- Personal tools are subject to inspection at any time.
- Tools subject to impact (chisels, star drills) tend to "mushroom". They shall be kept dressed to avoid flying fragments. Tool holders shall be used.
- Tools shall not be forced beyond their capacity, neither "cheaters" to increase their capacity shall be used.
- Portable Electrical equipment and tools shall be "double insulated" or earthed.
- Trigger locks, on all power tools shall be removed.
- Air supply to pneumatic tools shall be shut off and "bled down" before disconnecting.
- Only qualified and authorized personnel should execute work on electrical equipment and installations.

A register of all portable equipment and hand tools shall be maintained by the Contractor and made available to the Company as required.

## APPENDIX 5: Equipment for Elevated Work

The contractor shall ensure that at least the following safety measures are adopted whenever necessary:

### Ladders

- Ladders are to be soundly constructed and maintained.
- Ladders are to be inspected before and after use and any observed defects shall be reported to our supervisor for repair or disposal.
- Ladders shall be fitted using non-slip feet, the frame should be firm and in a good state or repair.
- Non-conductive ladders shall be used for electrical work.
- While ascending or descending a ladder, nothing should be carried that may prevent holding on with both hands.
- Wooden ladders are only allowed on the site if approved by the safety engineer.
- No ladder shall be worked on without it being secured or held in position.
- Ladders shall not be used by people suffering from vertigo or balance problems
- Ladders shall not be used outdoor in case of wind or bad weather

### Scaffolds

- All scaffolds shall be erected by a competent worker authorized by the contractor.
- Each scaffold shall be inspected and "tagged" before it is released for use.
- Rolling scaffolds shall be free of men, material and equipment before being moved.

### Barriers

- Protective barricades are required around excavations, holes or openings in floor or roof areas, edges of roofs and elevated platforms, around certain types of overhead work and wherever necessary to warn people against falling in, through or off.
- Protective barricades shall be of a physical nature, e.g. timber, metal poles, cable and wood post and chain.
- Protective barricades should be visibly marked in order to be seen in daytime and at night.

## APPENDIX 6: Welding and Cutting

**The contractor shall ensure that at least the following safety measures are adopted whenever necessary:**

- Only competent and authorized workers may use welding and cutting equipment.
- Welders shall check their equipment before use for:
  - Damage insulation on welding leads, electrode holders and connections.
  - Faulty earth clamps gauges, pressure reducers, flashback arrestors and torches.
  - Worn or damaged hoses.
- Fire extinguishers shall be available at the welding/cutting site.
- All workers engaged in welding and cutting activities shall be dressed with the specified protective clothing and equipment.
- A flashback arrestor shall be fitted on oxy/fuel system immediately downstream of the pressure regulator and a non-return valve shall be fitted in each gas supply system at the torch.
- Compressed gas cylinders shall not be taken into confined spaces or buildings or placed on scaffolds.
- Valves of compressed gas cylinders shall always be closed and secured by protection caps except when in use.
- Compressed gas cylinders shall always be secured to prevent falling, and shall be protected from being struck by moving equipment and falling objects.
- Oxygen cylinders when in storage shall be separated from fuel gas cylinders or combustible material in accordance with local rules or regulations.
- Handle all gas cylinders with care, as follows:
  - Lift to upper levels with certified cages only.
  - Do not strike an arc on cylinders.
  - Do not use cylinders as rollers.
  - Do not lift with slings or by protective cap.

## APPENDIX 7: Housekeeping

The contractor shall ensure that at least the following measures are adopted whenever necessary:

### General Housekeeping

- Work locations, equipment and buildings shall be kept clean and orderly at all times.
- All work areas shall be free of dangerous projections or obstructions, and are to be maintained free of rubbish, oil, grease and water.
- Flammable waste shall be stored in metal containers located at a safe distance from any possible ignition source.
- Place of work shall be left tidy when the work is finished.
- All stacking of material shall be made on ground that is level and all stacks must be neat and stable.
- All circular objects shall be suitably locked to prevent them from rolling.
- All chemical substances shall be stored in accordance with site and legal requirements. In particular, liquid chemicals shall be stored in/on secondary containment.
- All toilet facilities, including hand basins should be maintained in a clean and hygienic condition.
- No food should be kept in work areas.

### Waste Management

- All waste shall be properly, safely and legally managed from the point of creation to the point of final disposal.
- All scrap or refuse bins shall be visibly marked as to the type of scrap or refuse that can be deposited in them. Bins shall be removed by the contractor on a regular basis.
- Metal or chemical waste should be deposited in separate containers.
- Flammable waste shall be stored in metal containers located at a safe distance from any possible ignition source.
- Ensure that oil or chemical products do not leak away into soil, cooling water, surface water drains or sewer system. This can cause difficulties for subsequent water treatment. They should be collected and/or suctioned off.
- Spillage of oil, grease, etc. shall be cleaned up as soon as possible.

**APPENDIX 8: Welfare facilities****Facilities to be provided whenever necessary:**

- All toilets or other sanitary facilities provided by the contractor shall have adequate lighting, heating, ventilation and water supply.
- The floor, walls and ceiling of sanitary conveniences, closets, lavatories, urinals, sinks and showers shall be of a finish that can be easily cleaned.
- All sanitary conveniences and washrooms shall have window openings to the outside air, or provided with ventilation systems, which change the air at least six times per hour.
- The floor of the shower shall have adequate drainage. Hot and cold water to all wash basins and showers. Soap shall be available in all sanitary conveniences.
- A supply of water for drinking and, where necessary, access to shade to prevent potential heat stress.
- Adequate changing/drying facilities for workers.
- Mess room with sufficient seating capacity.

## APPENDIX 9: Inspections and Audits

### Inspections

The inspections should include:

- Work permits
- Personnel safety equipment
- Tools
- Safe working methods
- Safety Data Sheets
- Procedures
- Safety communications and notices
- Equipment
- Order and tidiness

### Audit

The key elements to be included in the audit should be:

- HSE Policy
- Work organization
- HSE plan and its implementation on the work site
- HSE measuring system
- Statistics
- Work risk assessments, corrective actions and their follow-up
- Minutes and list of attendance of all HSE meetings
- Analysis of inspection and previous Audit reports
- Accident/incident investigation results, corrective actions and their follow-up
- Employee training records
- Equipment certification documentation,