EXPRO

هيئة كفاءة الإنفاق والمشروعات الحكومية
Expenditure Efficiency & Projects Authority

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Fire Prevention and Protection Procedure

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1.0 PURPOSE

This Procedure is to provide guidance to Entities on the minimum fire prevention and protection requirements. It is designed to provide guidance for Facility Managers or Contractor Responsible to develop facility fire risk assessments, prevention and protection plans to prepare for response in the event of fire.

The aim of this Procedure is as follows:

- Manage the significant fire risks inherent in Facility operations.
- Provide immediate, efficient, and effective response/protection from incidents involving fires.

2.0 SCOPE

The scope of this procedure applies to all Fire protection and prevention activities in Facilities and all personnel conducting work as per Government Operations and Maintenance (O&M) Contracts throughout the Kingdom of Saudi Arabia.

3.0 DEFINITIONS

Definitions	Description
Approved	For the purpose of this procedure “Approved” means equipment that has been listed or approved by the concerned Saudi organization such as SASO (Saudi Arabia Standards Organisation), Civil Defence, and or internationally recognized standardization organization or testing lab such as Underwriters Laboratories etc.
CFR	Code of Federal Regulations
Combustion	Any chemical process that involves oxidation that is enough to produce light or heat
Dry Chemical Extinguisher	A fire extinguisher using chemically active powder
Flammable	Capable of being easily ignited, burning strongly or having rapid rate of flame spread.
Flammable liquids	Any liquid having a flashpoint below 37.7°C otherwise known as Class 1 liquids. **1A** – liquids having a flashpoint less than 22.7°C and a boiling point below 37.7°C **1B** – liquids having a flashpoint less than 22.7°C and a boiling point above 37.7°C **1C** – Liquids having a flashpoint at or above 22.7°C and a boiling point below 37.7°C.
Hot Work	Any work activities that introduce a potential ignition source of any kind at the Facility. Open flame sources include, but are not limited to, activities such as welding, cutting, brazing, burning, and grinding.
HSE	Health, Safety and Environment
ISO	International Standards Organisation
JHA	Job Hazard Analysis
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
SASO	Saudi Arabia Standards organisation
VRD	Voltage Reduction Device
WMS	Work Method Statements

4.0 REFERENCES

- OSHA 29 CFR 1926 Subpart F Fire Protection and Prevention.
- EPM-KSS-PR-000001 General Safe Working Requirements Procedure.
- EPM-KSS-PR-000002 Housekeeping Requirements Procedure.
- EPM-KSS-PR-000009 Compressed Gas Cylinder Procedure.
- EPM-KSS-PR-000014 Emergency Preparedness Procedure.
- EPM-KSS-PR-000030 Safety Watches Procedure.
- SASO participation ISO/TC 21 Equipment for fire protection and firefighting
- SASO participation ISO/TC 92 Fire Safety

- Local or Regional Legislation.

5.0 RESPONSIBILITIES

5.1 Facility Manager or Contractor Responsible

- Allocating sufficient equipment and resources to support the implementation of this Procedure and verifying the proper implementation of this Procedure.
- Verifying that proper evaluation of fire hazards is performed and adequate safeguards are in place.
- Verifying prompt action is taken, as needed, to maintain compliance with fire protection and prevention requirements.
- Ensuring there is a business continuity plan is in place.

5.2 HSE Responsible

- Overseeing the implementation of this Procedure.
- Developing and implementing emergency response procedures specific to each potential emergency type.
- Ensuring all contact numbers for use in an emergency are available in the event of an emergency.
- Evaluating fire hazards through periodic inspections as detailed in this Procedure.
- Verifying personnel are trained in fire preventative and defensive measures.
- Coordinating training of fire brigade personnel including fire chief and fire-watch personnel.
- Scheduling and overseeing periodic fire drills.
- Evaluating response during fire drills and making recommendations for improvement.
- Verifying that fire preventative and defensive measures are part of every consideration in regard to equipment and material storage including Facility layout.
- Implementing and monitoring the effectiveness of the fire equipment inspection program (e.g., dry chemical fire extinguisher, hydrants, hose cabinets, smoke alarms, any response vehicles)
- Coordinating resources in the event of fire/drill/exercise.

5.3 Facility Personnel

- Familiarity with fire emergency response procedures, muster point locations, and the proper methods to contact Emergency Services is mandatory.
- Knowing how to activate fire alarm system.
- Methods of warning others of a fire in the area.
- Extinguishing small fires with fire extinguishers within the limits of their training.
- Evacuating the Facility and assembling at the appropriate muster point.
- Reporting to the appropriate Fire Warden at the muster point.
- Following directions given at the muster points.
- Closing all doors and windows as they exit buildings.
- Emergency shutdown of gasoline and diesel powered plant before leaving area if it is safe to do so.
- Closing valves of compressed oxygen and flammable gas cylinders before leaving an area if possible.
- Understanding the procedure for reentering a Facility.

6.0 REQUIREMENTS

6.1 General Requirement

- Each Facility management is responsible for the development of the necessary local Fire Protection and Emergency Preparedness Plan to be followed throughout the phases of work. Such plans must be prepared prior to commencement of work activities, and reviewed on a regular basis, and/or

when work activities change. See **EPM-KSS-PR-000014 Emergency Preparedness Procedure** for further details.

- Combustible and flammable waste must not be allowed to accumulate in any part of the Facility.
- Scrap and combustible materials must be removed from a Facility as soon as it is generated.
- Flammable and combustible materials must not be stacked or stored anywhere in a Facility.
- Rags, fabric, and timber contaminated with any hydrocarbon product must be contained in a closed metal container and removed daily from the workplace to a safe disposal area.
- Smoking will be strictly prohibited in a Facility. Smoking shall be only allowed in designated areas, prohibition and guiding signs must be placed.
- A Facility must complete a fire risk assessment in order to develop their local fire Prevention, Protection and Emergency Preparedness plan. State that this procedure provides the general starting point and that, along with the Facility specific risk assessment, this procedure and any local legislation will help draw up local plans.

6.2 Housekeeping

Facility Managers or Contractor Responsible will develop, implement, and maintain strict housekeeping as an integral part of daily activities. To reduce the potential for fires, an orderly arrangement of material and equipment shall be maintained always. All equipment will be placed in a manner so as not to obstruct access to fire protection equipment, control valves, fire doors, alarm devices or panels, or electrical panels (A minimum clearance of 90cm shall be maintained). Materials or furniture shall not obstruct sprinkler heads. Work areas must be maintained in accordance with the requirements specified in this Procedure. In addition:

- Combustible materials shall be removed from within 10m of any hot work area or potential ignition source. If combustible materials cannot be removed, they must be protected by fire-resistant coverings or shields.
- Combustible and flammable waste shall not be allowed to accumulate in any work areas.
- Scrap and combustible materials shall be removed from as soon as it is generated at agreed intervals.
- Flammable and combustible materials shall not be allowed to accumulate or be stored against structure.
- Rags, fabric, and timber contaminated with any hydrocarbon product shall be discarded in closed metal containers and shall be removed daily from the workplace at agreed intervals.
- Waste receptacles must be provided in a way that does not allow such receptacles to overflow, waste must be segregated in accordance with the governing waste management requirements.
- All Facility personnel must ensure ALL combustible and flammable waste MUST be removed from the Facility as it is generated and before the end of every shift.

6.3 Electrical Equipment

Electrical equipment installation SHALL always be performed by a competent electrician and will conform to applicable regulations, standards, and codes.

- Flexible cables, tools, and equipment, including welding equipment, must be inspected for damage prior to use.
- Only approved connectors may be used on electric cords and electric arc welding leads. All electrical equipment must be isolated after working hours or when not in use.
- Task lighting, particularly halogen lamps must be clear of combustible materials when in use.
- Manual Metal Arc Welding power supplies shall be fitted with a voltage reduction device (VRD).
- Portable electric heaters will be equipped with a tip alarm and an automatic shut-off that will turn the heater off when tipped.
- Electrical appliances that do not meet requirements of applicable regulations, standards, codes, or Contractor criteria shall not be used.

Ancillary power outlets on welding power supplies shall be as follows:

- Individually switched with a double pole switch (or a switch of an equivalent level of safety).
- RCD (Residual Current Device) protected.
- IP 55 rated (IP- Ingress Protection)

- Supplied by a separate winding from the welding current (if self-contained unit) Blanked off to prevent use.

6.4 Mobile Plant and Portable Equipment consuming fuel.

Equipment must not be refueled while the engine is running. Approved type of filling and fuel dispensing equipment must be used. Equipment that cannot be shut down for fueling (such as generators) will be designed and manufactured to provide for safe fueling activities while the equipment is running. In addition, the following requirements apply:

- A suitable, portable fire extinguisher shall be placed adjacent to electric arc welding sets, electricity generating sets, air compressors, and gas-burning equipment. The portable extinguisher shall be placed up-wind and at a safe distance.
- Portable heaters, regardless of fuel source, will be equipped with an approved automatic device to shut off the flow of gas to the main burner and pilot, if used, in the event of flame failure. Heaters having inputs above 50,000 Btu per hour will be equipped with either a pilot, which must be lighted and proved before the main burner can be turned on, or an electrical ignition system.
- Any mobile plant equipment, fuel trucks, and vehicles shall carry or have a suitable portable fire extinguisher attached.
- Internal combustion engines on mobile plants must be switched OFF when not in use.
- Refueling operations will have electrical “grounding and bonding” between the equipment.

6.5 Temporary Facilities

Temporary Facilities shall be placed, positioned or erected in a manner that does not obstruct or adversely affect any means of exit from the main Facilities. Clearance will be maintained around lights and heating units to prevent ignition of combustible materials.

Temporary Facilities will be constructed and maintained in compliance with Regulations/Codes. This includes Emergency Escape Lighting and Exit Signs for Buildings.
Where Temporary Facilities are required by regulation or standards or fire risk assessment to have installed sprinkler systems, fire detection systems, and alarm systems, the building and systems will be designed and constructed, and installed in compliance with applicable standards. These shall be integrated with the main Facility Fire detection and alarm systems:

- Temporary Facilities, when located within another building or structure, will be of either non-combustible construction or of combustible construction having a fire resistance of not less than one hour.
- If a Temporary Facility is not located inside another structure and is not employed for the storage, handling, or use of flammable or combustible liquids, flammable gases, or similar hazardous occupancies, then said Facility will be placed at a distance of not less than 5m from another building or structure. Multiple temporary Facilities not exceeding 185.8 m^2 (2,000 ft^2) in aggregate will be considered a single temporary building.
- Facility housekeeping, material storage, and other combustible materials will be maintained to reduce the potential for fire.
- No Smoking policy SHALL be enforced in all Facility’s.

6.6 Fire Protection

Before allowing occupation of Facility, all required fire protection systems shall be implemented and operable in accordance with legislative requirements and as a result of risk assessment.

Any building used for office space and/or accommodation must comply with the national and local fire legislation, codes or ordinances and, as a part of a Fire Risk Assessment, will consider the following:

- Smoke detectors installed and maintained in all sleeping quarters, kitchens, dining halls, indoor recreation areas, and offices.
- A fire detection system linked to central fire alarm panel that can identify specific location of the fire.

- An alarm system that can be activated via call points and the detection system.
- An adequate number of alarm sounders located to ensure all personnel are alerted in the event of an emergency.
- Sprinkler systems SHALL be in service prior to any Facility occupancy
- Escape routes that are protected against the passage of smoke and flame for a minimum of 30 minutes; i.e., accommodation room doors are fitted with self-closers, walls are constructed of fire resisting materials to ensure containment of the fire and passage of smoke.
- Self-closing fire doors leading into all protected escape routes, on all sleeping accommodation, on stairways and where local legislation requires compartmentalization due to the layout and size of the building.
- An emergency escape lighting system that will ensure safe evacuation if the main lighting system fails.
- Signage identifying fire points, call points, escape routes and fire exits shall be in place.
- An adequate quantity of suitable fire extinguishers and/or other firefighting equipment located in the facility.
- All utilities tested and examined, as required, by local legal requirements and have in date certification available.
- A suitable number of final exits leading to a place of safety.
- Trained fire wardens in place to assist with evacuation and liaison with emergency services.
- Personnel trained in the use of fire extinguishers / firefighting equipment to help contain the fire until the emergency services arrive or extinguish fires.
- Fire evacuation procedures and maps shall be clearly and prominently displayed in each Facility building and work areas.
- Evacuation procedures practiced with scheduled drills, and records of drills will be maintained.
- A suitable and sufficient emergency plan outlining what actions are to be taken in the event of fire, responsibilities, training, monitoring, inspection and testing of equipment, drills etc.
- An adequate supply of water linked to a fire hydrant distribution system, or other suitable water feed for means of extinguishing and/or containing the fire until arrival of the emergency services.

6.6.1 Portable Fire Extinguishers

Fire extinguisher shall be selected and placed in each area of the Facility according to the Fire Risk Assessment in each area. A plan detailing the type and location of fire-fighting equipment shall be developed and posted in buildings and on area bulletin boards. Areas that will have extinguishers permanently located in the vicinity include, but are not limited to:

- Open storage yards.
- Storage areas for flammable or combustible liquids
- Workshops
- Fuel dispensing or service areas
- On all fueled mobile equipment
- Sleeping quarter’s common hallways located near exit doors
- Kitchen areas
- Dining halls
- Indoor recreation areas
- Office common hallways located near exit doors

All fire extinguishers will be inspected, tested, and maintained in accordance with applicable codes/standards, such as National Fire Protection Association (NFPA) standards or international equivalent. Records of inspection must be maintained. Each fire extinguisher will be replaced immediately after discharge with another fire extinguisher that is fully charged and of the proper size and type.

6.6.2 Material Storage and Handling

Materials shall be stored in a manner as not to obstruct access to fire extinguishers, fire protection equipment, control valves, fire doors, alarm boxes devices or panels.
In addition:

- A minimum of 0.9m shall be maintained in aisle ways leading to an exit.
- Materials will not obstruct sprinkler heads. A minimum clearance of 46cm will be maintained from sprinkler heads.
- Materials in work areas shall be limited to actual needs and shall be stored in a manner to protect combustible material from ignition sources.
- Materials shall not be stored or staged on or near roadways, or in other areas where emergency vehicles may need access, unless evaluated by the Emergency Response Coordinator, and authorized by the HSE Responsible following a formal, documented, risk assessment.
- Stored materials shall not cause blind spots for fire-response vehicle operators or Fire-Brigade personnel, in case response is needed.
- Storage areas shall be kept clean, and materials shall be stored in an orderly, controlled, manner.
- Storage quantities of flammable and combustible materials and liquids shall be minimized.
- Hazardous materials shall be segregated and stored with compatible materials.
- Materials shall be stored in a manner shall not obstruct access to fire extinguishers, fire protection equipment, control valves, fire doors, alarm boxes devices or panels
- Materials will not be stored within 1.8m of any inside opening or hoist way.
- Storage areas will be kept clean, and materials will be stored in an orderly, controlled, manner.
- Storage quantities will be kept to a minimum.

6.6.3 Flammable and Combustible Liquids

Flammable and combustible liquids will be clearly labeled, stored, and handled in accordance with legislative requirements and the SDS of the liquids.

- Flammable liquids will be handled and used only in approved, properly labelled safety containers.
- Approved and properly labelled, flammable storage cabinets shall be used for the storage of flammable li of low quantities. Flammable Liquid Storage Cabinets shall be grounded to comply with applicable regulations. Materials will be stored based on their compatibility.
- Where alternatives are available, the Facility management SHALL substitute high-toxicity chemicals with low-toxicity alternatives and use high-flashpoint chemicals and solvents for cleaning purposes.
- Flammable and combustible liquid storage tanks will be provided with secondary containment equal to the tank size plus 10% (110%).
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- Flammables will not be stored with Oxidizers or other incompatible chemicals.
- Flammable and combustible liquid SHALL always be kept to a minimum.

6.6.4 Flammable and Combustible Liquid Storage

Only approved containers and portable tanks shall be used for the storage and handling of flammable and combustible liquids. Approved safety containers with flame arrestors shall be used for the handling of flammable liquids in quantities greater than 3.8l. This rule shall not apply to those flammable liquid materials that are highly viscous; such materials may be used and handled in their original shipping containers. For quantities of 3.8l or less, only the original container or approved safety containers with flame arrestors may be used for storage, use, and handling.

Combustible liquids, including oil or grease, shall be stored in containers or storage tanks labeled with contents and tank capacity. Each tank shall be:

- Capable of withstanding working pressures and stresses compatible with the quantity and type of liquid stored
- Maintained in a manner that prevents leakage
- Located in an area free of combustible materials
- Vented or otherwise constructed to prevent development of pressures of vacuum as a result of filling, emptying, or changes in atmospheric temperature
- Portable storage tanks will be maintained within in a dike area, with provisions made for the handling of spills and groundwater protection. The proximity of tanks to buildings and flammables will comply with local regulations.

Flammable and combustible liquid storage tanks shall be provided with secondary containment equal to the tank size plus 10% (110%).

- Approved and properly labeled, flammable storage cabinets shall be used for the storage of flammable liquids in quantities exceeding 56.8l. Flammable Liquid Storage cabinets will be grounded as required by applicable regulations. Materials shall be stored based on their compatibility.
- Combustible material such as combustible liquids (oils) or combustible solids (cardboard boxes, gloves, rags, etc.) shall not be stored in a flammable storage container or a cabinet containing flammable liquids.
- Flammable and combustible liquids shall not be stored near areas used as exits, stairways, or passageways, and shall not adversely affect a means of egress.

6.6.5 Handling Flammable and Combustible Liquids

The following requirements shall be implemented when handling flammable or combustible liquids:

- Flammable and combustible liquids shall not be used near ignition sources.
- Care shall be taken when welding and cutting in location where combustibles are exposed. When such welding or cutting is done, the surrounding area shall be inspected. Combustible material shall be removed or protected with fire-resistant blankets or equivalent, and adequate number of approved fire extinguishers shall be immediately available.
- Where practical substitute high toxicity liquids with low toxicity alternatives and use of high flashpoint chemicals and solvents for cleaning purposes; i.e., above 60°C (140°F) will be used.
- Flammable liquids shall be handled and used only in approved, properly labeled safety containers.

6.7 Fueling and Transferring Flammable Liquids

The following requirements apply to fueling activities:

- Smoking shall be prohibited where refueling activities are in progress. Clear and legible signs shall be posted indicating “NO SMOKING” in refueling areas.
- The use of cellular phones or other types of radio-frequency (RF) generating devices (pagers, two-way radios, etc.) shall not be permitted during any fueling or flammable liquid transfer operations.
- Fuel cans shall be placed on the ground for filling to avoid the buildup of a static charge generated by the fuel flowing into the can.
- Flammable liquids will be transferred from one container to another only when containers are electrically interconnected (bonded).
- Fuel lines will be equipped with emergency stop valves capable of stopping the flow of fuel at the source and will be located and maintained to minimize fire hazards. This does not apply to fuel lines on self-propelled equipment.
- The dispensing units will be protected against collision damage.
- Fueling equipment must be properly grounded and bonded during fueling operations.
- It is recommended a watch is constantly kept during transfer operations.

6.8 Compressed Gas Cylinders

The usage and storage of compressed-gas cylinders shall be controlled at the Facility and shall be handled in a consistent manner according to the local procedures.

6.8.1 Storage

Storage of compressed gases shall be in compliance with the following:

- Compressed gas cylinders will be secured by a substantial chain, cable or other equivalent method in an upright position at all times.
- Welding gases will be stored in isolated areas and segregated by type of gas.

- Oxygen and flammable compressed-gas cylinders in storage shall be separated by a 1.5m high barrier with a 1-hour fire rating or by a distance of 6m.
- Welding-gas storage areas shall be designated non-smoking areas and shall have conspicuously posted “NO SMOKING” signs.
- Compressed-gas cylinder valves shall be closed and valve protective caps in place whenever:
    - The cylinders are in storage
    - The cylinders are empty
    - The cylinders are moved
- Compressed-gas cylinders shall be stored and located in areas to avoid exposures to ignition sources. If these cannot be avoided, fire-resistant shields shall be provided to protect the cylinders.
- Cylinders will be stored in well-protected, ventilated, dry locations, at least 6.1m from highly combustible materials, and away from egress routes such as stairways and elevators.

6.8.2 Handling of Compressed Gas Cylinders

The requirements for safe handling of compressed gasses include the following:

- Cylinders will be transported in an upright position and will not be hauled in equipment beds or truck beds on their side.
- Compressed gas cylinders will not be transported with gauges attached. The gauges will be removed from cylinders and protective caps installed during movement or transportation.
- Cylinders, all hose apparatus, and connectors will be kept free of oil and grease, and not handled with oily or greasy hands or gloves.
- Compressed-gas cylinders shall never be hoisted unless secured in enclosed frames specifically designed and certified for hoisting the specific cylinders.
- Compressed gas cylinders will not be hoisted by the valve cap or by means of magnets or slings.
- Compressed gas cylinders will not be used as rollers or rolled.
- Compressed-gas cylinders shall not be used or placed in an area if it is possible to become part of an electrical path or circuit.
- Bars will not be used to pry or loosen protective caps, warm water will be used to loosen caps if they are “frozen”.

6.9 Hot Work

Before Hot Work can be carried out in any area, the area must be cleared of all combustible and flammable material and shall be handled in a consistent manner.

- When planning work, consider all cold work alternatives before performing hot work.
- When considering work that involves Hot Work in a Classified Hazardous area, always consider whether there is a viable alternative, for example, using a hand or pneumatic saw for cold cutting rather than using a cutting torch, or moving the item outside of the Classified Hazardous area.
- Hazards associated with the hot work shall be identified and mitigated prior to beginning work.
- The health effects related to Hot Work shall be assessed prior to the activity commencing and appropriate control measures shall be in place to protect the worker and adjacent personnel. Sufficient ventilation will be provided, as needed, to maintain welding fumes and smoke below permissible exposure limits.
- No welding or cutting will be done where flammable liquids, compounds, or dust may create a hazard.
- Where a preservative coating is present, the coating will be removed or alternative methods used for a sufficient distance in each direction to prevent heating of the coating.
- Personnel involved in hot work activities shall be trained and competent in the roles for which they are responsible.
- When normal fire-prevention methods are not sufficient to adequately verify the prevention of fires, additional personnel will be added (Fire Watch) to guard against potential fires.
- A fire extinguisher with a 13.6kg Class A, B, C rating will be at any work location during welding, cutting, soldering, etc. When a fire watch is assigned, the fire watch will have an appropriate type of fire extinguisher placed at the work location for use, if needed.
- A suitable fire extinguisher must be located within easy reach of operations.

- All employees will use the proper personal protective equipment and clothing when performing or assisting in cutting and welding operations (burning glasses, shields, mole skin suits or flame resistant coveralls and gloves, etc.).
- Shielding will be used to protect people and property from injury or damage from arc welding and cutting operations, grinding, sparks, slag, falling objects, or the ultraviolet /infrared radiation of the arc.

Hot Work at heights and from scaffolding presents special hazards. The controls are as follows:

- All work must be coordinated with others working in the area.
- Areas beneath Hot Work must be cleared of all combustible and flammable materials.
- Fire retardant material must be used to cover scaffold boards and to enclose operations.
- Fire retardant material must be removed at the end of every shift to expose scaffold boards or combustible materials.

6.9.1 Hot Work Equipment

- Welding leads and equipment will be properly maintained and inspected before use. Defective equipment will not be used and will be reported to supervision and quarantined.
- Arc welding and cutting operations, including grinding, will be shielded by non-combustible or flameproof screens, shields, or other safeguards for the protection of personnel or materials exposed to sparks, slag, falling objects, or the ultraviolet /infrared radiation of the arc.
- The frame of all electrical generating and arc welding machines will be effectively grounded when the machine's power outlets are being employed as a power source and ground fault interrupter (GFCI) or RCD is required to be used.
- Pipelines containing flammable liquids or gases or electrical cables will not be used as a ground but shall be bonded, as per applicable regulations, to all other equipment.
- If electrode holders are to be left unattended, the electrodes will be removed and the holder placed where it is protected from unintentional contact.
- Welding personnel will be provided a fire-resistant container for the collection of spent electrode stubs.
- Portable welding machines will be turned off when being moved or when the welder must leave the work area for any length of time
- Fuel gas hose and oxygen hoses will be easily distinguishable and will not be interchangeable.
- A suitable fire extinguisher must be located within easy reach of operations.
- Fuel gas cylinders will not be placed in confined spaces. Fuel gas hoses will be removed from confined spaces when not in use.
- Cylinders, all hose apparatus, and connectors will be kept free of oil and grease, and not handled with oily or greasy hands or gloves.
- Oxygen/fuel gas systems will be equipped with approved back-flow valves, flash back arresters, and pressure relief devices.
- Fuel gas/oxygen equipment will be disconnected from the source when left unattended, such as at lunch or at completion of the task. Torches will not be left inside a confined space unattended.
- Welding leads and equipment will be properly maintained and inspected before use. Defective equipment will not be used and will be reported to supervision.
- Arc welding and cutting operations, including grinding, will be shielded by non-combustible or flameproof screens, shields, or other safeguards for the protection of personnel or materials exposed to sparks, slag, falling objects, or the ultraviolet (UV) or infrared (IR) radiation of the arc.
- No welding or cutting will be done where flammable paints, compounds, or dust may create a hazard.
- If normal fire prevention methods are not sufficient to adequately ensure the prevention of fires, a competent fire watch must be assigned to guard against potential fires.
- Hot Work at height and from scaffolding presents special hazards and therefore requires extra precautions.

6.10 Inspection and Testing

- General and specific inspection and maintenance schedules will be developed and implemented for all fire detection, prevention and control equipment. These should be included in the Maintenance Management System
- General inspections will be conducted weekly covering all areas, storage and lay down areas, fabrication and painting areas as per maintenance requirements.
- All inspections will be conducted to an agreed manufacturers or regulatory standard and recorded using an Inspection Checklist Record.
- High activity and high risk areas such as fuel oil and gas storage facilities and power distribution areas, will be inspected daily or more frequent dependent on activity and risk.
- Inspections required by Hot Work Permit will be carried out as per Permit requirements.

7.0 TRAINING

Fire Prevention and fire precautions training will be given to all Supervision, Fire Watches, and Authorized Hot Work Permit Applicants, Security personnel, Stores personnel and selected employees. As a minimum, the Training Program will include:

- Checking portable fire extinguishers.
- Hazard recognition and risk potential.
- Inspection methods.
- Hot Work Permit requirements.
- Emergency Fire procedures.
- Selection and use of portable fire extinguishers.
- Equipment refueling procedures.
- Storage and handling of flammable and combustible liquids.

Fire drills will take place regularly in agreement with local fire authorities to ensure staff familiarity with the emergency preparedness plan, and maintain coordination with Saudi local authorities such as Fire department Saudi Civil Defense, and Red Crescent to improve the effectiveness and response time.

Attachment 1 - EOM-KSS-TP-000032- Hot Work Permit

HOT WORK PERMIT

The supervisor, in issuing this permit, certifies that all safety factors have been considered and cared for satisfactorily.
Return the permit upon completion of the job to the authorizing supervisor. The supervisor will write "COMPLETE", date and initial across the face of the permit.

AREA OF HOT WORK: _____

WORK TO BE PERFORMED: _____

Questions below must be answered YES or NA to proceed.	YES	NO	NA
1. Hot work procedure read and understood?			
2. Work area and equipment free of flammable, combustible, and hazardous materials?			
3. Gas test completed?			
4. Working Fire Extinguisher on the job?			
5. Smoke alarms covered?			
6. Lines disconnected and/or blanked?			
7. Fire watch provided at work area with direct line of site to hot work?			
8. Adjoining equipment and operations considered OK from standpoint of possible effect of hot work?			
9. Other necessary precautions? SPECIFY:			

APPROVAL:
I have personally checked the conditions and I authorize the Hot Work to begin as indicated below:

Approved by: _____ Date _____ Time _____

Hot work permit is good for _____ Hours Only
This permit can be issued for only one shift and becomes void at the end of the work shift.

HOT WORK PERMIT

DO NOT REMOVE THIS TAG!

TO DO SO WITHOUT AUTHORITY WILL RESULT IN DISCIPLINARY ACTION!

REMARKS: _____

SEE OTHER SIDE

SAMPLE