TITLE: Fire Prevention & Protection	**STANDARD:** 203
ISSUE DATE: 31 October 2015	**ISSUE No:** 001

Definitions (in relation to this Standard)

Competent trained, experienced and qualified

Cross-References

- Standard 001 - Accident Notification & Investigation Procedure – Appendix 3
- Standard 201 – Engineering & Vehicle Workshops
- Standard 202 – Storage of Materials
- Standard 204 – Planning & Preparedness
- Standard 206 – Housekeeping
- Standard 227 – Welding Operations
- Standard 228 – Electrical Safety

Standard

General

Procedures

1. Contractor's ES&H Program must contain the Company's general Policy & Procedures for fire prevention and protection measures which must contain as a minimum the requirements of this Standard.

2. A key item of the policy and procedure are "actions to be taken on the outbreak of fire". (An English example can be found at Appendix 1). This document must be clearly displayed in prominent locations and communicated to all employees, sub-contractors, visitors and suppliers during induction training and at regular intervals. It should also be translated into the main language of the workforce.

3. A designated evacuation assembly point must be established within the lay-down area and where applicable on site. Signage in both English and Arabic shall be clearly posted in these areas.

Housekeeping

4. Accumulation of rubbish and waste materials shall be kept to a minimum, and is to be cleared away at regular intervals, when required or as a minimum each day on the cessation of works.

5. Standard 206 – Housekeeping must be complied with.

Smoking & Naked Flames

6. Smoking shall be prohibited within 25m of all refueling activities, and flammable/combustible stores.

7. No equipments shall be refueled whilst the engine is running. All fuel trucks to be grounded when refueling.

8. Those involved in refueling operations shall be trained in safe refueling practices.

9. The use of cellular phones, pagers etc… shall not be permitted during any refueling operations.

Electricity

10. Electrical installation must be performed by a competent electrician and conform to electrical codes and standards for both temporary and permanent electrics. Alterations and additions to wiring or fittings are only to be carried out by a competent electrician.

11. All electrical equipment must be isolated after working hours or when not in use.

12. All defective electrical appliances are to be taken out of use until repaired.

13. All electrical wiring, flexible leads and plugs are to be maintained in a good condition.

14. All distribution panels and isolation switches are to be securable to prevent unauthorized access.

15. Mains electrical switches, distribution panels and boards are to be clearly marked, so that identification and traceability of electrical circuits and cables can be conducted.

16. The use of multi-plug adaptors and home-made extension leads are forbidden.

17. Only plugs compatible with the electrical receptacles (sockets) are permitted.

18. All lighting shall have protective covers to prevent accidental damage.

Gas Cylinders

19. Compressed gas cylinder (referred hereon as "cylinder") valves shall be closed whenever:

    - work is finished
    - cylinders are empty
    - cylinders are being moved

20. Gauges will be removed and valve protection caps in place before moving any cylinders, except when cylinders are secured in a carrier designed for such use.

21. Contractor shall provide cradles / cages for lifting cylinders, and ensure that cylinders being transported are secured in the upright position. Cylinders must never be lifted by rope, chain slings or magnets. Cylinders must never be dropped when being unloaded or loaded from a vehicle.

22. Cylinders will not be rolled, dragged or slid. Contractor shall supply a suitable hand-truck/cylinder trolley suitable for the transportation of cylinders.

23. Cylinders will not be placed where they may become part of an electrical circuit.

24. Cylinders shall not be taken into a confined space.

25. Contractor shall store gas cylinders in a safe manner. Gas cylinders shall be segregated by type, full or empty.

26. Cylinders are to be stored in well ventilated and shaded location, 25m away from all other flammable stores.

27. LPG cylinders are to be kept in a separate storage area either 20 feet (6.1m) away from all other gas cylinders, or a physical barrier a minimum of 5 feet high, with a 1 hour fire rating, must separate the two.

28. All cylinders must be protected against shock, especially falling, or high temperature extremes.

29. All cylinders [unless manufacturer instructions state otherwise – i.e. special gases] must be stored and secured by means of a substantial chain or cable in the upright position, and fitted with valve protection caps.

30. All cylinder storage areas shall be properly signed, and a "no smoking" policy within 25m enforced.

31. Standard 227 – Welding Operations must be complied with for all welding and cutting operations.

32. A portable fire extinguisher with a 30lb (13.6kg) Class A, B, C rating (as applicable) shall be at the work location for all hot works.

Tires

33. Tires shall not be stored in any location where any type of hot works is conducted.

Flammable Liquids

34. Combustible liquids, including oil & greases shall be stored in original containers or in storage tanks, labeled with contents and capacity.

35. All flammable fuels and liquids shall be stored in metal or non-static producing containers.

36. Flammable/combustible liquids and solvents are not to be used near ignition sources.

37. Only approved containers, safety cans and portable tanks shall be used for the storage and handling of flammable and combustible liquids.

38. Approved, properly labeled, storage cabinets shall be used to store flammable liquids in excess of 15 US Gallons.

39. Permanent fuel storage tanks shall be maintained in a bunded area, with provisions made for the handling of spills and groundwater protection.

40. All fuel lines will be equipped with valves capable of stopping the flow of fuel at source, and all piping valves and fittings shall be capable of withstanding working pressures compatible with the type of liquid being stored.

41. All permanent fuel storage tanks and dispensing units shall be protected against collision damage.

42. Flammable liquids will be transferred from one container to another by the use of manual/mechanical approved pump, and with the use of a funnel.

Offices

43. There shall be a minimum of 5m between all buildings and structures.

44. All offices shall be fitted with smoke detectors and portable fire extinguishers.

45. There shall be a "no smoking" policy in all offices.

46. No materials shall be stored in doorways, under stairs, access/egress, emergency exits or fire exit routes.

47. All exits must be clearly signed.

Stores

48. All shipping (Iso) storage containers that have electrical supplies (lighting and/or air-conditioning) must be grounded / earthed.

49. Storage areas shall be kept clean and housekeeping strictly maintained.

50. Materials shall not be stored in a manner so as to obstruct access to fire protection equipment (detectors/alarms/panels), fire fighting equipment, control valves, doors, electrical panels, motors, or aisles and hallways that serve as a means of escape.

51. Aisles and hallways shall be a minimum of 36 inches (91cm) wide.

52. There must be a minimum clearance of 18 inches (46cm) between materials and sprinkler heads (where fitted).

53. Materials shall not be stored within 6 feet (1.8m) of any doorway or opening.

54. Materials storage shall comply with Standard 202 – Storage of Materials.

55. All materials shall be stored as per their Material Safety Data Sheet (MSDS).

Vehicles, Sheds, Garages & Workshops

56. Standard 201 – Engineering & Vehicle Workshops must be complied with for all vehicles, sheds, garages and workshops.

Means of Escape

57. All warehouses are to have secondary fire exits.

58. All means of escape from a building or area are to be kept clear and free from obstruction.

59. All escape routes are to be clearly signed and indicate the most direct route to a place of safety.

60. Doors on designated escape routes shall not be locked with a key, or blocked so as to prevent escape.

61. Escape routes should be adequately lit, with either natural light or domestic lighting, and if necessary, with emergency lighting.

Training of Personnel

62. Contractor shall ensure every six months that all personnel including sub-contractors, visitors and suppliers are made aware of the actions to be taken on the outbreak of fire, the method of raising the alarm, the location of assembly points, and the location of fire fighting equipment.

63. Contractor shall ensure that on a quarterly basis, Toolbox Talk training is delivered to all personnel on principles of fire prevention and protection.

64. Contractor shall ensure that an adequate amount of contractor's personnel are competent to use the fire fighting equipment provided, and these personnel are to form an Initial Response Team for fighting fires.

65. Supervisors are to be trained and practiced in emergency procedures.

Fire Alarm / Detection Systems

66. An effective means of providing a warning to personnel in the event of a fire is required for all locations.

67. Types of alarm can include:

- Verbally (shouting "fire", "fire", "fire")
- Hand-held bell, or hand-rotating bell
- Electric break glass fire alarm
- Visual alarm (flashing beacon used in noisy locations)
- Automatic fire detection (heat/smoke detectors) – **must** be used in offices

- Any other pre-arranged effective means of warning

Fire Fighting Equipment

68. An adequate and sufficient amount of relevant fire fighting equipment is to be located throughout the lay-down area and site at designated prominent "Fire Points":

    - 1 per building (or 3000 square feet / 278.7 sq. meters) and within 75 feet (22.9m) of uninterrupted travel.
    - For every floor of a building
    - 1 within 50 feet (15.2m) where more than 5 US gallons (18.9L) of flammable or combustible liquids are being used
    - 1 within 50 feet (15.2m) where more than 5 pounds (2.3kg) of flammable gases are being used
    - 1 every 75 feet (22.9m) in open storage yards
    - 1 every flammable or combustible liquids storage area
    - 1 every fuel dispensing or servicing area
    - Every motorized equipment

69. All internal storage areas shall have portable Fire Extinguishers applicable to the type of hazard, and in sufficient numbers.

70. Fire Points are to be easily identifiable and shaded against the sun to ensure fire extinguishers are not over-charged by the heat.

71. Personnel not trained in the use of fire fighting equipment are not to attempt to fight fires.

72. Each fire extinguisher shall be replaced immediately after discharge with a fully charged fire extinguisher of same size and type.

73. Right type of Fire extinguisher shall be used according to the class of fire (See Appendix 2 & 3)

Water Supplies

74. Contractor is to know the location of the nearest source of fire water mains to the lay-down area, and ensure details are kept with the Security guard so that he may relay the information to the emergency services in the event of a fire.

Maintenance & Records

75. All fire fighting equipment will be inspected, tested and maintained in accordance with International standards (i.e. NFPA etc…); records shall be kept and made available to Royal Commission upon request.

Fire Prevention Checks

76. A fire prevention check shall be carried out, if Hot Works have been conducted, 1hour after the activity has ceased.

Plants & Undergrowth

77. Plants & Undergrowth is to be kept short and removed for a distance of not less than 15m from:
    - Vehicle and Engineering Workshops
    - Bulk fuels, oils & lubricants
    - Fuel dispensing area
    - Gas cylinder storage areas (including LPG)

Emergencies

78. Emergency contact phone numbers to be displayed about offices, stores, site and welfare areas (RC Security – 341 7777, Fire / Civil Defense – 998 shall be included). A copy of these emergency numbers to be displayed in the guard house.

79. Regular (quarterly) fire drills are to be conducted.

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000	May-2009	Original	MS	WG	HS
001	Oct - 2015	1st Revision	FH	FC	AK

Appendix 1

ACTIONS TO BE TAKEN ON THE OUTBREAK OF FIRE

BY PERSON DISCOVERING THE FIRE

1. Raise the alarm by sounding the nearest fire alarm call point.
2. Attack the fire if possible, **ONLY** if trained, and **SAFE** to do so.
3. If trained and only if safe to do so, assist with the evacuation of personnel, evacuate to assembly point.

BY ALL OTHER STAFF

On hearing the alarm:

4. All buildings are to be evacuated as quickly as possible in a calm and controlled manner.
5. All staff ~~are~~ is to move **IMMEDIATELY** to the designated assembly area, ensuring your name is registered with your Supervisor.
6. Supervisors are to ensure that there are no persons left within their designated area before proceeding to assembly area.
7. Supervisors are to ensure all employees are accounted for within their Department. Supervisors are then to report to the Project Manager the findings.
8. The Project Manager is to carry out the following:
    a) Instruct all personnel stay at assembly point until told to do otherwise by the senior person from the Emergency Services.
    b) Inform Senior person from the Emergency services when all personnel are accounted.

BY SECURITY

9. Ensure the Fire Alarm is sounding.
10. Inform Emergency Services.
11. Allow no one access to the site apart from the Emergency Services.

BY WORKSHOPS MANAGER

12. Turn off any gas and electricity at mains.

Note:

Do not re-enter the building until it is declared safe to do so

Appendix 2

Classification of Fire

CLASS A		Fires involving mainly organic solids (Wood, paper, plastics, etc.).
CLASS B		Fires involving flammable liquids (such as petrol, paint, oils) and liquefiable solids (such as fats, waxes, greases but excluding cooking oils/fats).
CLASS C		Fires involving gases (such as butane, propane).
CLASS D		Fires involving certain metals (such as sodium, magnesium, aluminum)
CLASS E		Fires involving live electrical equipment.
CLASS F		Fires involving commercial deep fat/oil fryers.

Appendix 3

Guidance on Types of Fire Extinguisher

	Colours	A	B	C	D		F
Type:		Fires involving freely burning materials. For example wood, paper, textiles and other carbonaceous materials.	Fires involving flammable liquids. For example petrols and spirits. NOT ALCOHOL OR COOKING OIL.	Fires involving flammable gasses. For example propane and butane.	Fires involving burning metals.	Fires caused by electrical equipment where electric current may be present.	Fires involving cooking oil and fat. For example olive oil, maize oil, lard and butter.
Water		✓	✗	✗	✗	✗	✗
Foam		✓	✓	✗	✗	✗	**ABF Foam Only**
Dry Powder		✓	✓	✓	✗	✓*	✗
M28/L2		✗	✗	✗	✓	✗	✗
CO2 Gas		✗	✓	✗	✗	✓	✗
Wet Chemical		✓	✗	✗	✗	✗	✓