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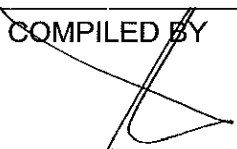
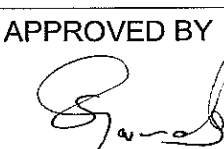
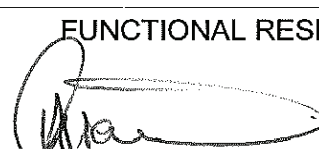
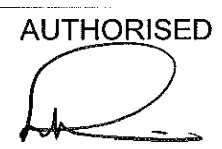
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## Foreword

This standard addresses typical fire risks found in Distribution. It also focuses on sections within legislation which are of particular importance in terms of fire safety.

## Revision history

This revision cancels and replaces revision no. 0 of DST 34-132.

Date	Rev.	Clause	Remarks
Oct 2009	1	-	Document approved.
June 2009	1B	-	Document submitted for voting.
May 2009	1A	-	Document submitted for comments.
April 2009	1A	-	<b>Compiled By:</b> S Govender
		-	Included Forward.
		Section 2	Updated Normative References.
		Section 3	Updated 3.2 Abbreviations, specifically: Included h: hours
		Section 4	The following sections of the text were amended: Amended 4.1 Responsibilities; Amended 4.2 Minimum Training, specifically: 4.2.1, 4.2.2, 4.2.3; Amended 4.3 Fire Safety of Employees, specifically: 4.3.4 Other Fire Safety Requirements, amended heading to include (complexes, outlying units (TSC's/camps), Amended 4.3.5 Practical Exercises; Amended 4.6 Grass Fires, specifically added Note under point 5; Amended 4.8 Bulk Pole Storage Yards, specifically: 4.8.1 General Requirements, deleted sub-paragraph 4.8.1.13; Amended 4.10 Storage of Flammable Liquid, specifically: 4.10.3 Fire Resistant Flammable Liquid Stores, specifically 4.10.3.4 Windows; Amended 4.14 Portable Fire Extinguishers, specifically: 4.14.4 Location of Portable Fire Extinguishers, specifically amended 4.14.4.1(d); Amended 4.15 Vehicle Fire Extinguishers; Amended 4.16 Purchasing Requirements; Deleted previous 4.20 Exemptions.
		Annex K	Amended Model Fire Warden/Co-ordinator Appointment Form
April 2007	0	-	Document approved.
Dec 2006	A	-	<b>Compiled By:</b> A Boodhram Document Reference number changed from SCSASAAJ6 to DST 34-132, to bring in line with organisational requirements; New document format, in line with Corporate Identity; Updated Section 2 Normative/Informative References; Updated Section 3 Definitions and Abbreviations, specifically: Amended 3.1 Definitions: Included 3.1.1. Park Homes; Amended 3.2. Abbreviations: Included 3.2.1. CO <sup>2</sup> Included 3.2.2 IARC Included 3.2.3 LG SETA Included 3.2.4 LPG Included 3.2.5. MT Included 3.2.6. OHS ACT Included 3.2.7. µm; The following sections of the text were revised, specifically: Section 4.2 Minimum Training;

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Date	Rev.	Clause	Remarks
			Section 4.3 Fire Safety of Employees, specifically: Amended 4.3.1 Occupational Health and Safety Act (Act 85 of 1993), Amended 4.3.4 Other Fire Safety Requirements, Amended 4.3.6 Planned Inspections; Amended Section 4.4 Fire Protection of Buildings; Deleted previous Section 4.5 Use of Local Fire Brigades & Other Recognised Service Providers; Amended Section 4.5. Substations, specifically: Amended 4.5.3 Fire Extinguishers; Included Section 4.7 Public Liability Claims; Amended Section 4.10 Storage of flammable liquids, specifically: Amended 4.10.1 Heading Previously Incidental Storage changed to Temporary Storage; Amended Section 4.11.3 Oil Stored in Buildings used for other purposes, specifically: Amended 4.11.3.1 Heading Previously Incidental Storage changed to Temporary Storage; Amended Section 4.18 Smoking; Section 4.19 Exemptions; Included Annex D – Included Example of Monthly Inspection Checklist for Hydrants; Included Annex I - Example of a Gas Fire Extinguisher Inspection Checklist; Deleted previous Annex K – Revision; Included Impact Assessment.
May 2001	0	-	Compiled By: M Creswell & S Isaacs

**Authorisation**

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Advanced fire training, Basic fire training, Fire, Fire alarm, Fire co-ordinator, Fire extinguisher, Fire fighting equipment, Fire protection, Fire warden

**Bibliography**

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Not Applicable.

## **1 Scope**

### **1.1 Purpose**

The purpose of this standard is to identify the basic requirements to be met in order to achieve an effective fire prevention/protection programme.

### **1.2 Applicability**

This standard is applicable to all Distribution Business Units.

## **2 Normative references**

Parties using this standard shall apply the most recent edition of the documents listed below:

Fire Protection Association, Bulletin 16, Storage of gas cylinders

Fire Protection Association, Bulletin 37, Flammable liquid stores

International Maritime Dangerous Goods Code

ISO 9001:2000 Quality Management Systems

Occupational Health and Safety Act, Act 85 of 1993

National Fire Protection Association - USA, Code 46:1996, Storage of Forest Products

National Veld & Forest Fire Act, Act 101 of 1998

NFPA 12; 12A: Inspection, Maintenance, Testing and Training for Fixed Gas Fire Extinguishing Systems

NFPA 72: Inspection, Testing and Maintenance of Fire Alarms and Detection Systems

Standards Act, Act 30 of 1982

DST 34-316: The Requirement for the Selection of Health and Safety Representatives and Establishing Health and Safety Committee Systems

DST 34-405: Risk Management Filing System

DISASAAA0: Passive Fire Protection in Distribution Substation Yards

DST 34-961: Legal Appointments and Authorisations

EPC 32-36: Smoking Procedure

DST 34-1168: Colour Coding Symbolic Safety Signs and Demarcation

DST 34-1454: Clearing and Maintenance of Servitude Routes

EPC 32-95: Effective Management of Safety Health and Environmental related Incidents

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EPC 32-245: Environmental Procedure: Waste Procedure

DPC 34-421: Procedure to Process Asset Incidents and Insurance Claims

SANS 1186-1: Symbolic Safety Signs - Standard Signs and General Requirements

SANS 1475-2: The Production of Reconditioned Fire-Fighting Equipment – Fire Hose Reels, Hydrants and Booster Connections

SANS 1475-1: The Production of Reconditioned Fire-Fighting Equipment: Portable and Wheeled (mobile) Rechargeable Fire Extinguishers

SANS 10019: Transportable Containers for Compressed Dissolved and Liquefied Gases - Basic Design, Manufacture, Use and Maintenance

SANS 10087-2: The Handling, Storage and Distribution of Liquefied Petroleum Gas in Domestic, Commercial and Industrial Installations – Installations in Mobile Units and Small Non-Permanent Buildings

SANS 10087-7: The Handling, Storage, Distribution and Maintenance of Liquefied Petroleum Gas in Domestic, Commercial and Industrial Installations – Storage and Filling Premises for Refillable Liquefied Petroleum Gas (LPG) Containers of Gas Capacity not exceeding 9 kg and the Storage of Individual Gas Containers not exceeding 48 kg

SANS 10105-1: The Use and Control of Fire Fighting Equipment- Portable and Wheeled (mobile) Fire Extinguishers

SANS 10105-2: The Use and Control of Fire Fighting Equipment- Fire Hose Reels, Hydrants and Booster Connections

SANS 10108: The Classification of Hazardous Locations and the Selection of Apparatus for Use in such Locations

SANS 10139: Fire Detection and Alarm System for Buildings – System Design, Installation and Servicing

SANS 10228: The Identification and Classification of Dangerous Goods for Transport

SANS 10229-1: Transport of Dangerous Goods - Packaging and Large Packaging for Road and Rail Transportation: Packaging

SANS 10287: Automatic Sprinkler Installations for Fire-fighting purposes

SANS 10400: The Application of the National Building Regulations

SANS 14520-1: Gaseous Fire-extinguishing Systems - Physical Properties and System Design: General Requirements

**NOTE: SANS documents are available on the Eskom Intranet under Eskom Useful sites, Information Centre.**

### **3 Definitions and abbreviations**

#### **3.1 Definitions**

**Park Homes:** Caravan park or similar areas used for temporary accommodation purposes.

#### **3.2 Abbreviations**

**CO<sup>2</sup>:** Carbon dioxide

**h:** hour(s)

**IARC:** Industry Association Resource Centre

**LG SETA:** The Local Government Sector Education Training Authority

**LPG:** Liquefied Petroleum Gas

**MT:** An acronym for empty (The marking to be placed on an empty LPG cylinder)

**OHS ACT:** Occupational Health and Safety Act, Act 85 of 1993

**µm:** micro-meter

### **4 Requirements**

Compliance with this standard will be monitored through the Risk Audit System (RAS) and cross-reference will be made between this standard and RAS.

#### **4.1 Responsibilities**

**4.1.1** Line Management shall be responsible for fire risk management and the requirements of this document for their specific areas.

**4.1.2** Co-ordination of fire risk management within a Distribution Region shall be assigned to a person who:

- a) is preferably at middle management level;
- b) has the ability to negotiate with senior managers as well as Local Authorities at Town Clerk level;
- c) has access to and regular contact with the Business Unit's top management team;
- d) can identify and evaluate risks and make appropriate recommendations in terms of the control and financing of risks; and
- e) has knowledge of the statutory and Eskom requirements pertaining to fire risk management and is aware of all SANS documents associated with the subject.

## **4.2 Minimum Training**

### **4.2.1 Fire Warden/Co-ordinator Local Authority Course**

- Basic fire training

### **4.2.2 Safety Health and Environmental officer**

- Basic fire training

### **4.2.3 Where a need is identified - other employees**

- Basic fire training

**4.2.4** Training shall be done by any one of the following training institutions, for example, The Fire Prevention Association (FPA), the Risk Management Department, a Local Authority Representative or any other recognised institution that presents LG SETA accredited unit standard courses.

## **4.3 Fire Safety of Employees**

### **4.3.1 Occupational Health and Safety Act (Act No 85 of 1993)**

This Act is a statutory document and shall be complied with.

### **4.3.2 Environmental Regulations for Workplace Requirements:**

#### **4.3.2.1** Comply with sub regulation 9

#### **Regulation 9: Fire precautions and means of egress**

This section deals with providing a safe exit from a workplace. This should be read in conjunction with SANS 10400: The Application of the National Building Regulations - Parts TT17 to TT30 which deal with escape routes in much more detail.

#### **4.3.2.2** To comply with Veld and Forestry Regulations.

### **4.3.3 General Safety Regulations**

#### **Regulation 4: Use and Storage of Flammable Liquids**

An employer shall not permit any person to work in a place where there are flammable liquid vapours or a potential fire or explosion hazard, unless precautionary measures are taken/prescribed.

No employer shall permit a flammable liquid to be used or spray painting to be carried out in a room, cabinet or place unless specific precautions are taken in terms of the Regulations.

Note: Regulation 4 also deals with flammable liquid stores but this is discussed in more detail under section 10 of this Standard.



**Regulation 9: Welding, flame-cutting, soldering and similar operations**

A workplace where any of the above work is to be carried out shall be effectively partitioned off.

The equipment to be used shall comply with the specified safety standards and fire precautions.

No welding, flame-cutting etc. shall be carried out on any vessel or similar container which contains a substance which could ignite or explode.

Where such operation is undertaken in buildings or other locations where a fire can occur through the above operations, then a hot work permit system shall be enforced.

**4.3.4 Other Fire Safety Requirements (complexes, outlying units (TSC's/camps))**

**4.3.4.1** Every employee shall familiarise themselves with the emergency preparedness procedures for that workplace which should cover:

- a) what the emergency alarm sounds like (where applicable);
- b) what to do on hearing the alarm;
- c) who to contact in case of a fire or how to activate the alarm;
- d) the emergency telephone numbers;
- e) which evacuation route to use in an emergency;
- f) where the evacuation assembly point is located;
- g) where the nearest fire fighting equipment is located; and
- h) who the Evacuation/Fire Warden is.

**4.3.4.2** Provision shall be made for the protection of strategic documents and records from fire, smoke as well as water that may be used during fire fighting and theft.

**4.3.4.3** The establishment of an in-house fire team for any building complex shall be at the discretion of the relevant Manager. Consideration shall however be given to what is already available in terms of a Local Authority fire brigade. It is a requirement that all employees be trained in the handling of the appropriate equipment on site.

**4.3.4.4** Although it may not be necessary to establish an in-house fire team, it is good practice to have a Fire Warden/Co-ordinator appointed on each floor that can initially attack a fire and assist with evacuation. The number of Fire Wardens will depend on the size of the building and the number of employees, but will normally range from one to three wardens per floor, or in line with the qualified specialists' recommendations.

**4.3.5 Practical exercises**

Employers shall carry out any one or more of the following activities on a six (6) monthly basis:

Note: It is the Line Managers prerogative to hold exercises on a more frequent basis.

**4.3.5.1** "Dry Runs" i.e. go through the motions of extinguishing a fire using available equipment.

**4.3.5.2** Paper exercises.

**4.3.5.3** Discussion of other Eskom unit related fire incidents (case studies).

**4.3.5.4** Show fire prevention videos: "The right to know" or the Fire Prevention Association (FPA) series.

**4.3.5.5** Use domestic hose reels and hydrants (where available) during demonstrations.

**4.3.5.6** Use one or two portable extinguishers on a simulated fire, just prior to having them serviced.

**4.3.5.7** Fire, first aid and evacuation exercises may be combined.

The Employer shall keep a register of all training and practical exercises conducted. (Refer to Annex J)

#### **4.3.6 Planned inspections**

**4.3.6.1** Employers shall ensure visual inspections are carried out on the following equipment on a monthly basis:

(Refer to Annex A to Annex H for examples of monthly inspection procedures and inspection sheets)

- a) fire extinguishers;
- b) hose reels;
- c) hydrants/ standpipes/ booster connections;
- d) sprinkler systems;
- e) emergency exits, emergency lights, passageways, staircases etc;
- f) flame proof lighting (if any);
- g) fire alarms and back-up alarms;
- h) local emergency telephone numbers
- i) BA (Breathing Apparatus) sets
- j) CO<sup>2</sup> fixed systems
- k) Fire detection systems
- l) Fire breaks

**4.3.6.2** Refer to Annex A to Annex L for a detailed list of what shall be inspected in terms of the fire prevention and emergency preparedness equipment listed in **4.3.6.1.** above.

**4.3.6.3** A fire risk assessment of all areas shall be conducted two-yearly by a fire expert, for example, local fire brigade, or the FPA to identify fire risks and determine the unit's requirements and the placement of the fire extinguishing equipment. Other recognised organisations may be used provided their qualification and experience has been evaluated and approved by the Regional Risk Management Department.

**4.3.6.4** The location of all fire extinguishing equipment shall be indicated by symbolic safety signs visible from all directions, on a plan of the premises displayed on the notice board and shall be made available in the Emergency Preparedness Contingency Plan.

**4.3.6.5** When Eskom leases any premises, one of the contractual requirements shall include the requirements as set out in paragraph **4.3.6.3.** above.

#### **4.3.7 Maintenance of Extinguishing Equipment**

**4.3.7.1** A person shall be responsible for listing all fire extinguishing equipment and fire systems on a register and for checking it monthly. Record of all checks shall be filed in the relevant section of the Risk Management Filing System. (Refer to Annex K for An Example of an Appointment Letter for a Fire Warden/Co-ordinator).

**4.3.7.2** All fire extinguishing equipment and fire systems shall be serviced annually by competent persons/organisations, and they shall provide sufficient proof of all checks (fire extinguishers, hose reels, hydrants) and pressure tests. (Refer to SANS 10105-1: The Use and Control of Fire Fighting Equipment - Portable and Wheeled (mobile) Fire Extinguishers and SANS 10105-2: The Use and Control of Fire Fighting Equipment - Fire Hose Reels, Hydrants and Booster Connections).

**4.3.7.3** The contractor that services the fire extinguishing equipment and fire systems shall be approved by the South African Bureau of Standards, 1475 accreditation and registered with SAQCC (South African Quality Control Council).

**4.3.7.4** The person responsible for the unit's fire extinguishing equipment and fire systems shall ensure that the relevant documentation is in place after any maintenance has been carried out by the service provider, for example, pressure test certificates and maintenance records. The responsible person shall also check while the equipment is being serviced by the contractor, and sign off the delivery note, indicating his/her satisfaction as to services rendered. (Refer to SANS 1475 and 10105)

#### **4.4 Fire Protection of Buildings**

The protection of buildings shall comply with the National Building Regulations and Building Standards Act (Act No 103 of 1977).

##### **4.4.1 SANS 10400: The Application of the National Building Regulations**

Any building which is owned or rented by Eskom shall comply with SANS 10400: The Application of the National Building Regulations.

#### **4.5 Substations**

##### **4.5.1 Distribution Standard**

Substations shall comply with DISASAAA0: Passive Fire Protection in Distribution Substation Yards.

##### **4.5.2 Oil Holding Dams**

Substations where oil holding dams have been provided, provision shall be made in their maintenance schedules to clean out the dams on an annual basis. All open holding dams shall be fenced off.

##### **4.5.3 Fire extinguishers**

**4.5.3.1** Section 5.1(f) of the Electrical Machinery Regulations of the Occupational Health and Safety Act, as stated:

At least 1 X 9 kg chemical powder or 1 X 6,8 kg (minimum mass rating) CO<sup>2</sup> fire extinguisher shall be available only whilst work is being carried out at the substation. These fire extinguishers shall be brought on site by those working at the substation or be permanently fixed at the relay room in the substation.

#### **4.5.4 Fire prevention**

All operating, maintenance and design shall comply with IARC's design specifications for fire prevention and shall be considered in all design, operating and maintenance manuals.

#### **4.5.5 Fire brigade protection of substations**

**4.5.5.1** Where any strategic substation does not fall under the protection of a fire brigade, the nearest fire brigade to that substation shall be identified.

**4.5.5.2** Any fire brigade that will be required to respond to a strategic substation, whether it is as a result of the substation falling within its jurisdiction or because of a service level agreement, fire fighters from that fire brigade shall be invited to visit the substation. This shall be done once every two years.

**4.5.5.3** A written pre-fire plan shall be drawn-up in conjunction with the relevant fire brigade and the responsible Employer for the substation. The pre-fire plan shall, as a minimum, address the following:

- a) the name and location of the substation (preferably include a map);
- b) the name of the Employer and his telephone number;
- c) other relevant Eskom emergency telephone numbers;
- d) access control;
- e) what the fire brigade should do when it arrives on site, particularly when the substation is unattended;
- f) when will it be safe to commence fire fighting;
- g) who will give authorisation to start with fire fighting;
- h) positioning and type of fire fighting equipment/systems;
- i) precautions that the fire brigade shall take during a fire in the high voltage yard;
- j) the nearest water supply that can be used for fire fighting (if any);
- k) the quantity of oil in the transformers; and
- l) any other aspect that the fire brigade should be aware of that will facilitate fire fighting or reduce the possibility of injury to fire fighters and spreading of fire.

**4.5.5.4** A copy of the pre-fire plan shall be kept by the fire brigade as well as at the unit. The emergency telephone list shall be updated frequently.

**4.5.5.5** The relevant Eskom Control Centres shall keep an updated emergency telephone list.

#### **4.6 Grass Fires**

**4.6.1** The National Veld & Forest Fire Act (101 of 1998) has placed some additional responsibilities on Line Management, as custodians of property/land. Personnel shall become familiar with the provisions of this legislation. The following issues are specifically tabled:

- The objectives and requirements, as defined in the National Veld & Forest Fire Act shall be actively pursued and supported, specifically those relating to participating in the formation and operation of Fire Protection Associations, Chapter 2;
- The responsibilities (including any actions necessary) spelt out in Chapter 4 - Veldfire Prevention through firebreaks shall also be addressed. This could entail co-operation from farmers or landowners in the area even if there is no formal Fire Protection Association in place;

- The consequences of grass fires are a huge problem for most Regions. Over the last few years, Public Liability Claims against Eskom directly associated with grass fires have run into millions of rands.

Although grass fires are a difficult problem to control because of the vastness of the electricity networks, it is imperative to the Distribution Business that:

1. Servitude requirements are maintained as per standard DST 34-1454: Clearing and Maintenance of Servitude Routes;
2. Electricity network equipment are well maintained;
3. The electricity network is monitored to identify problem areas in terms of faults and losses to equipment within the system;
4. That data collected from the electricity network is evaluated (preferably at BU level to get the “big-picture”). The objective here is to identify trends, which will facilitate investigations into possible causes of faults and losses and the remedial action to be adopted;
5. Where a local Fire Protection Association has been established, the Employer must inform the Association of the identified fire risks and the status of the action plans;

Note: It is better practice that Regions appoint/assign members to the various Fire Protection Associations within the Region.

6. The correct procedure is adopted where there is a potential public liability claim against Eskom. (Refer to DPC 34-421);
7. In the event of a fire, compliance with EPC 32-95: Effective Management of Safety, Health and Environmental related Incidents is met.

## **4.7 Public Liability Claims**

**4.7.1** Where allegations have been made that Eskom’s electricity network has been responsible for starting a grass fire which has resulted in damage to private property, the following procedure shall be followed:

**4.7.1.1** Prior to the outcome of a full investigation, liability shall not be admitted nor shall offers to pay for damages to private property be made;

**4.7.1.2** The relevant line manager shall:

- a) Immediately inform the Regional Risk Manager and the Insurance Practitioner in order that the Insurance Manager at Megawatt Park may appoint an Assessor.
- b) determine the extent of fire damage (approximate number of hectares and what was damaged);
- c) outline the damaged area on a map;
- d) obtain an appropriate cost estimate;
- e) report the incident on the SAP Insurance System via the BU’s Insurance controller, within 24 h;
- f) give assistance to Eskom’s appointed Assessor;
- g) obtain copies of recorded faults on Eskom’s electricity network in the fire area.

**4.7.1.3** In addition to the above, the Assessor shall endeavour to determine:

- a) where the fire started;
- b) the time the fire started;
- c) particulars of witnesses;

- 
- d) the wind direction and speed on the day of the fire;
  - e) the location of Eskom's equipment which allegedly started the fire;
  - f) whether the burn pattern fits in with where the fire allegedly started and the wind direction;
  - g) the time and location of the first recorded fault on the electricity network in the area;
  - h) whether the time of fault occurred after or at the time when the fire started;
  - i) if there is any evidence of a flashover on power lines in the vicinity where the fire started.

## **4.8 Bulk Pole Storage Yards**

### **4.8.1 General Requirements**

**4.8.1.1** The storage site shall be level, solid ground and preferably paved, concrete or surfaced with crushed stone.

**4.8.1.2** The yard shall be kept clear of weeds and grass.

**4.8.1.3** The perimeter of the premises shall be adequately walled or fenced.

**4.8.1.4** Where no walls exist, a 15 m fire break shall be provided around the yard. This is the acceptable fire break where there is no pre-cast wall and having due regard to the weather, climate, terrain and vegetation of the area.

**4.8.1.5** Braziers, the burning of rubbish and open fires for cooking shall be strictly forbidden.

**4.8.1.6** Good housekeeping shall be maintained at all times.

**4.8.1.7** "Smoking Prohibited" signs shall be posted in the yard except in specific locations designated as safe for smoking and signs permitting smoking shall be posted in those areas only.

**4.8.1.8** Portable fire extinguishes shall be provided at convenient, conspicuous and accessible locations.

**4.8.1.9** Where there is sufficient water supply, fire hydrants shall be strategically located in the yard with a supply of sufficient fire fighting nozzles and fire hose to reach all pole storage areas.

**4.8.1.10** Where it is impractical to provide fire hydrants, at least 4 X 50 kg (minimum capacity) chemical powder wheeled fire extinguisher units shall be provided. It should however be noted that fire extinguishers are no substitute for fire hydrants.

**4.8.1.11** Fire fighting equipment shall be kept in weatherproof housings.

**4.8.1.12** Where practicable, arrangements shall be made for 24 h fire brigade cover.

### **4.8.2 Storage of pole stacks in a bulk pole storage yard**

**4.8.2.1** The objective shall be to have a good spatial separation distance between groups of pole stacks totalling in the region of 2 700 m<sup>3</sup> so that a fire involving a particular group of pole stacks will not spread to adjacent groups.

**4.8.2.2** The height of pole stacks shall preferably be limited to 3 m with an area of approximately 300 m<sup>2</sup>.

**4.8.2.3** Fire hydrants shall be strategically located in the yard with a supply of sufficient nozzles and fire hose to reach all pole storage areas.

**4.8.2.4** There shall be clear 6 m spaces around pole stacks. This is mainly to facilitate fire fighting.

**4.8.2.5** Where it is impractical to provide fire hydrants, at least 4 X 50 kg (minimum capacity) chemical powder wheeled fire extinguisher units shall be provided. It should however be remembered that fire extinguishers are no substitute for fire hydrants.

**4.8.2.6** A spatial distance of at least 30 m shall be maintained between groups of pole stacks with a combined total volume of approximately 2 700 m<sup>3</sup>, to prevent spreading to adjacent groups.

**4.8.2.7** A spatial distance of at least 30 m shall be maintained between pole stacks and important buildings.

**4.8.2.8** Pole storage yards shall not be located under power lines.

## **4.9 General Storage Yards**

**4.9.1** Where practicable, combustible items such as cross-arms, wooden poles and cable reels shall not be stored under power lines.

**4.9.2** Where practicable, combustible items shall be stored separately from non-combustible items.

**4.9.3** Storage yards shall be kept clear of grass and weeds and there shall be a firebreak of at least 5 m around the perimeter of the yard.

**4.9.4** Where treated poles are stacked in a yard, there shall be a fire break of 15 m between the poles and grass/weeds.

**4.9.5** Fire fighting equipment relative to the risk shall be provided. Where applicable, advice shall be obtained from the local fire brigade.

**4.9.6** Good housekeeping shall be maintained at all times.

**4.9.7** Depending on the type of materials being stored, it may be necessary to have "Smoking Prohibited" signs in specific areas.

**4.9.8** The perimeter of the premises shall be walled or fenced.

## **4.10 Storage of Flammable Liquids**

### **4.10.1 Temporary Storage**

The quantity of flammable liquids, i.e. liquids with a flashpoint of 55 °C and below that can be kept on a site without a flammable liquid store shall not exceed:

- a) a supply for one day;
- b) 40 l of any liquid with a flashpoint up to but not including 23 °C, for example, petrol, methylated spirits, benzene;
- c) 220 l of any liquid with a flash point between 23 °C and 55 °C (inclusive), for example, jet fuel, turpentine, and thinners.

Approved metal jerry cans, steel drums or safety cans shall be used for the transportation of flammable liquids.



#### **4.10.2 Outdoor Flammable Liquid Stores**

**4.10.2.1** An outdoor flammable liquids store shall be:

- a) located in the open at ground level;
- b) at least 15 m from important buildings, equipment, drains and combustibles;
- c) security fenced (2,5 m high weldmesh or diamond mesh) and shall have a matching gate;
- d) shaded from the sun;
- e) surrounded by a bund wall sufficient to contain the maximum total content of the largest container stored plus 10%;
- f) constructed so that the floor is level, liquid-tight and non-combustible;
- g) kept clear of weeds, paper, waste and other combustible material for a distance of 8 m from the store;
- h) protected against unauthorised entry and accidental damage by vehicles;
- i) used only for the storage of flammable and combustible liquids;
- j) provided with appropriate signs i.e. "Smoking Prohibited", "Fire and Open Flames Prohibited", "No Entry to Unauthorised Persons";
- k) provided with at least 1 X 9 kg chemical powder fire extinguisher mounted in a weatherproof housing outside the store;
- l) preferably not provided with electrical apparatus but if such apparatus is necessary, it shall comply with SANS 10108: The Classification of Hazardous Locations and the Selection of Apparatus for Use in such Locations.

#### **4.10.3 Fire Resistant Flammable Liquid Stores**

Stores less than 15 m from important buildings/equipment or constructed as part of a building used for other purposes, shall comply with the following:

##### **4.10.3.1 Location**

They shall be located at ground level.

##### **4.10.3.2 Fire resistance of walls, floor and ceiling**

- a) Walls, floor and the ceiling shall have a minimum fire resistance rating of 2 hours i.e. they shall be 110 mm thick, unplastered brick or 150 mm Class 2 aggregate concrete.
- b) Cable entries or any other penetrations through walls, floors and ceilings shall be sealed with a 2 hour fire resistance rated material.



#### **4.10.3.3 Doors**

Doors shall have a fire resistance rating of 2 hours (Class B fire door) that shall open outwards. If the floor area of a store exceeds 20 m<sup>2</sup> there shall be two doors. Doors shall be kept locked when a store is not in use. If a second door is provided there, it shall be fitted with an approved lock so that it can be opened from inside.

#### **4.10.3.4 Windows**

Windows shall be installed in external walls only. The glass shall be fire resistant shatterproof.

#### **4.10.3.5 Floor**

The floor shall be liquid-tight and preferably concrete with a step below the door threshold or a raised door sill or ramp (a minimum of 10 cm high) to contain the total content of liquid stored plus 10%.

#### **4.10.3.6 Natural cross flow ventilation**

- a) The store shall have two external walls opposite each other. Airbricks shall be fitted in the external walls at ceiling level and between 100 mm and 300 mm above floor level. The airbricks shall be terra cotta with a non-corrodible wire mesh with holes not exceeding 600 µm;
- b) Air bricks are usually spaced 450 mm apart but they shall provide a total opening of 0,15 m<sup>2</sup> per 5 m<sup>2</sup> of floor area.

#### **4.10.3.7 Mechanical ventilation**

- a) Where natural cross flow ventilation cannot be provided, an exhaust fan capable of 30 air changes per hour shall be installed. The fan shall be non-ferrous and non-sparking and shall exhaust outside the building. If the fan exhausts into other work areas, an external duct that terminates at least 1 m above roof height shall be provided. The duct shall be enclosed using 110 mm bricks or material with a 2 h fire resistance rating. The duct shall not have any sharp bends;
- b) The wall opposite the fan shall have a row of terra cotta air bricks with a wire mesh with holes not exceeding 600 µm, at threshold height and spaced 225 mm apart.

#### **4.10.3.8 Electrical fittings**

All electrical fittings shall comply with SANS 10108: The Classification of Hazardous Locations and the Selection of Apparatus for Use in such Locations.

#### **4.10.3.9 Signs to be provided**

The following signs shall be provided:

- a) "Smoking Prohibited";
- b) "Fire and Open Flames Prohibited";
- c) "No Entry to Unauthorised Persons"; and
- d) A sign that indicates the quantity of liquid(s) in the store.

#### **4.10.3.10 Fire protection**

There shall be at least 1 x 9 kg chemical powder fire extinguisher in a weatherproof housing mounted on an outside wall.

## **4.11 Storage of Oil**

### **4.11.1 Classification**

- a) Oil is classified as a combustible liquid, which means that it has a flashpoint above 55 °C;
- b) Unlike flammable liquids, combustible liquids, for example, transformer oil, lubricating oil and hydraulic fluids must be heated to give off sufficient vapour to ignite. Combustible liquids are less hazardous than flammable liquids.

### **4.11.2 Storage of oil-filled drums (more than 16 × 220 l drums)**

#### **4.11.2.1 An outdoor oil storage area shall be located in the open and at ground level:**

- a) At least 20 m from buildings/equipment. Where the 20 m distance cannot be achieved, a fire wall at least 1 m higher than the oil drums shall be provided between the drums and buildings/equipment. The firewall shall be located or provision shall be made so that spilled oil, irrespective of the quantity, cannot spread to buildings, equipment or other storage yards;
- b) The storage area shall be kept clear of weeds, paper, waste and other combustible material for a distance of 8 m from the storage area;
- c) At least 2 × 9 kg chemical powder fire extinguisher mounted in a weatherproof housing near the storage area, shall be provided;
- d) The area shall only be used for the storage of oil or other combustible liquids;
- e) The area shall be located where there is the minimum chance of accidental damage from vehicles.

#### **4.11.2.2 Indoor storage of oil**

Oil may be stored in a building provided that:

- a) The building is constructed of non-combustible material;
- b) It is a stand-alone building used solely for the storage of oil or other combustible liquids;
- c) When the building used for storing oil is less than 20 m from an important building or equipment, the wall of the oil store facing the building or equipment shall be a solid brick or concrete wall with no openings;
- d) Provision shall be made to contain oil spillage to within the building of origin;
- e) At least 1 × 9 kg chemical powder fire extinguisher shall be mounted in a weatherproof housing mounted outside the building;
- f) Flammable liquids such as petrol shall not be kept in the building.

### **4.11.3 Oil stored in buildings used for other purposes**

#### **4.11.3.1 Temporary storage**

Not more than 220 l of oil or any other combustible liquid shall be kept in a building or workplace used for other purposes unless the area in which the liquid is kept complies with the requirements for an oil store.

**4.11.3.2 Requirements for an oil store**

- a) The store shall be at ground level;
- b) Any wall between the store and the rest of a building which the store adjoins shall be a firewall with a minimum fire resistant rating of 2 h;
- c) A firewall shall be constructed to the underside of a non-combustible roof cover or a 2 h fire resistant rating ceiling;
- d) Any door opening in the above wall shall be fitted with a fire door with a fire resistant rating of 2 h. There shall be no other openings in the wall;
- e) The floor of the room shall be liquid-tight and non-combustible;
- f) A sill or ramp (minimum height of 10 cm) shall be provided at the door communicating with the rest of the building;
- g) Provision shall be made to contain spillage to the room in which the liquid is kept or stored;
- h) Combustible materials such as rags and sawdust shall not be kept in the store. A non-combustible oil absorbent material such as "Drizit," shall be used for oil spills and may be kept in the store;
- i) Flammable liquids such as petrol, paraffin or thinners shall not be stored in an oil store;
- j) A 1 × 9 kg chemical powder fire extinguisher shall be mounted on a wall outside the store;
- k) The following signs shall be provided:
  - "Smoking Prohibited";
  - "Fire and Open Flames Prohibited";
  - "No Entry to Unauthorised Persons";
  - "Oil Store";
  - The maximum quantity of liquid stored.

Heating oil to above its flash point may create a hazardous atmosphere. If there is any possibility of this happening during the storage of oil, ventilation shall comply with paragraphs **4.10.3.6** or **4.10.3.7** above and electrical fittings shall comply with SANS 10108.

**4.12 Storage of Industrial Gas Cylinders**

If the requirements for gas in compressed gas cylinders exceed an aggregate of 18 kg capacity, of all types of compressed gas cylinders, it is recommended that a proper gas store facility is provided. The requirements for a gas store are:

**4.12.1 Gas Store**

An Industrial gas store shall comply with the following:

It shall:

- a) be outdoors at ground level;

- 
- b) be well ventilated;
  - c) be closed with heavy gauge wire mesh a minimum of 2 m high;
  - d) have a concrete floor;
  - e) have a non-combustible roof (min 2,5 m above floor level);
  - f) if the store exceeds 10 m<sup>2</sup> , have an additional escape gate with a sliding bolt lock;
  - g) have gates that open outwards;
  - h) be at least 10 m from buildings or the boundary line;
  - i) be at least 6 m from drains, pits or manholes;
  - j) be kept clear of weeds, paper, waste and other combustible material for a distance of 8 m from the store;
  - k) have the following signs “Smoking Prohibited”, “Fire and Open Flames Prohibited”, “No Unauthorised Entry” and a Cylinder Colour Code Chart;
  - l) be located to reduce the possibility of damage by vehicles;
  - m) where necessary, have barriers so that vehicles cannot come closer than 5 m from the store;
  - n) have electrical fittings that comply with SANS 10108: The Classification of Hazardous Locations and Selection of Apparatus for Use in such Locations;
  - o) have at least 2 × 9 kg chemical powder fire extinguishers mounted in weatherproof housing, at the entrance to the store;
  - p) be kept locked when not in use;
- No other materials/combustibles shall be kept in the store.

#### **4.12.2 Storage of Cylinders**

##### **4.12.2.1 The storage of cylinders in the above store shall comply with the following:**

- a) cylinders of flammable gases shall only be stored with cylinders of non-flammable gases on condition that:
  - there is a 6 m (minimum) distance between cylinders of flammable gas and cylinders of non-flammable gas or,
  - a fire wall is erected between the two types of stored gases.
- b) LP gas cylinders shall not be stored within 3 m of other flammables such as petrol, acetylene etc;
- c) full cylinders must be kept apart from empty cylinders;
- d) empty cylinders to be marked with letters “MT”;
- e) cylinders to be stored upright (use special stands/racks);
- f) secure cylinders in upright position (chain or other means);
- g) where provision exists, fit protecting caps over valves;
- h) store cylinders in rows with aisles between for easy removal in event of fire.

**4.12.3 Responsible Person**

A responsible person shall be appointed to take charge of the store keys as well as the general management of the store.

**4.13 LP Gas Supplies for Park Homes/Construction Camps**

**4.13.1** LP gas supply installations shall comply with SANS 10087:2: The Handling, Storage and Distribution of Liquefied Petroleum Gas in Domestic, Commercial and Industrial Installations: Installations in Mobile Units and Small Non-permanent Buildings.

**4.13.2** An LP gas cylinder not exceeding 18 kg may be located inside a park-home however it is preferable that it be installed outside.

**4.14 Portable Fire Extinguishers****4.14.1 Classes of fire as specified in SANS 10105****4.14.1.1 Fires are divided into the following classes:**

- a) Class A: Ordinary combustibles e.g. wood, paper, plastics;
- b) Class AC: Ordinary combustibles burning in the presence of electricity;
- c) Class B: Flammable liquids and gases;
- d) Class BC: Flammable liquids and gases burning in the presence of electricity;
- e) Class ABC: Ordinary combustibles, flammable liquids and gases burning in the presence of electricity;
- f) Class D: Fires involving metals e.g. magnesium, aluminium.

**Table 1: Suitability of different types of fire extinguishers for different classes of fire**

TYPE OF PORTABLE FIRE EXTINGUISHER	SUITABILITY OF FIRE EXTINGUISHERS FOR DIFFERENT CLASSES OF FIRE					
	A	B	AC	BC	ABC	D
<b>Water</b>	MS	D	D	D	D	D
<b>Foam</b>						
- Protein and synthetic	LS	S	D	D	D	D
- Fluoroprotein	LS	MS	D	D	D	D
- AFFF	U	LS	D	D	D	D
<b>Chemical Powder</b>						
- Potassium bicarbonate	U	MS	S	S	S	U
- Potassium chloride	U	MS	S	S	S	U
- Sodium bicarbonate	U	MS	S	S	S	U
<b>Carbon Dioxide</b>	U	LS	MS	MS	MS	D

MS = most suitable      S = suitable      LS = limited suitability

U = unsuitable      D = dangerous

**4.14.1.2** As can be seen from **Table 1**, some fire extinguishers may be suitable for a specific class of fire and dangerous when used on other classes of fires. It is therefore important to install the correct fire extinguisher for the type of fire expected.

**4.14.1.3** Where a fire extinguisher is suitable for a specific class of fire, this is normally indicated on the fire extinguisher by means of the letters, A, B or C or a combination of two or more of these letters or only D. For example, a fire extinguisher with the letters ABC means that it is suitable for fires involving ordinary combustibles, and flammable liquids in the presence of electricity.

#### **4.14.2 Approved Fire Extinguishers**

##### **4.14.2.1 A portable fire extinguisher shall:**

- a) as specified in SANS 10400 (TT37.4), bear the mark of standardisation as contemplated in section 14 of the Standards Act, 1982 (Act 30 of 1982) or;
- b) be clearly marked by the SANS to indicate that it has been evaluated by and is acceptable to the SANS;
- c) be installed, maintained and serviced in accordance with SANS 10105 and SANS 1475.

##### **4.14.3 Number of portable fire extinguishers for a given floor area**

The quantity of portable fire extinguishers for a given floor area shall comply with section TT37 of SANS 10400: The Application of the National Building Regulations.

#### **4.14.4 Location of Portable Fire Extinguishers**

##### **4.14.4.1 Portable fire extinguishers shall:**

- a) be located in conspicuous positions, along normal paths of travel and near exits;
- b) be on purpose-made brackets or in purpose-made cabinets, with their carrying handles not higher than 1,5 m from the floor;
- c) have identification labels clearly visible from the direction of approach;
- d) be identified in their positions with symbolic safety signs that are in accordance with SANS 1186-1 and SANS 10105, and positioned in terms of DST 34-1168: Colour Coding, Symbolic Safety Signs and Demarcation.

Make use of the local fire brigade or other specialists with regard to the placing of portable fire extinguishers. (Refer to SANS 10105)

##### **4.14.4.2 Portable fire Extinguishers shall not be placed:**

- a) in dead end areas (i.e. where access could present a risk to the potential operator);
- b) behind doors;
- c) in cupboards (except purpose-made cabinets which are identified);
- d) in deep recesses or in positions where they may cause obstruction to exit routes; or
- e) over or close to heating appliances.

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## **4.15 Vehicle Fire Extinguishers**

Line managers shall ensure that any business scheme vehicle and/or x-scheme vehicle where the owner is an authorised operator be equipped with a fire extinguisher.

Note: Where hired vehicles are used as a replacement for a business scheme vehicle and/or x-scheme vehicle then the same conditions shall apply.

Where fire extinguishers are required for business scheme vehicles and/or x-scheme vehicles then the relevant cost centre shall bear the costs of purchase.

Distribution Fleet Management shall ensure that all fleet/pool vehicles and mobile equipment with the exception of hired vehicles (for short durations) are equipped with fire extinguishers which are checked regularly. The costs of purchasing such equipment shall be borne by Fleet Management.

The unit/line manager shall be responsible for inspecting fire extinguishers of dedicated pool vehicles and bearing the costs thereof.

Line Managers shall ensure that any business scheme vehicles and/or x-scheme vehicle be equipped with the requirements of paragraphs **4.15.1** to **4.15.5**.

Distribution Fleet Management shall ensure that all fleet/pool vehicles and mobile equipment with the exception of hired vehicles (for short durations) shall be equipped with:

**4.15.1** One 1,5 kg or 2 kg dry chemical powder extinguisher of the stored pressure type for light vehicles.

**4.15.2** One 4,5 kg dry chemical powder extinguisher of the stored pressure type for all heavy vehicles, i.e. Rigid category.

**4.15.3** Two 4,5 kg dry chemical extinguishers of the stored pressure type for all articulated vehicles.

**4.15.4** The fire extinguisher must be securely fitted and easily accessible.

**4.15.5** The unit/line manager shall be responsible for servicing these extinguishers and costs thereof.

## **4.16 Purchasing Requirements**

Only SANS approved fire extinguishers shall be purchased. No extinguishers of the Halon or BCF type shall be purchased (Refer EPC 32-245).

Where fire extinguishers are required for scheme vehicles then the relevant cost centre shall bear the costs of purchase.

## **4.17 Fire Alarm**

**4.17.1** An audible, independent fire alarm system shall be available at each unit. If this alarm system is electrically operated, a manual back-up alarm shall be available.

**4.17.2** These alarms shall be tested at least every three months and employees shall be made familiar with the sound of the alarm.

**4.17.3** The location of the alarm shall be identified by means of a symbolic sign.

## **4.18 Smoking**

Eskom's Smoking Procedure shall prevail, especially in storage areas. (Refer to EPC 32-36: Smoking Procedure)

## **4.19 Oxy-acetylene Trolleys**

**4.19.1** All oxy-acetylene trolleys shall be fitted with a 1,5 kg dry chemical powder fire extinguisher.

**4.19.2** Where porto-packs are used and it is impracticable to mount an extinguisher, then the appropriate extinguisher shall be available at the worksite during operations.

## **4.20 Fire Incidents**

All fire incidents shall be reported, recorded and investigated in terms of EPC 32-95.



**Annex A - Example of a Monthly Inspection Checklist: Portable Fire Extinguishers**  
(informative)**Water/Dry Chemical Powder/Carbon Dioxide/Foam/Gas types**

Items to be checked monthly		Remarks	Date Defect Repaired
<ol style="list-style-type: none"><li>1. Check to ensure the equipment's locality is still applicable to risk.</li><li>2. Check appropriate demarcation for legibility and conformance.</li><li>3. Check the equipment is easily accessible and manufacturers operating label is legible and facing forward.</li><li>4. Check the shell for metal corrosion and damage.</li><li>5. Check the finish/paint work for peeling or chips.</li><li>6. Check the equipment is identified and the numbering corresponds with the register and the location.</li><li>7. Check the hose (if applicable) for perishing, blocked nozzle, free movement of discharge nozzle.</li><li>8. Check for blockage of the breather (if appropriate).</li><li>9. Check for sufficient pressure (stored pressure types fitted with pressure gauges).</li><li>10. Check the plunger/operating lever/handle seal is still intact.</li><li>11. Check the seal on extinguisher cap is intact (if applicable).</li><li>12. Check for stability of mounting brackets/hooks.</li><li>13. Check the correct Symbolic Safety Signs are displayed.</li><li>14. Check the equipment is clean.</li><li>15. Invert all cartridge type DCP extinguishers and give them a good shake before remounting (not necessary with stored pressure type).</li><li>16. Where subject to direct sunlight, is the cover on the equipment?</li></ol>			

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Annex B - Example of a Monthly Inspection Checklist: Hose Reels**  
(informative)

Items to be checked monthly		Remarks	Date Defect Repaired
1) Check for water leaks at reel and the unit rotates on its spindle. 2) Check the hose for signs of perishing. 3) Check the nozzle for corrosion. 4) Check the nozzle opens and shuts freely (leave in shut position). 5) Check if the hose feeds through stirrup. 6) Crack the valve to ensure water pressure is available. <b>(Do not fill hose)</b> 7) Check appropriate demarcation for legibility and conformance. 8) Check if the correct Symbolic Safety Signs are displayed. 9) Check the equipment is clean and has legible inspection label. 10) Check the equipment is identified and numbering corresponds with register. 11) Un-roll the hose 6 monthly, check for correct length of hose (25 to 30 m) and check if it does no leak and drain. 12) Where the reel is subjected to direct sunlight, Is the cover on the equipment. 13) Check the equipment is freely accessible and is securely mounted. 14) Check the control valve is sealed (lead seal & wire or similar).			

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Annex C - Example of a Monthly Inspection Checklist: Hydrants and Hoses**  
(informative)

(NB: Where applicable and appropriate)

(Typically 66 mm/45 mm/38 mm diameter fire hose, 25 to 30 metre in length)

Items to be checked monthly		Remarks	Date Defect Repaired
<ul style="list-style-type: none"><li>1) Check the rubber seal is in place at the hydrant outlet.</li><li>2) Check that no foreign objects are placed in outlet.</li><li>3) Check free movement of the coupling locks (hose and hydrant fittings).</li><li>4) Check the hose is rolled/folded correctly (male coupling outermost).</li><li>5) Check the nozzle for corrosion.</li><li>6) Crack the valve to ensure water pressure is available.</li><li>7) Check the correct Symbolic Safety Signs are displayed.</li><li>8) Check the equipment is clean.</li><li>9) Check the equipment is identified and the numbering corresponds with register.</li><li>10) Roll-out hoses every 12 months and pressure test, check for no leaks in hoses.</li><li>11) Check for leaks at the hydrant and hose couplings, drain water from hoses.</li><li>12) Check the nozzle opens and shuts freely (leave in shut position).</li><li>13) Check the equipment is freely accessible.</li><li>14) Check connections and pressure gauges of the booster hydrant.</li><li>15) Check that the booster hydrant is not obstructed and free of vandalism.</li></ul> <p>Any signs of low pressure or water flows raise a defect for testing and/or maintenance.</p>			

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Annex D - Example of a Monthly Inspection Checklist: Hydrants**  
(informative)

Items to be checked monthly		Remarks	Date Defect Repaired
<ul style="list-style-type: none"><li>1) Check that the hydrants is clearly marked and visible.</li><li>2) Check that the pit cover is in place and not damaged.</li><li>3) Inspect that the pit frame is not damaged and full of soil.</li><li>4) Check that the falls spindle is in place and operational.</li><li>5) Check if the sand pipe connects and the valve opens.</li><li>6) Check that the outlet and the pit cover is replaced.</li><li>7) Check if there are no signs of vandalism on the hydrant.</li></ul>			

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Annex E - Example of a Monthly Inspection Checklist: Hydrants**  
(informative)**Arrange with occupants that a functional test of the alarm is done**

<b>Items to be checked monthly</b>		<b>Remarks</b>	<b>Date Defect Repaired</b>
1) Check the operation of the alarm (where electrical alarm is available, a back-up manual alarm is required). 2) Check if the correct Symbolic Safety Signs are displayed. 3) Check if the alarm control is easily accessible. 4) Obtain feedback on remote sounders or whether/how the alarm was heard. 5) Advise occupants of end of tests. 6) Report findings/observations.			

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

## Annex F - Example of a Monthly Inspection Checklist: Breathing Apparatus (BA)

(normative)

(Where applicable and made available)

**Check Supplier/Manufacture instructions regarding specific detail of tests and requirements for different types of BA - The following is to be considered as a generic guide only.**

Items to be checked monthly	Remarks	Date Defect Repaired
<ol style="list-style-type: none"> <li>1) Check all harness straps and fittings, and belts are fully extended.</li> <li>2) Check if the mask is connected and coupled correctly.</li> <li>3) Check cylinder to valve group connection is hand tight.</li> <li>4) Check pressure gauge is not damaged and fitted correctly.</li> <li>5) Complete a <b>low and high-pressure test</b> on the assembled breathing apparatus. <ul style="list-style-type: none"> <li>▪ Open main valve, check whistle sounds momentarily.</li> <li>▪ Check and note contents of cylinder - refill as necessary.</li> <li>▪ Listen for any leaks.</li> <li>▪ Operate the mask by sealing against face and taking a couple of breaths.</li> <li>▪ Test operation of positive pressure feature at the mask (if appropriate).</li> <li>▪ Close main valve, check there are no leaks - set should maintain indicated pressure.</li> <li>▪ Release pressure slowly by operation of the by-pass valve.</li> <li>▪ Check whistle operates at correct pressure on the pressure gauge.</li> <li>▪ Check face mask for cleanliness and de-sanitise, if necessary. Preferred method to seal mask in a plastic bag, with suitable date label.</li> </ul> </li> <li>6) Check for correct location Symbolic Safety Signs.</li> <li>7) Place the breathing apparatus back in storage box or mounting bracket as appropriate, check for security and any sealing arrangements of storage.</li> <li>8) Complete documentation/register.</li> </ol> <p>Breathing Apparatus cylinders are considered as pressure vessels and require internal inspection and pressure testing at prescribed frequency (SANS10019).</p>		

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Annex G - Sprinkler Systems**

(normative)

These systems should be subject to a routine **maintenance** programme undertaken by an approved contractor/installer as tabled in SANS 10287.

**Check Supplier/Manufacture instructions regarding specific detail of tests and requirements for different types of system that may be under your responsibility.**

**The following is to be considered as a generic guide only.** Monthly inspection routines are limited to the following -

Items to be checked monthly		Remarks	Date Defect Repaired
1) Check the labels/signs/notices are correct and conform. 2) For the installation control valves, these could include any or all of the following depending on the system (details in the above mentioned SANS) <ul style="list-style-type: none"> <li>▪ SPRINKLER CONTROL VALVE - letters at least 35 mm in height</li> <li>▪ INSIDE - letters at least 25 mm in height</li> <li>▪ KEEP LOCKED/SHUT - letters at least 5 mm in height</li> </ul> 3) For the control valves <ul style="list-style-type: none"> <li>▪ CONTROL VALVE - letters at least 20 mm for main &amp; subsidiary valves</li> <li>▪ SPRINKLER TERMINAL TEST VALVE - letters at least 5 mm in height</li> </ul> 4) For pump connections <ul style="list-style-type: none"> <li>▪ SPRINKLER BOOSTER CONNECTION - letters at least 20 mm</li> <li>▪ PRESSURE LIMIT XXXX kPa - letters at least 10 mm</li> </ul> 5) Notify the occupants and local authority fire brigade or alarm monitoring service provider of imminent alarm test. 6) Check the system pressure gauge(s) and note the pressures. 7) Open alarm test valve, check that local alarm rings and water runs clear from the pelton wheel drain. 8) Close alarm test valve and check that any other alarms (if fitted as part of the system) operated. 9) Confirm with occupants and other agencies of completion of test cycle. 10) Check and confirm any spares/tools kept close to valve group are available and serviceable. 11) Complete register/inspection logbook. Report any deficiencies.			

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Annex H - Example of a Monthly Inspection Checklist**

(normative)

**Emergency Exits/Routes** - SANS 10400 and Environmental Regulations for Workplaces (see section 9)  
 These requirements are generally catered for in the design and construction of the premises, the following items are of a generic nature and need to be regularly checked.

Items to be checked monthly		Remarks	Date Defect Repaired
1) The applicable Symbolic Safety Signs are in place and visible.  2) Emergency routes and exits must be clear and free from materials that could impede their function and operation.  3) Any door should open in direction of travel, fittings, closure devices and locks are suitable for use in an emergency exit/route.  4) Ensure the arrangements for rapid movement of personnel to exit the premises, are in place.			

**Emergency Lighting** - SANS 10400 and Environmental Regulations for Workplaces (see sections 4 & 5)  
 These requirements are generally catered for in the design and construction of the premises, the following items are of a generic nature and need to be regularly checked.

Items to be checked monthly		Remarks	Date Defect Repaired
1) Lighting is provided in that fittings and luminaries are in place and functional.  2) Fittings and luminaries are clean.  3) Functional testing is carried out at intervals of not more than three monthly.  4) Detailed monitoring and evaluation is conducted to ensure the correct level of lighting (lux)  Findings and deficiencies reported to Line Management.			

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_



**Annex I - Example of a Gas Fire Extinguisher Inspection Checklist**  
(informative)

Items to be checked		Remarks	Date Defect Repaired
1) Is the Gas cylinder room locked and safe?			
2) Is the Gas cylinder room clean and tidy?			
3) Is the Gas cylinder room labelled?			
4) Is the Gas control set manual when people working?			
5) Are the Gas Cylinders chained and secured?			
6) Are the cylinders full?			
7) Are all the cylinders connected to the manifold?			
8) Is the Gas release solenoid connected?			
9) Is the alarm operative (1 <sup>st</sup> and 2 <sup>nd</sup> )?			
10) Are warning signs in place?			
11) Are operating instructions posted?			
12) Is odouriser installed?			
13) Are all the doors closer and dampers in operating position?			
14) Is the time delay checked?			
15) Are nozzles clear and unobstructed?			
16) Is there breathing apparatus?			
16) Are emergency exits properly marked and indicated?			

Inspected by: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

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**Annex J - Attendance Register for All Practical Exercises**  
(informative)**Indicate the type of exercise applicable**

1. Dry runs.
2. Paper exercise.
3. Discussions of other Eskom Units fire incidents. (Case studies)
4. Fire prevention videos.
5. Demonstrations of domestic hose reels.
6. Demonstrations with portable extinguishers.

**List the names of all participants and get them to sign the attendance register**

NAMES	SIGNATURES
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10	

Date of exercise: \_\_\_\_\_

Record the time spent on each exercise: \_\_\_\_\_

Name of the Presenter or Instructor: \_\_\_\_\_

## Annex K - Model Fire Warden/Coordinator Appointment Form

(normative)



### FIRE WARDEN/CO-ORDINATOR APPOINTMENT

#### **AUTHORISED SECTION 16(2) ASSIGNEE**

I have been assigned by an authorised 16(2) with the duty of ensuring compliance with the Occupational Health and Safety Act within my area of responsibility.

I hereby assign you to assist me in the performance of my duties.

#### **ASSIGNMENT**

I, (Authorised 16(2)) \_\_\_\_\_ do hereby designate \_\_\_\_\_  
to assist me in the performance of my duties in the following area(s): \_\_\_\_\_  
\_\_\_\_\_.

#### **DESIGNATED RESPONSIBILITIES AND AUTHORITY**

- You shall ensure that the requirements of ERW 9 are complied with.
- You shall ensure that all the fire fighting equipment is in a good working condition.
- You shall inspect all your fire fighting equipment once a month and record your findings on a checklist.
- \*You shall ensure that your team members are trained in all the potential health and safety hazards associated with fires.
- \*You shall ensure that all your team members are trained in the safe use of all fire fighting protective equipment as well as breathing apparatuses.
- You shall inspect all your fire protective equipment on a monthly basis and record the findings in the appropriate register.
- You shall ensure that all detection and protection systems are inspected and maintained by an approved authority.
- You shall ensure that a copy of the annual service record of the fire equipment at the relevant unit is filed in relevant section of the Risk Management Filing System.

Note: \* - These are only applicable where fire teams exist.

\_\_\_\_\_  
**Authorised (16)2 Signature**

\_\_\_\_\_  
**Date**

#### **ACCEPTANCE OF DESIGNATION**

I, \_\_\_\_\_ do hereby accept the above assigned duties and acknowledge that I understand the requirements of this designation.

The appointment is with effect from \_\_\_\_\_ until it is withdrawn in writing.

\_\_\_\_\_  
**Fire Warden/Co-ordinator Signature**

\_\_\_\_\_  
**Date**

**Annex L - Model Fire Extinguishing Equipment Check Record**  
(informative)

Responsible Person: ..... Unit: ..... Year:..... Print.....

Type	No.	Location	Jan	Feb.	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Certification that fire equipment has been inspected.  ..... Signature:														

**Annex M - Impact Assessment**

(Normative)

**Impact assessment form to be completed for all documents.**

**1 Guidelines**

- All comments must be completed.
- Motivate why items are N/A (not applicable)
- Indicate actions to be taken, persons or organisations responsible for actions and deadline for action.
- Change control committees to discuss the impact assessment, and if necessary give feedback to the compiler of any omissions or errors.

**2 Critical points**

**2.1 Importance of this document. E.g. is implementation required due to safety deficiencies, statutory requirements, technology changes, document revisions, improved service quality, improved service performance, optimised costs.**

Comment: Implementation required due to statutory requirements.

**2.2 If the document to be released impacts on statutory or legal compliance - this need to be very clearly stated and so highlighted.**

Comment: Enforces statutory compliance.

**2.3 Impact on stock holding and depletion of existing stock prior to switch over.**

Comment: none

**2.4 When will new stock be available?**

Comment: n/a

**2.5 Has the interchangeability of the product or item been verified - i.e. when it fails is a straight swop possible with a competitor's product?**

Comment: n/a

**2.6 Identify and provide details of other critical (items required for the successful implementation of this document) points to be considered in the implementation of this document.**

Comment: none

**2.7 Provide details of any comments made by the Regions regarding the implementation of this document.**

Comment: (N/A during commenting phase)

## **Annex M**

(continued)

### **3 Implementation timeframe**

#### **3.1 Time period for implementation of requirements.**

Comment: On publication of document.

#### **3.2 Deadline for changeover to new item and personnel to be informed of DX wide change-over.**

Comment: n/a

### **4 Buyers Guide and Power Office**

#### **4.1 Does the Buyers Guide or Buyers List need updating?**

Comment: n/a

#### **4.2 What Buyer's Guides or items have been created?**

Comment: n/a

#### **4.3 List all assembly drawing changes that have been revised in conjunction with this document.**

Comment: n/a

#### **4.4 If the implementation of this document requires assessment by CAP, provide details under 5 – No**

#### **4.5 Which Power Office packages have been created, modified or removed?**

Comment: n/a

### **5 CAP / LAP Pre-Qualification Process related impacts**

#### **5.1 Is an ad-hoc re-evaluation of all currently accepted suppliers required as a result of implementation of this document?**

Comment: no

#### **5.2 If NO, provide motivation for issuing this specification before Acceptance Cycle Expiry date.**

Comment: n/a – not a specification affecting suppliers.

#### **5.3 Are ALL suppliers (currently accepted per LAP), aware of the nature of changes contained in this document?**

Comment: n/a

**Annex M**  
(continued)

**5.4 Is implementation of the provisions of this document required during the current supplier qualification period?**

Comment: n/a

**5.5 If Yes to 5.4, what date has been set for all currently accepted suppliers to comply fully?**

Comment: n/a

**5.6 If Yes to 5.4, have all currently accepted suppliers been sent a prior formal notification informing them of Eskom's expectations, including the implementation date deadline?**

Comment: n/a

**5.7 Can the changes made, potentially impact upon the purchase price of the material/equipment?**

Comment: no

**5.8 Material group(s) affected by specification: (Refer to Pre-Qualification invitation schedule for list of material groups)**

Comment: n/a

**6 Training or communication**

**6.1 Is training required? Yes**

Comment: (If NO then 6.2 – 6.6 will be N/A)

**6.2 State the level of training required to implement this document. (E.g. awareness training, practical / on job, module, etc.)**

Comment: Awareness training

**6.3 State designations of personnel that will require training.**

Comment: Supervisors and Line Managers

**6.4 Is the training material available? Identify person responsible for the development of training material.**

Comment: The document itself.

**6.5 If applicable, provide details of training that will take place. (E.G. sponsor, costs, trainer, schedule of training, course material availability, training in erection / use of new equipment, maintenance training, etc).**

Comment: none

**Annex M**  
(continued)

**6.6 Was Technical Training Section consulted w.r.t module development process?**

Comment: no

**6.7 State communications channels to be used to inform target audience.**

Comment: statutory safety meetings and change control.

**7 Special tools, equipment, software**

**7.1 What special tools, equipment, software, etc will need to be purchased by the Region to effectively implement?**

Comment: none

**7.2 Are there stock numbers available for the new equipment?**

Comment: n/a

**7.3 What will be the costs of these special tools, equipment, software? n/a**

**8 Finances**

**8.1 What total costs would the Regions be required to incur in implementing this document? Identify all cost activities associated with implementation, e.g. labour, training, tooling, stock, obsolescence - none**

Comment: Document once published to be forwarded to RAS Workgroup for updating of RAS Templates, where applicable

Impact assessment completed by:

Name: Sivi Govender and Risk Management Workgroup

Designation: Dx Group Risk Specialist