



**GAUTENG REGION**  
**National Post Centre (Head Office)**

**MAINTENANCE & REPAIR OF FIRE SPRINKLERS AND FIRE  
DETECTION SYSTEMS**

**SPECIFICATION**

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## **CONDITIONS OF TECHNICAL SERVICE**

### **1.1 Objective Requirements**

Objective of this Bid is to appoint a Service Provider for a period of 1 year (12 Months) that will do Maintenance, repairs and replacement of components that are not repairable on the fire sprinkler and fire detection systems to ensure operation efficiency and safety which must be compliant to all relevant codes as per the specification (BOQ).

### **1.2 Compulsory Site Inspections**

Compulsory site inspections will be conducted at South African Post Office Head Office, NPC

### **1.3 Legislative Requirements**

1.3.1 The service provider will be responsible for the provision of maintenance of fire sprinkler & Detection system and equipment in accordance with these specifications, applicable legislation and regulations and industry standards.

1.3.2 The workmanship under this contract must be in compliance with applicable S.A.B.S. standards, the Occupational Health and Safety Act. 85 of 1993 and Fire Department and Local Authority By-Law's.

1.3.3 The bidder must be registered for specialist "fire prevention works" with the Construction Industry Development Board (CIDB). The minimum grading and classification is Grade 1 SF.

1.3.4 It is further preferred that the bidder is registered with the Fire Fighting Equipment Traders Association (FFETA). Valid proof of registration should be attached to the bid response.

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1.3.5 The bidder's procedures for the procurement, storage, handling, transporting, application and general use of chemicals, equipment and tools must comply with applicable fire protection equipment maintenance legislation, regulations, and minimum industry standards, the latter set out in the next section.

#### **1.4 Industry Standards**

1.4.1 Inspections and service requirements for extinguishers, hose reels and hydrants, as per these specifications, should take account of at least the below mentioned standards, as they apply to each equipment type:

SANS 1475 – Part 1 & 2

SANS 10105 – Part

SANS 543

SANS 1128 - 1

SANS 1151

SANS 1322

SANS 1567

SANS 1825

SANS 1910

SANS 10019

SANS10400 - T

SANS 10400 - W

OSH Act 85 of 1993 (Pressure Equipment Regulations 19 (1) & (2))

1.4.2 In instances where a bidder has to replace and install any fire gaseous extinguishing systems which follows nationally recognised codes and standards, the following applies:

SANS 369 – Operation of Fire Protection Measures

SANS 306 – Carbon Dioxide Fire Extinguishing Installations

SANS 14520 – Gaseous Fire Extinguishing Systems (Clean Agents).

#### **1.5 Performance**

1.5.1 The bidder must be available during working hours for the duration of the contract to respond to fire equipment breakdowns or defects and complaints about any malfunctioning thereof.

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1.5.2 The response time (from the time of the bidder's receipt of an official request, to his attendance on site) must be as follow:

Emergencies - immediate and up to a maximum of 3 hours.

Malfunctioning or leaking fire equipment (except for emergencies) - 24 hours.

1.5.3 Failure by the bidder to meet the above response times or equipment downtimes may result in contractual penalties.

1.5.4 The bidder must submit a detailed report of each specific break down to the duly appointed SAPO representative.

1.5.5 Fire protection equipment maintenance activities must be recorded by the bidder. The bidder must promptly submit to SAPO the worksheets and/or job cards of maintenance activities at contracted areas attended to. Proof of sign-off of service by duly authorised SAPO officials must be maintained.

1.5.6 Quality control mechanisms which may include spot checks, inspections and a signed inspection report detailing the equipment positioning, condition and functionality and next service interval per item of equipment at each specific site must be provided.

1.5.7 The inspection report must include:

Building site name

Date and time of visit

Type of equipment

Condition of equipment

Condition of environment

Type of test

Clear description and details of fault/s noted

Remedial action taken/to be taken

Need for repair/replacement and minimum completion timeline.

Necessary notes / comments.

1.5.8 All defects identified in the maintained equipment must promptly be reported to the duly authorised SAPO official, in writing.

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## **1.6 Emergency Services**

1.6.1 The supplier must ensure that the duly appointed SAPO representative is at all times in possession of the supplier's telephone numbers and contact details to enable SAPO to contact the supplier in the event of emergencies, during normal hours, after hours, on weekends or on public holidays.

1.6.2 Emergency repairs to fire equipment and systems may be executed without an official SAPO order but with prior verbal approval from a delegated SAPO official. The supplier must however ensure that a SAPO official signs a job card and that the supplier obtains an official order from SAPO on the following working day.

## **1.7 Repairs and Replacements**

1.7.1 The supplier must in the event of repairs or replacement of fire protection equipment and components, other than defined maintenance, submit a detailed quotation for such additional work to the duly appointed SAPO representative and obtain approval thereof from SAPO, before attending to the additional repairs or replacements.

1.7.2 Emergency repairs discovered by the bidder must promptly be reported to the responsible SAPO official for a decision to address the matter.

## **1.8 Company Experience and Contactable References**

1.8.1 The bidder must have successfully executed at least one year maintenance of fire protection equipment project at other institutions. The bidder must provide full details regarding recently executed project(s) and contactable references per project. Bidders must respond to the requirements of experience and contactable references in the format provided in the bid document.

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1.8.2 The supplier's CIDB registration number for specialist fire prevention works MUST be submitted together with the bid documents

1.8.3 It is preferred that the supplier is registered with Fire Fighting Equipment Traders Association (FFETA).

## **1.9 Experience of Key Resources**

1.9.1 It is the responsibility of the bidder to ensure that supervisors allocated to SAPO have more than 5 months of experience in maintenance of fire protection equipment.

1.9.2 The supplier's key technical resource must have been approved and registered by SAQCC (Fire) South African Qualifications and Certification Committee.

1.9.3 All staff to be neatly and adequately attired in distinctive uniform supplied by the supplier.

## **1.10 Consumables and Equipment to be Used on Site**

1.10.1 The bidder must be responsible for the provision of all consumables needed to render an efficient service. SAPO reserves the right to approve or not approve these consumables and applicable pricing, prior to their use.

1.10.2 The bidder must submit the specifications and Material Safety Data sheets of all consumables and chemicals upon appointment and thereafter annually. The manufacturer's instructions regarding the use of all garden maintenance materials and chemicals must be strictly followed.

1.10.3 Upon appointment, the bidder must provide a list of SABS approved products, which they intend using, supported by specimen labels, indicating:

1.10.3.1 Trade name.

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1.10.3.2 Generic name.

1.10.3.3 Product registration number.

1.10.3.4 Chemicals/Ingredients (type and content) as shown on the label.

1.10.3.5 Application rates.

1.10.4 The supplier must utilise its own equipment, at its own cost, for the proper provision of the maintenance service at SAPO sites.

1.10.5 The supplier must comply with all applicable provision of legislation, regulations, and minimum industry standards for the procurement, storage, handling, transporting, application and general use of chemicals and equipment or tools.

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## SPECIFICATION

### GENERIC SPECIFICATIONS (GENERAL SCOPE OF WORK) FOR FIRE SPRINKLERS AND FIRE DETECTION SYSTEMS

The scope of work for the maintenance of fire sprinklers and fire detection systems is as follows:

#### SECTION 1

##### FIRE SPRINKLER SYSTEM

- **Valves:** Within six weeks from the beginning of the contract, all defective valves must be overhauled according to ASIB regulations. The overhaul will be of such a nature that any defect occurring during the contract period shall be for the account of the contractor. With regular monthly inspections check for leakage and that valves are secured in the right positions with the required locking mechanisms.

##### Minimum requirements for valve overhaul

Activity
• Replace front cover gasket
• Replace valve clack seating
• Replace all test valve and drain valve settings
• Replace compensatory where it is fitted as a separate unit, clean and reground
• Repack main stop valve gland
• Clean annular groove
• Polish alarm valve clack spindle
• Check and record water pressure (kPa)
• Repack glands of all minor valves
• Secure all handles
• Where an annubar test valve is fitted, it must be overhauled
• Fix metal date tag
• Leave old seating in valve house
• All valves must be of such a nature that when it is hand tight it must not be leaking
• Valves must be left in correct position and secured with chain or strap with padlocks
• Paint all valves and pipe work
• Record all pressures on relevant gauges
• All valves must be checked for leakage and correct functioning



- **Reservoir tanks inspections:** Reservoirs must be checked every month for the following:

Activity
<ul style="list-style-type: none"> <li>• Check if tanks are free of leaks, if not, repair</li> </ul>
<ul style="list-style-type: none"> <li>• Check all stop valves free and in good condition, if not repair and replace as required</li> </ul>
<ul style="list-style-type: none"> <li>• All valves must be secured in right position</li> </ul>
<ul style="list-style-type: none"> <li>• Check ball valves for correct operation, if not repair or adjust</li> </ul>
<ul style="list-style-type: none"> <li>• Tank indicator must be greased and free moving</li> </ul>
<ul style="list-style-type: none"> <li>• Check if tank indicator float is secured, if not fix and adjust</li> </ul>
<ul style="list-style-type: none"> <li>• Check water level and adjust</li> </ul>
<ul style="list-style-type: none"> <li>• Check that tank lids are closed</li> </ul>
<ul style="list-style-type: none"> <li>• Check all piping and valves, fix paint repair if required</li> </ul>
<ul style="list-style-type: none"> <li>• Check that main supply valve is open and secured, provide chain and lock if required</li> </ul>

- **Jockey pump service:** The jockey pumps should be tested with every monthly service. At the beginning of the contract term the motor as well as the pump must be checked for excessive wear on the shafts and other moving parts.

Activity
<ul style="list-style-type: none"> <li>• An ampere reading should be taken</li> </ul>
<ul style="list-style-type: none"> <li>• Start the pump both manually as well as automatically</li> </ul>
<ul style="list-style-type: none"> <li>• After starting make sure that the switch is returned to automatic setting</li> </ul>
<ul style="list-style-type: none"> <li>• Do not run the pump too long on manual as the system can over pressurise</li> </ul>
<ul style="list-style-type: none"> <li>• Check for bearing noise and vibration</li> </ul>
<ul style="list-style-type: none"> <li>• Check that the bearings are greased</li> </ul>
<ul style="list-style-type: none"> <li>• Check glands for leakage</li> </ul>
<ul style="list-style-type: none"> <li>• Record pressures</li> </ul>

#### Special Note where diesel engines exist

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- Diesel engines service ({pumps water through the pipe reticulation system}):
  - At the beginning of the contract, at specific sites where diesel engines are installed, the engines should be checked according to the schedule below, entitled “routine inspection on a monthly basis”. Quarterly minor services and annual **major services** must be carried out on diesel engines.

#### **Routine Inspection on a Monthly Basis**

Item	Activity
Check oil	<ul style="list-style-type: none"> <li>• Check engine oil level and add if necessary</li> </ul>
Air Cleaner	<ul style="list-style-type: none"> <li>• Service air cleaner, dust bowls and filters</li> <li>• Change oil if oil bath type</li> <li>• Service air pre-cleaner</li> <li>• Check restriction indicator for red signal</li> <li>• Check intake ducting for obstruction</li> <li>• Check hoses and clips etc. for</li> <li>• Serviceability and tightness</li> </ul>
. Fuel system	<ul style="list-style-type: none"> <li>• Drain fuel sediment</li> <li>• Check all diesel lines and hoses for tight sealing,</li> <li>• Chafing and leaks</li> <li>• Check for leaks on fuel tank and tap</li> </ul>
Cooling system	<ul style="list-style-type: none"> <li>• Check coolant level and add if necessary</li> <li>• Check for rust in water system</li> <li>• Check for rust spots and leaks on radiator and reservoir</li> <li>• Check condition of rubber hoses, pipes and clamps for serviceability</li> </ul>
Batteries	<ul style="list-style-type: none"> <li>• Obtain visual condition of batteries (two of)</li> <li>• Check battery terminals for tightness and condition.</li> <li>• Check condition of battery leads and ensure that connections are secure</li> <li>• Load test batteries</li> </ul>
V-Belts	<ul style="list-style-type: none"> <li>• Check condition of V-Belt/s</li> </ul>

Item	Activity
	<ul style="list-style-type: none"> <li>• Twin V-Belts should only be replaced in pairs (retention after 10 – 60 minutes)</li> <li>• Check tension of V-Belts, adjust if necessary</li> </ul>
DC Electrical -	<ul style="list-style-type: none"> <li>• Check condition of starter motor and test</li> <li>• Check condition of alternator and test</li> <li>• Check wiring and leads for deterioration and secure all connection</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Check exhaust system for damage</li> <li>• Check webbing tape for condition and signs of exhaust leaks</li> <li>• Check exhaust outlet for excessive carbon deposits</li> <li>• Check exhaust hangers, mountings and brackets for condition and tightness</li> </ul>
General	<ul style="list-style-type: none"> <li>• Check for oil, water, fuel and exhaust leaks</li> </ul>
Electrical General	<ul style="list-style-type: none"> <li>• Check for loose connections within cubical and on set</li> <li>• Check wiring for signs of deterioration within cubical and on set</li> <li>• Test fuel transfer pump for normal operation on mains and alternator supply</li> <li>• Test battery charger/s for normal operation</li> <li>• <b>Check all electrical components for sign of damage or overheating etc</b></li> </ul>
Safety devices – A	<ul style="list-style-type: none"> <li>• Diesel level low</li> <li>• Battery charge failure</li> <li>• Start failure ( Monitor battery voltage after third start attempt to obtain battery condition)</li> </ul>
Safety devices – B	<ul style="list-style-type: none"> <li>• Test alarms and ensure that the engine cut out</li> <li>• High engine temperature</li> <li>• Low oil pressure</li> <li>• Low water level</li> <li>• Over speed</li> </ul>

Item	Activity
	<ul style="list-style-type: none"> <li>• Under speed</li> <li>• Emergency stop activated</li> </ul>
Testing normal function	<ul style="list-style-type: none"> <li>• Did the plant start-up automatically</li> <li>• Check start up delay and record</li> <li>• Check that hour meter is working and record reading</li> <li>• Check for oil leaks while engine is running</li> <li>• Check for fuel leaks while engine is running</li> <li>• Check for water leaks while engine is running</li> <li>• Check for exhaust leaks while engine is running</li> <li>• Monitor water temperature</li> <li>• Monitor oil pressure</li> <li>• Check for excessive exhaust smoke</li> <li>• Check for abnormal vibration</li> <li>• Listen for unfamiliar noises</li> </ul>
Testing after shut down	<ul style="list-style-type: none"> <li>• Make sure that no alarm is indicated on control shut down panel</li> <li>• Check battery charger/s for normal operation</li> </ul>
Testing before leaving	<ul style="list-style-type: none"> <li>• All alarms cleared on control panel</li> <li>• All switches in normal / auto position</li> <li>• Check neatness and overhaul condition of plant and plant room</li> </ul>

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### Minor service diesel engine

Item	Activity
Oil	<ul style="list-style-type: none"><li>• Check condition of engine oil / change if necessary clean oil filters ( replace if cartridge type)</li></ul>
Air cleaner	<ul style="list-style-type: none"><li>• Service air cleaner, dust bowls and filters</li><li>• Change oil if oil bath type</li><li>• Service air pre-cleaner</li><li>• Check restriction indicator for red signal</li><li>• Check intake ducting for obstruction</li><li>• Check hoses and clips etc. for serviceability and tightness</li></ul>
Fuel system	<ul style="list-style-type: none"><li>• Drain fuel sediment</li><li>• Check all diesel lines and hoses for tight sealing chafing and leaks</li><li>• Check for leaks on fuel tank and taps</li></ul>
Fuel filters	<ul style="list-style-type: none"><li>• Check and cleans fuel filter/s</li><li>• Check diesel / water separator filter element</li></ul>
Fuel pump	<ul style="list-style-type: none"><li>• Test and clean diesel lift pump</li></ul>
Cooling system	<ul style="list-style-type: none"><li>• Check coolant level and add if necessary</li><li>• Check for rust in water system</li><li>• Check for rust spots and leaks on radiator and reservoir</li><li>• Check condition of rubber hoses, pipes and clamps for serviceability</li></ul>
Radiator	<ul style="list-style-type: none"><li>• Check the radiator / reservoir pressure cap</li><li>• tension springs and sealing washers are not damaged</li></ul>
Batteries	<ul style="list-style-type: none"><li>• Obtain visual condition of batteries</li><li>• Check battery terminals for tightness and condition</li><li>• Check condition of battery leads and ensure that connections are secure</li><li>• Load test batteries</li></ul>

Item	Activity
Clean battery	<ul style="list-style-type: none"> <li>• Clean battery terminals and lubricate</li> </ul>
V-Belts	<ul style="list-style-type: none"> <li>• Condition of V-belt/s</li> <li>• Twin V-Belts should only be replaced in pairs (<b>retention after 10 – 60 minutes</b>)</li> <li>• Check tension of V-Belts , adjust if necessary</li> </ul>
DC Electrical -	<ul style="list-style-type: none"> <li>• Check condition of starter motor and test</li> <li>• Check condition of alternator and test</li> <li>• Check wiring and leads for deterioration and secure all connections</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Check exhaust system for damage</li> <li>• Check webbing tape for condition and signs of exhaust leaks</li> <li>• Check exhaust outlet for excessive carbon Deposits</li> <li>• Check exhaust hangers, mountings and brackets</li> <li>• For condition and adjust and lubricate all joints</li> </ul>
Electrical	<ul style="list-style-type: none"> <li>• General check for loose connections within cubical and on set</li> <li>• Check wiring for signs of deterioration within Cubical and on set</li> <li>• Test fuel transfer pump for normal operation on mains and alternator supply</li> <li>• Test battery charger / s for normal operation</li> <li>• Check all electrical components for sign of damage or overheating etc.</li> </ul>
Safety devices A	<ul style="list-style-type: none"> <li>• A-Diesel low (warning signal for low diesel)`</li> <li>• Battery charge failure (low charge)</li> <li>• Start failure ( Monitor battery voltage after third start attempt to obtain battery condition)</li> </ul>
Safety devices B	<ul style="list-style-type: none"> <li>• Test alarms and ensures that the engine cut out</li> <li>• High engine temperature</li> </ul>

Item	Activity
	<ul style="list-style-type: none"> <li>• Low oil pressure</li> <li>• Low water level</li> <li>• Over speed</li> <li>• Under speed</li> <li>• Alternator voltage high</li> <li>• Alternator voltage low</li> <li>• Emergency stop activated</li> </ul>
Testing normal function	<ul style="list-style-type: none"> <li>• Did the plant start-up automatically</li> <li>• Check start up delay and record</li> <li>• Check that hour meter is working and record reading</li> <li>• Check for oil leaks while engine is running</li> <li>• Check for fuel leaks while engine is running</li> <li>• Check for water leaks while engine is running</li> <li>• Check for exhaust leaks while engine is running</li> <li>• Monitor water temperature</li> <li>• Monitor oil pressure</li> <li>• Monitor DC alternator charging rate</li> <li>• Check for excessive exhaust smoke</li> <li>• Check for abnormal vibration and follow up</li> <li>• Listen for unfamiliar noises and follow up</li> </ul>
Testing after shut down	<ul style="list-style-type: none"> <li>• Make sure that no alarm is indicated on control shut down panel</li> <li>• Check battery charger/s for normal operation</li> </ul>
Testing before leaving the premises	<ul style="list-style-type: none"> <li>• All alarms cleared on control panel</li> <li>• All switches in normal / auto position</li> <li>• Check neatness and over all condition of plant and plant room</li> </ul>
Diesel top up	<ul style="list-style-type: none"> <li>• Top up diesel after test runs.</li> </ul>

### Major Service for diesel engine

Description	Activity
Oil	<ul style="list-style-type: none"> <li>• Change engine oil</li> <li>• Replace oil filters</li> </ul>
Air cleaner	<ul style="list-style-type: none"> <li>• Replace filter/s</li> <li>• Repair filter/s</li> </ul>
Fuel system	<ul style="list-style-type: none"> <li>• Replace filter/s</li> <li>• Close fuel supply</li> <li>• Loosen and remove filters</li> <li>• Replace fuel filter/s</li> <li>• Replace diesel / water separator filter element</li> <li>• Check visibility of fuel level indicator pipe</li> <li>• Open fuel supply</li> <li>• Bleed system</li> <li>• Test run standby plant</li> </ul>
Testing restore mains	<ul style="list-style-type: none"> <li>• Check mains restoration timing and record</li> <li>• Check engine cool –of-timing and record</li> </ul>
Cooling system	<ul style="list-style-type: none"> <li>• Pressure test</li> <li>• Pressure test cooling system</li> <li>• Pressure test radiator / reservoir pressure cap</li> <li>• Ensure that recommended rust inhibitor has been</li> <li>• Added to cooling system</li> </ul>
Battery condition	<ul style="list-style-type: none"> <li>• Replace batteries</li> <li>• Obtain visual condition of battery</li> <li>• Check battery terminals for tightness and condition</li> <li>• Clean battery terminals and lubricate</li> </ul>
V-Belts	<ul style="list-style-type: none"> <li>• Replace V-Belts and re-tension after 10 – 60 minutes</li> </ul>
DC Electrical	<ul style="list-style-type: none"> <li>• Check condition of starter motor and test</li> <li>• Check condition of alternator and test</li> <li>• Check wiring and leads for deterioration and secure all connections</li> </ul>
Cylinder head/s	<ul style="list-style-type: none"> <li>• Re-torque cylinder head/s</li> </ul>



Description	Activity
	<ul style="list-style-type: none"> <li>• Adjust valve clearance</li> </ul>
Bolts and nuts	<ul style="list-style-type: none"> <li>• Retighten all visible nuts engine and in particular</li> <li>• Intake and exhaust manifolds and ducts</li> <li>• Exhaust flange/s</li> <li>• Starter motor and alternator fitting</li> <li>• Nozzle holders</li> <li>• Bell housing bolts and nuts</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Check exhaust system for damage</li> <li>• Check webbing tape for condition and signs of exhaust leaks</li> <li>• Check exhaust outlet for excessive carbon Deposits</li> <li>• Check exhaust hangers, mountings and brackets</li> <li>• For condition and adjust and lubricate all joints</li> </ul>
Check for leaks	<ul style="list-style-type: none"> <li>• Check for oil leaks</li> <li>• Check for water leaks</li> <li>• Check for fuel leaks</li> <li>• Check for exhaust leaks</li> </ul>
Overhaul condition -	<ul style="list-style-type: none"> <li>• Check condition of anti-vibration mountings on engine , DC panel and cubical</li> <li>• Check control linkage on injection pump for</li> <li>• Proper function and adjustment and lubricate all joints</li> </ul>
Coupling and breather	<ul style="list-style-type: none"> <li>• Check for play on flexible coupling</li> <li>• Clean and ensure engine breather is unobstructed</li> </ul>
Electrical General	<ul style="list-style-type: none"> <li>• Check for loose connections within cubical and on set</li> <li>• Check wiring for signs of deterioration within cubical and on set</li> <li>• Test fuel transfer pump for normal operation on mains and alternator supply</li> <li>• Test battery charger/s for normal operation</li> <li>• Check all electrical components for sign of damage or</li> </ul>

Description	Activity
	<p>overheating etc.</p> <ul style="list-style-type: none"> <li>• Test immersion heater</li> </ul>
Safety devices A	<ul style="list-style-type: none"> <li>• Diesel level low</li> <li>• Overload</li> <li>• Battery charge failure</li> <li>• Start failure ( Monitor battery voltage after third start attempt to obtain battery condition)</li> </ul>
Safety devices B	<ul style="list-style-type: none"> <li>• Test alarms and ensure that the engine cut out</li> <li>• High engine temperature</li> <li>• Low oil pressure</li> <li>• Low water level</li> <li>• Over speed</li> <li>• Under speed</li> <li>• Emergency stop activated</li> <li>• Alternator voltage high</li> <li>• Alternator voltage low</li> <li>• Emergency stop activated</li> </ul>
Testing normal function	<ul style="list-style-type: none"> <li>• Did the plant start-up automatically</li> <li>• Check start up delay and record</li> <li>• Check that hour meter is working and record reading</li> <li>• Check for oil leaks while engine is running</li> <li>• Check for fuel leaks while engine is running</li> <li>• Check for water leaks while engine is running</li> <li>• Check for exhaust leaks while engine is running</li> <li>• Monitor water temperature</li> <li>• Monitor oil pressure</li> <li>• Monitor DC alternator charging rate</li> <li>• Check for excessive exhaust smoke</li> <li>• Check for abnormal vibration</li> </ul>

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Description	Activity
	<ul style="list-style-type: none"> <li>Listen for unfamiliar noises</li> </ul>
Testing after shut down	<ul style="list-style-type: none"> <li>Make sure that no alarms are indicated on control panel</li> <li>Check battery charger/s for normal operation</li> </ul>
Testing before leaving	<ul style="list-style-type: none"> <li>All alarms cleared on control panel</li> <li>All switches in normal / auto position</li> <li>Check neatness and overhaul condition of plant and plant room</li> </ul>

### **Electrical motors instead of diesel engines - service:**

At the beginning of the contract term all electric motors should be given a major service and repeated annually. The service is as follow:

Description
<ul style="list-style-type: none"> <li>Check for any bearing noise or excessive vibration</li> </ul>
<ul style="list-style-type: none"> <li>Grease all bearing</li> </ul>
<ul style="list-style-type: none"> <li>Tighten all electrical connections</li> </ul>

**Pumps service:** At the beginning of the contract term all pumps should be given a major service and repeated annually. The service is as follow:

Description
<ul style="list-style-type: none"> <li>Check for bearing noise and excessive vibrations</li> </ul>
<ul style="list-style-type: none"> <li>Grease all bearings</li> </ul>
<ul style="list-style-type: none"> <li>Replace gland packing</li> </ul>
<ul style="list-style-type: none"> <li>Inspect all moving parts for excessive wear</li> </ul>
<ul style="list-style-type: none"> <li>Check that pumps reach required pressures</li> </ul>

### **Gauges service**

- With every monthly service all pressures should be recorded. The proper operation of the gauges should also be checked. Gauges should be of the specified size.

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### **Pipe work service**

- Every month all pipe work should be checked for leakage. If any alterations were done to the building that requires the modification of the sprinkler system, it should be brought under the attention of the duly appointed SAPO representative without any delays.
- All fastening devices should be checked. It is the contractor's responsibility to see to it that all pipe work conforms to the standard laid down by regulations. This includes the layout of the grid and the number of required sprinklers in the system.
- It will be the contractor's responsibility to ensure a clear ASIB certificate.

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## **SECTION 2**

### **FIRE DETECTION SYSTEM (Monthly service)**

#### **Alarm motor service**

Description
<ul style="list-style-type: none"><li>• The alarm motor must be checked for operation</li></ul>
<ul style="list-style-type: none"><li>• All relevant components must be in good working order</li></ul>

#### **Control panel service**

Description
<ul style="list-style-type: none"><li>• The 5 control panels in control room shall at all times be in a good working condition</li></ul>
<ul style="list-style-type: none"><li>• All indicator lights on panels shall be fully operational</li></ul>
<ul style="list-style-type: none"><li>• All switches shall be working correctly</li></ul>
<ul style="list-style-type: none"><li>• The different functions on the control panel shall be marked clearly according to regulation</li><li>• Louver panel in control room must be in a good working condition (open and close buttons)</li><li>• The 8 Louver operating panels on columns must be in a good working condition (Operational floor)</li></ul>

#### **Emergency voice alarm communication systems**

Description
<ul style="list-style-type: none"><li>• The communication system must at all times be in good working order - NA</li></ul>

#### **Manual Call points, Detectors, alarms, batteries, 83 smoke dampers (louvers)**

Description
<ul style="list-style-type: none"><li>• Testing of manual call points</li><li>• Testing of smoke and heat detectors</li><li>• Testing of sirens and sounders</li><li>• Visual alarms must be at all times in a working condition.(Located under</li></ul>

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Description
operational floor roof) <ul style="list-style-type: none"><li>• Testing of Louvers zones (8of) in control room.</li><li>• Testing of louvers panel operation on columns</li><li>• Back up batteries on the 5 fire panel must be replaced when contract starts and must be maintained and tested.</li><li>• Batteries on the eight columns must be replaced when contract starts and must be maintained and tested.</li></ul>

### Training

Description
<ul style="list-style-type: none"><li>• Control room staff must receive once off training to operate the fire panels, louvers.</li></ul>
<ul style="list-style-type: none"><li>• A operation manual for guidance must be available</li></ul>

Quarterly and annual services /maintenance on all fire detection systems listed above will be as follows:

#### Quarterly Service:

- Log book analysis - Prepare for testing by reading through the log book. Any corrective action that has not yet been taken should be noted and carried out during the service.
- Service and pre-service check - Use the panel menu to take a print out of all the sensors that are in a "service" or "pre-service" condition. This indicates that they are contaminated. Exchange these points with replacement units where necessary, set to the same address. Dirty sensors can be sent for cleaning.

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- Analogue values check - Use the panel menu to generate printer reports of device analogue values. Compare these values to the permitted values for each point. Replace faulty devices or repair wiring.
  - Configuration check - Connect "Planner" to the panel and print out a complete system configuration from the panel software. Compare this to the system specification and verify that the system zoning, input - output mapping and other settings have not been changed.
  - Disabled device check - Check if the common Disable-LED on the front of the panel is illuminated. If so. Use the menu to identify the disabled devices and investigate the reason. Any faults should be rectified, and any disabled devices should then be enabled.
  - Test the alarms - Test one sensor or cellpointer in each zone. Activate each point in turn, checking that the sounders/sirens are operational and that the panel reacts correctly.
  - Check that signals to auxiliary systems such as the Fire Station, air-conditioning, building management systems, graphics displays or remote indicators, all function correctly.
  - Fault tests - Remove one sensor in the system and check that the panel correctly reports the event. Accept the fault, replace the sensor and reset the panel.
  - Panel controls test - Check that all control functions, the ACCEPT - and RESET keys, are operating correctly.
  - Printer tests - Make sure that the printer is printing all events generated during the service.
  - Monitor earth leakage - On systems with the earth leakage monitoring enabled, this feature should be tested. Apply a short (create a fault) between the positive leg of the

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Z-loop and earth, checking that the panel indicates an earth leakage fault. Repeat, using the negative leg of the Z-loop.

- Connection tests - Make sure that all terminal screws are tight and cables inside the panel are secure. Check that all printed circuit boards (PCB's) appear to be in good working condition, are free of dust and securely mounted in the panel.
- Battery replacement checks - Make sure that the battery installed is sufficient to meet the system specifications. If not, then replace it with a suitable one.
- Check if the battery replacement date will be passed before the next service. If so, replace the battery. The age of the battery should be marked on it with a label, or refer to the logbook. SLA batteries should be replaced at least every four years, or more frequently in high temperature environments. Refer to manufacturer literature.
- Battery operation checks - Check that the battery is healthy. One method is to conduct an "all-sounders on" operational test with the mains off and the system running on batteries. This will test the batteries under a full load. The battery voltage should be monitored during this test and should not fall below 24 volts.
- Remove one battery terminal and verify that the system reports a battery fault. Replace terminal, ensure that it is tight, and reset the panel. Clean the battery with a damp cloth and lightly lubricate any exposed terminals with petroleum jelly if necessary.
- Time and Date set - Set the correct time and date on the panel, if necessary.
- Completion of service - Restore the system to normal condition, re-enable any disabled devices, re-connect any disconnected devices, re-connect all external systems that were disconnected for the testing, and ensure that the system is left in a 100% working condition. Advise all staff and the remote manned centre that testing is complete, and that any alarm now received must be treated as real.



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### **Annual Service:**

The annual service includes:

- Input - Output configuration test - Using a fairly large representative sample, verify by testing that the input-output mapping operates as programmed. Activate an input, such as a sensor, call point, or interface unit, and verify that the correct outputs operate. Also check that the outputs function correctly, for example, that they pulse, or operate continuously, that any delays operate correctly, etc.
- Building changes check - Visually check that the internal structural layout of the building, including inter-office partitioning, has not changed from the system specification to such an extent that it may affect the efficient operation of the fire alarm system.
- Completion of service - Restore the system to normal condition, re-enable disabled devices, re-connect any disconnected devices, re-connect all external systems that were disconnected for the testing, and ensure that the system is left in 100% working condition. Advise all staff and the remote manned centre that testing is complete, and that any alarm now received must be treated as real.

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## Maintenance schedule and detailed specification of fire protection (sprinkler) and fire detection systems

### General property information:

Province	Gauteng
SAPO Region name	Head Office
<b>Sites</b>	
<b>1. National Post Centre (NPC)</b>	
Brief property description (type and number of buildings, and their use)	Offices
Total property size	
Contact Details of site manager / supervisor	Fundisiwe
Name and physical address of building	497 Jeff Masemola street, Pretoria, 0002

### Generic Specification (Scope of Works)

<b>EQUIPMENT</b>	<b>SERVICE FREQUENCY</b>
All valves	One major service Check and repair monthly
Reservoir tanks	Monthly
Hydrants	In fire equipment contract
Alarm motor and gong	Monthly
Jockey pump	Monthly
Diesel engine	Major service yearly Minor service quarterly Check and repair monthly
Electric motors	Major service annually Check and repair monthly
Pumps	Major service annually Check and repair monthly
Gauges	Monthly
Pipe work	Monthly
Control panel	Monthly
Fire hose reels	In fire equipment contract

### ASIB REPORTS

It will be the contractor's responsibility to ensure a clear ASIB certificate.

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## **SERVICE SCHEDULES**

### **BALL VALVES, SERVICE**

Within the first six weeks from beginning of the contract all valves must be overhauled according to ASIB regulation. The overhaul will be of such a nature that any defect occurring during the contract period shall be for the account of the contractor. With regular monthly inspections check for leakage and secured in right positions with required locking mechanism.

### **MINIMUM REQUIREMENTS FOR VALVE OVERHAUL:**

- Replace front cover gasket
- Replace valve clack seating
- Replace all test valve and drain valve settings
- Replace compensatory where it is fitted as a separate unit, where it is not, clean and reground in
- Repack main stop valve gland
- Clean annular groove
- Polish alarm valve clack spindle
- Repack glands of all minor valves
- Secure all handles
- Where an annubar test valve is fitted, it must be overhauled
- Fix metal date tag
- Leave old seatings in valve house
- All valves must be of such a nature that when it is hand tight it must not be leaking
- Valves must be left in correct position and secured with chain or strap with padlocks
- Paint all

### **MONTHLY SERVICE**

**Furthermore, every month the following must be done:**

- Record all pressures on relevant gauges
- All valves must be checked for leakage and correct functioning

### **RESERVOIR TANK**

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**Reservoir must be checked every month for the following:**

- Check if tanks are free of leaks, if not repair
- Check all stop valves free and in good condition, if not repair and replace as required
- All valves must be secured in right position
- Check ball valves for correct operation, if not repair or adjust
- Tank indicator must be greased and free moving
- Check if tank indicator float is secured, if not fix and adjust
- Check water level and adjust
- Check that tank lids are closed
- Check all piping and valves, fix paint repair if required
- Check that main supply valve is open and secured, provide chain and lock if required

**HYDRANTS SERVICE**

**The hydrants must be checked with every monthly service for the following:**

- All working parts must be able to complete their function without any difficulty
- Check for any leakage
- Check for any obstruction in the outlet

**ALARM MOTOR AND GONG SERVICE**

- The alarm motor and gong must be checked for operation with every monthly service
- All relevant valves must be in good working order

**JOCKEY PUMP SERVICE**

The jockey pumps should be tested with every monthly service. At the beginning of the contract term the motor as well as the pump must be checked for excessive wear on the shafts and other moving parts.

- An ampere reading should be taken
- Start the pump both manually as well as automatically
- After starting make sure that the switch is returned to automatic setting
- Do not run the pump too long on manual as the system can over pressurise
- Check for bearing noise and vibration

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- Check that the bearings are greased
  - Check glands for leakage
  - Record pressures

## **DIESEL ENGINES SERVICE**

At the beginning of the contract the diesel engine should be according to the schedule given below named Major Service Diesel, this service should be carried out annually. On a quarterly basis a minor service should be carried out, and on a monthly basis a routine inspection:

### **ROUTINE INSPECTION – DIESEL**

*	Check oil	-	Check engine oil level and add if necessary
*	Air cleaner	-	Service air cleaner, dust bowls and filters
		-	Change oil if oil bath type
		-	Service air pre-cleaner
		-	Check restriction indicator for red signal
		-	Check intake ducting for obstruction
		-	Check hoses and clips etc. for Serviceability and tightness
*	Fuel system	-	Drain fuel sediment
		-	Check all diesel lines and hoses for tight sealing, Chafing and leaks
		-	Check for leaks on fuel tank and tap
*	Cooling system	-	Check coolant level and add if necessary
		-	Check for rust in water system
		-	Check for rust spots and leaks on radiator and reservoir
		-	Check condition of rubber hoses, pipes and clamps for serviceability
*	Batteries	-	Obtain visual condition of battery
		-	Check battery terminals for tightness and condition.
		-	Check condition of battery leads and ensure that connections are secure
		-	Load test batteries

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*	V-Belts	-	Condition of V-Belt/s
		-	Twin V-Belts should only be replaced in pairs (Retention after 10 – 60 minutes)
		-	Check tension of V-Belts, adjust if necessary
*	DC Electrical	-	Check condition of starter motor and test
		-	Check condition of alternator and test
		-	Check wiring and leads for deterioration and secure all connection
*	Exhaust	-	Check exhaust system for damage
		-	Check webbing tape for condition and signs of exhaust leaks
		-	Check exhaust outlet for excessive carbon deposits
		-	Check exhaust hangers, mountings and brackets for condition and tightness
*	General	-	Check for oil, water, fuel and exhaust leaks
*	Electrical General	-	Check for loose connections within cubical
			And on set
		-	Check wiring for signs of deterioration within cubical and on set
		-	Test fuel transfer pump for normal operation on mains and alternator supply
		-	Test battery charger/s for normal operation
		-	Check all electrical components for sign of damage or overheating etc.
*	Safety devices – A	-	Diesel level low
		-	Battery charge failure
		-	Start failure ( Monitor battery voltage after third start attempt to obtain battery condition)
*	Safety devices-B	-	Test alarms and ensure that the engine cut out
		-	High engine temperature
		-	Low oil pressure
		-	Low water level
		-	Over speed
		-	Under speed
		-	Emergency stop activated

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*	Testing normal Function	-	Did the plant start-up automatically
		-	Check start up delay and record
		-	Check that hour meter is working and record reading
		-	Check for oil leaks while engine is running
		-	Check for fuel leaks while engine is running
		-	Check for water leaks while engine is running
		-	Check for exhaust leaks while engine is running
		-	Monitor water temperature
		-	Monitor oil pressure
		-	Check for excessive exhaust smoke
		-	Check for abnormal vibration
		-	Listen for unfamiliar noises
*	Testing after shut down	-	Make sure that no alarm is indicated on control panel
		-	Check battery charger/s for normal operation
*	Testing before leaving	-	All alarms cleared on control panel
		-	All switches in normal / auto position
		-	Check neatness and overall condition of plant and plant room

#### **MINOR SERVICE DIESEL**

*	Oil	-	Check condition of engine oil / change if necessary
		-	clean oil filters (replace if cartridge type)
*	Air cleaner	-	Service air cleaner, dust bowls and filters
		-	Change oil if oil bath type
		-	Service air pre-cleaner
		-	Check restriction indicator for red signal
		-	Check intake ducting for obstruction
		-	Check hoses and clips etc. for serviceability and tightness
*	Fuel system	-	Drain fuel sediment
		-	Check all diesel lines and hoses for tight sealing chafing and leaks
		-	Check for leaks on fuel tank and taps

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*	Fuel filters	-	Check and cleans fuel filter/s
		-	Check diesel / water separator filter element
*	Fuel pump	-	Test and clean diesel lift pump
*	Cooling system	-	Check coolant level and add if necessary
		-	Check for rust in water system
		-	Check for rust spots and leaks on radiator and reservoir
		-	Check condition of rubber hoses, pipes and clamps for serviceability
*	Radiator	-	Check the radiator / reservoir pressure cap tension springs and sealing washers are not damaged
*	Batteries	-	Obtain visual condition of battery
		-	Check battery terminals for tightness and Condition
		-	Check condition of battery leads and ensure that connections are secure
		-	Load test batteries
*	Clean battery	-	Clean battery terminals and lubricate
*	V-Belts	-	Condition of V-belt/s
		-	Twin V-Belts should only be replaced in pairs (retention after 10 – 60 minutes)
		-	Check tension of V-Belts , adjust if necessary
*	DC Electrical	-	Check condition of starter motor and test
		-	Check condition of alternator and test
		-	Check wiring and leads for deterioration and secure all connections
*	Exhaust	-	Check exhaust system for damage
		-	Check webbing tape for condition and signs of exhaust leaks
		-	Check exhaust outlet for excessive carbon Deposits
		-	Check exhaust hangers, mountings and brackets For condition and adjust and lubricate all joints
*	Electrical	-	General check for loose connections within

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		<ul style="list-style-type: none"> <li>- cubical and on set</li> <li>- Check wiring for signs of deterioration within Cubical and on set</li> <li>- Test fuel transfer pump for normal operation on Mains and alternator supply</li> <li>- Test battery charger / s for normal operation</li> <li>- Check all electrical components for sign of damage or overheating etc.</li> </ul>
*	Safety devices -	<p>A-Diesel low</p> <ul style="list-style-type: none"> <li>- Battery charge failure</li> <li>- Start failure ( Monitor battery voltage after third start attempt to obtain battery condition)</li> </ul>
*	Safety devices B	<ul style="list-style-type: none"> <li>- Test alarms and ensures that the engine cut out</li> <li>- High engine temperature</li> <li>- Low oil pressure</li> <li>- Low water level</li> <li>- Over speed</li> <li>- Under speed</li> <li>- Alternator voltage high</li> <li>- Alternator voltage low</li> <li>- Emergency stop activated</li> </ul>
*	Testing normal function	<ul style="list-style-type: none"> <li>- Did the plant start-up automatically</li> <li>- Check start up delay and record</li> <li>- Check that hour meter is working and record reading</li> <li>- Check for oil leaks while engine is running</li> <li>- Check for fuel leaks while engine is running</li> <li>- Check for water leaks while engine is running</li> <li>- Check for exhaust leaks while engine is running</li> <li>- Monitor water temperature</li> <li>- Monitor oil pressure</li> <li>- Monitor DC alternator charging rate</li> <li>- Check for excessive exhaust smoke</li> <li>- Check for abnormal vibration</li> <li>- Listen for unfamiliar noises</li> </ul>
*	Testing after shut down	<ul style="list-style-type: none"> <li>- Make sure that no alarm is indicated on control panel</li> <li>- Check battery charger/s for normal operation</li> </ul>

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- |                         |   |   |
|-------------------------|---|---|
| *Testing before leaving | - | All alarms cleared on control panel                           |
|                         | - | All switches in normal / auto position                        |
|                         | - | Check neatness and overhaul condition of plant and plant room |

## MAJOR SERVICE DIESEL

- |                        |                   |   |   |
|------------------------|-------------------|---|---|
| *                      | Oil               | - | Change engine oil   |
|                        |                   | - | Replace oil filters   |
| *                      | Air cleaner       | - | Replace filter/s  |
|                        |                   | - | Repair filter/s   |
| *                      | Fuel system       | - | Replace filter/s  |
|                        |                   | - | Close fuel supply   |
|                        |                   | - | Loosen and remove filters   |
|                        |                   | - | Replace fuel filter/s   |
|                        |                   | - | Replace diesel / water separator filter element                         |
|                        |                   | - | Check visibility of fuel level indicator pipe                           |
|                        |                   | - | Open fuel supply  |
|                        |                   | - | Bleed system  |
|                        |                   | - | Test run standby plant  |
| *Testing restore mains |                   | - | Check mains restoration timing and record                               |
|                        |                   | - | Check engine cool –of-timing and record                                 |
| *                      | Cooling system    | - | Pressure test   |
|                        |                   | - | Pressure test cooling system  |
|                        |                   | - | Pressure test radiator / reservoir pressure cap                         |
|                        |                   | - | Ensure that recommended rust inhibitor has been Added to cooling system |
| *                      | Battery condition | - | Replace batteries   |
|                        |                   | - | Obtain visual condition of battery                                      |
|                        |                   | - | Check battery terminals for tightness and condition                     |
|                        |                   | - | Clean battery terminals and lubricate                                   |
| *                      | V-Belts           | - | Replace V-Belts and re-tension after 10 – 60 minutes                    |
| *                      | DC Electrical     | - | Check condition of starter motor and test                               |

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		<ul style="list-style-type: none"> <li>- Check condition of alternator and test</li> <li>- Check wiring and leads for deterioration and secure all connections</li> </ul>
*	Cylinder head/s	<ul style="list-style-type: none"> <li>- Retorque cylinder head/s</li> <li>- Adjust valve clearance</li> </ul>
*	Bolts and nuts -	<p>Retighten all visible nuts engine and in particular</p> <ul style="list-style-type: none"> <li>- Intake and exhaust manifolds and ducts</li> <li>- Exhaust flange/s</li> <li>- Starter motor and alternator fitting</li> <li>- Nozzle holders</li> <li>- Bell housing bolts and nuts</li> </ul>
*	Exhaust	<ul style="list-style-type: none"> <li>- Check exhaust system for damage</li> <li>- Check webbing tape for condition and signs of exhaust leaks</li> <li>- Check exhaust outlet for excessive carbon Deposits</li> <li>- Check exhaust hangers, mountings and brackets For condition and adjust and lubricate all joints</li> </ul>
*	Check for leaks	<ul style="list-style-type: none"> <li>- Check for oil leaks</li> <li>- Check for water leaks</li> <li>- Check for fuel leaks</li> <li>- Check for exhaust leaks</li> </ul>
*	Overhaul condition	<ul style="list-style-type: none"> <li>- Check condition of anti-vibration mountings on engine, DC panel and cubical</li> <li>- Check control linkage on injection pump for Proper function and adjustment and lubricate all joints</li> </ul>
	*Coupling and breather	<ul style="list-style-type: none"> <li>- Check for play on flexible coupling</li> <li>- Clean and ensure engine breather is unobstructed</li> </ul>
*	Electrical General	<ul style="list-style-type: none"> <li>- Check for loose connections within cubical and on set</li> <li>- Check wiring for signs of deterioration within cubical and on set</li> <li>- Test fuel transfer pump for normal operation on mains and alternator supply</li> <li>- Test battery charger/s for normal operation</li> <li>- Check all electrical components for sign of damage or overheating etc.</li> </ul>

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		-	Test emersion heater
*	Safety devices – A	-	Diesel level low
		-	Overload
		-	Battery charge failure
		-	Start failure ( Monitor battery voltage after third start attempt to obtain battery condition)
*	Safety devices-B	-	Test alarms and ensure that the engine cut out
		-	High engine temperature
		-	Low oil pressure
		-	Low water level
		-	Over speed
		-	Under speed
		-	Emergency stop activated
		-	Alternator voltage high
		-	Alternator voltage low
		-	Emergency stop activated
*	Testing normal function	-	Did the plant start-up automatically
		-	Check start up delay and record
		-	Check that hour meter is working and record reading
		-	Check for oil leaks while engine is running
		-	Check for fuel leaks while engine is running
		-	Check for water leaks while engine is running
		-	Check for exhaust leaks while engine is running
		-	Monitor water temperature
		-	Monitor oil pressure
		-	Monitor DC alternator charging rate
		-	Check for excessive exhaust smoke
		-	Check for abnormal vibration
		-	Listen for unfamiliar noises
*	Testing after shut down	-	Make sure that no alarms is indicated on control panel
		-	Check battery charger/s for normal operation
*	Testing before leaving	-	All alarms cleared on control panel
		-	All switches in normal / auto position

- 
- Check neatness and overhaul condition of plant and plant room

#### **ELECTRICAL MOTORS, SERVICE**

**At the beginning of the contract term all electric motors should be given a major service and repeated annually. The service is as follow:**

- Check for any bearing noise or excessive vibration
- Grease all bearing
- Tighten all electrical connections

#### **PUMPS, SERVICE**

**At the beginning of the contract term all pumps should be given a major service and repeated annually. The service is as follow:**

- Check for bearing noise and excessive vibrations
- Grease all bearing
- Replace gland packing
- Inspect all moving parts for excessive wear
- Check that pumps reach required pressures

#### **GAUGES SERVICE**

With every monthly service all pressures should be recorded. The proper operation of the gauges should also be checked. Gauges should be of the specified size.

#### **PIPE WORK SERVICE**

Every month all pipe work should be checked for leakage. If any alterations were done to the building that requires the modification of the sprinkler system, it should be brought under the attention of the representative without any delays. All fastening devices should be checked. It is the contractor's responsibility to see to it that all pipe work conforms to the standard laid down by the ASIB regulations. This includes the layout of the grid and the number of required sprinklers in the system.

#### **CONTROL PANEL SERVICE**

- The control panel shall at all times be in good working order

- 
- All indicator lights shall be fully operational
  - All gauges shall be in working order
  - All switches shall be working correctly
  - The different functions on the control panel shall be marked clearly according to regulation
  - Check that wire connections are secure

## BILLS OF QUANTITIES

NO	BUILDING	DESCRIPTION	MONTHLY PRICE				TOTAL PRICE FOR 1 YEAR (12 months)
1	NPC	Monthly Service as per these specifications	R				R
	BUILDING	DESCRIPTION	QUATERLY PRICE				
2	NPC	Quarterly service as per these specifications	R				R
	REPAIRS –ONCE-OFF						
3	ITEM DESCRIPTION	UOM	QUANTITY	UNIT RATE (Material & Labour)	TOTAL		
4	<u>Diesel Unit</u> 2 x 65-250 End Suction Centrifugal Pump with bronze impeller, bronze wear rings and packed gland seal direct coupled to a 3029D three- cylinder naturally aspirated diesel engine with heat exchanger	Item	1	R	R		

	cooling all mounted on a fabricated and painted mild steel channel base plate to ASIB specifications, dual battery sets, 6hour fuel tank and including the 6-hour ASIB works test. Exhaust supplied is 2m straight pipe. <b><i>Note: Unit to operate at 2400RPM with the pump absorbing 24.9kW at the duty flow and the engine rated for 29kW continuous at 1300m altitude.</i></b>				
	<b><u>Jockey Unit</u></b> 1 x 3SV12 or similar ASIB approved Vertical Multistage Centrifugal Pump Unit complete with 1.1kW; 400Volt; 3-Phase electric motor all to ASIB specifications.	Item	1	R	R
	1 Set ASIB approved fire control panels		1	R	R



	comprising:- 2 x 12Volt diesel controller 1 x standalone annunciator panel c/w RS1000 cell ling data logger 1 x 1.1kW Jockey Controller: 400Volt: 3-Phase 1 x Extractor Fan	Item			
	<b><u>Electrical and Cabling</u></b> 1 x pump house DB board to suit diesel & jockey pumps	Item	1	R	R
	<b><u>Electrical and Cabling</u></b> Electrical cabling inside the pump room between the control panels, diesel engine, jockey motor & pressure switches.	Item	1	R	R
	<b><u>Remove diesel pumps / Stripping</u></b> Stripping out x2 diesel pumps and panels	No	2	R	R
	Rigging	Item	1	R	R
	Transport to remove	Item	1	R	R

	<b><u>Piping</u></b> Extra piping & fittings, new piping for work valves	Item	1	R	R
	<b><u>Extras</u></b> 1 x ASIB 3 – let Start Arrangement as detailed	Item	1	R	R
	1 x Safety file, medicals induction	Item	1	R	R
6	<b>Provisional sum</b>	Unknown repairs and future repairs (any repair work that might arise during the contract period)	Provisional sum to be used at the discretion of the SAPO and deducted from the contract amount if not required.		R 300 000
<b>TOTAL BID PRICE (EXCL VAT)</b>					R
<b>15% VAT</b>					R
<b>TOTAL BID PRICE (INCLUDING VAT)</b>					R

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**Call outs**

<b>Labor</b>		<b>Labor rate per hour</b>
<b>Skilled</b>		<b>R</b>
<b>Semi-Skilled</b>		<b>R</b>
<b>Un-Skilled</b>		<b>R</b>
<b>Components and parts replacements</b>		
<b>Total % mark-up including handling cost</b>		.....%

Notes: Contractor to conduct inspection service and repairs. To provide a full detailed report, of all works done throughout the whole system full electrical operation. Complying with Statutory and Local Authority Requirements complete and to standards of codes of pract



4. The specification approval **(Internal use only)** NPC Fire Sprinkler & Detection system maintenance and repairs

**Compiled by:**

**Approved By:**

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Fundisiwe Mtshali  
Facilities Manager  
Properties  
2023 /03 /16

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Martin Coetsee  
Acting GM  
Properties  
2023 /03 / 16

Note: Signature on this page for internal use **ONLY**. This is not approval of the bidder (s) submission and prices