

## Part C3: Service Information

### Service Information

#### 1. Description of the Service and Objectives

Transnet National Ports Authority (TNPA) Port of Ngqura objective is to maintain the serviceability of the Heating, Ventilation, and air conditioning (HVAC) infrastructure at:

- eMendi building, - Centralized AC system
- Port control-split units
- Admin craft building(ACB)- Centralized AC units
- Brenton House-split units
- Sand bypass Main pump station, and booster pumps 1-3 – Centralized AC system
- Clear water intake-Ventilation system
- Substations (7)-Split units
- Container offices (sand bypass and Joost park)- split units

in a sustainable manner at the lowest operating and maintenance costs while ensuring compliance to statutory requirements and building regulations.

The required services and maintenance are for a period of thirty-six (36) months for the services and at frequency described in Annexure A of this document. All works conducted must comply with the Original Equipment Manufacturer requirements and Occupational Health and Safety Act (85 of 1993).

#### 2. Scope overview

- 2.1. The Works are for the inspection, Provision of Maintenance of Heating Ventilation & Air-Conditioning at the Port of Ngqura as specified below:
  - Perform planned and unplanned maintenance on the HVAC
  - Condition based maintenance on the HVAC
  - BMS system maintenance.
- 2.2. The Contractor will be fully responsible for meeting all requirements in this document regarding the Works.
- 2.3. For each piece of equipment, all work will be carried out to standards as required by the Original Equipment Manufacturer (OEM) as well as any applicable governing law and/or regulations.

Where OEM standards differ from those required by this document the more stringent requirement shall apply. The Contractor will be fully responsible for obtaining (and keeping up to date with) said requirements.

- 2.4. Where, such a need is mutually agreed between the Contractor and TNPA, TNPA shall put in place a "Hotline" (i.e. 24-hour telephonic support by product specialist) agreement with the relevant OEM. In this event the Contractor shall be responsible that such Hotline services are always operational and available, but all costs in this regard shall be carried by TNPA. The contractor shall NOT add any mark-up to any Hotline related expenses. A "Hotline" agreement shall typically ensure that problems relating to system controls are promptly rectified. It is intended that Hotline agreements will be in place with OEMs for PLC related controls and computerised control systems.
- 2.5. The Contractor will be responsible for providing staff which are sufficiently skilled and qualified for successful execution of the works. The Contractor shall supply with the minimum Staffing Schedule for approval by TNPA. This may be amended by mutual arrangement between TNPA and the Contractor from time to time.
- 2.6. All work shall be charged according to the Activity Schedule. However, no labour shall be charged for any non-scheduled work, repair work or other work when carried out by a scheduled maintenance shift.
- 2.7. The Contractor will be responsible for keeping spares levels up to a sufficient quantity and standard as to comply with the requirements of this contract and will charge TNPA accordingly.
- 2.8. All spares will be charged according to the Activity Schedule. The Contractor shall arrange for the spares room.
- 2.9. The Contractor shall keep the spares room in a neat and clean state and an updated spares list will always be available on-site. Spares will be neatly arranged and easily locatable via an appropriate index on the spares list. Wherever practicable, a notice will be placed on the rack, next to the spare part, as to where the part is used in the installation. A resource will be dedicated to ensuring that spares are effectively managed and scrapped parts and waste removed from site.

### **3. Employer's Requirements**

3.1. Perform **planned and unplanned maintenance** on the following systems:

- Centralised heat pump systems.
- Fan coil air handling units and filters.
- Network control Panel.
- Air ducts.
- Electrical heaters.
- Steam humidifiers.

- Dust collectors and associated equipment.
- Air extraction systems.
- Air ventilation systems.
- Measurement equipment (temp, pressure flows, etc.).
- Domestic type split air conditioning units.
- Electrical and control panels.
- BMS system maintenance.
- Commissioning of HVAC systems after outages.
- Perform statutory tests.
- Filter maintenance and washing.
- Implement filter care programme to monitor filter movement and filter condition.
- Provide input on design proposal pertaining to air conditioning, ventilations and refrigerant plant including ducts as and when required.
- Check drawing for correctness.
- Replace major equipment such as compressor units as and when required.
- Lubricant replacement on compressors.
- Replacement and/ or installation of domestic type air conditioners.
- Attend to breakdowns, defects and carry out fault finding and repairs

### 3.2. Condition based maintenance

Applicable to all HVAC equipment connected to the BMS system:

- On-line monitoring of input and output signals.
- On-line monitoring of all field devices such temperature devices etc.
- On-line verification of all applied settings and software configurations.
- Evaluation of all alarms initiated.
- Evaluation of all HVAC equipment for correctness against the design specifications.
- Evaluation of all plant configurations to ensure correct plant status.
- On-line implementation of settings and software configuration changes as per modification process and record keeping thereof.
- Downloading and record keeping of critical data for audit purpose.

### 3.3. Standby services

- a) The Contractor shall ensure that staff with adequate expertise is available to manage plant issues on a 24-hour standby service.
- b) The Contractor's response time to a callout shall be one hour from the time the person on standby is officially notified until the time that person arrives on site.

- c) The Contractor's 'Technical Support Service' staff shall be available as advisory back-up to assist on instances where the staff on site is struggling to solve any technical problem.

### 3.4. Continuous Improvement

- a) The Contractor shall implement a program of continuous improvement to optimise lubricant performance and reduce lubricated system and equipment failure rates.
- b) The Contractor will be responsible for participating in root cause failure investigations as required by the Employer.
- c) The Contractor will participate in improvement programs pertaining to lubricated equipment.

### 3.5. Preferential procurement procedures

#### 3.5.1 Requirements

- a) The Contractor will respect OEM warranties to TNPA always when procuring spare parts, products or 3<sup>rd</sup> party services. It will be the Contractor's sole responsibility to ensure that OEM warranty requirements are adhered to always.
- b) Where Contractors use or quote on spare parts of a lower quality than recommended by the OEM, or parts not recommended by the OEM, this shall be clearly indicated to the Service Manager on the quotation. This also implies that the Contractor must build relationships with the various key OEM's.

#### 3.5.2 Subcontracting

- a) Subcontracting will be allowed provided that the subcontractor meets all the requirements stipulated on this service information.
- b) If the contractor subcontracts works, the contractor is responsible for providing the works as if the contractor has not subcontracted. This contract applies as subcontractors' employees and equipment were the contractors.
- c) All the requirements stipulated on this service information shall be met by the subcontractor in case the contractor is subcontract.
- d) The employer shall perform all necessary checks, assessments and verifications to ensure that the subcontractor meets all the requirements.

## SUMMARY

### 1. Staff Requirements and Supervision

- 1.1 The Contractor shall provide the staff for the execution of the Service which shall be supervised by means of regular inspections by a Supervisor of the Contractor who is expected to:
  - have a thorough knowledge of the various tasks, equipment and material
  - to be able to properly train and manage employees in their individual tasks
- 1.2 The Contractor shall always ensure that all staff have been provided with uniforms/ PPE and will have visible identification.
- 1.3 Provision of resources
  - a) The contractor shall utilise / provide skilled and suitable qualified staff with experience in the following:
    - Building Management System Experience
    - Electrical Trade
    - Refrigeration Mechanic Trade
    - Safe handling of refrigerants license
    - Refrigeration COC competency
    - Occupational Health and Safety Act 85 of 1993 and SHE Standards
    - Quality Management Control and Assurance as per ISO Standards
    - Procedure writing

### 2. Equipment, Material & Consumables

- 2.1 The supply of all tools, plant, equipment, and general materials necessary to carry out the work shall be the responsibility of the Contractor unless otherwise specified in the contract agreement.
- 2.2 All Equipment used by the Contractor on site shall be properly maintained and operated. All vehicles on public roads shall be roadworthy, with the necessary licenses and safety requirements.
- 2.3 Where it is necessary for equipment to be left parked on roads after working hours, the Contractor shall supply red/orange flashing lights of an approved type, or alternatively make arrangements to hire the lights at his expense.
- 2.4 The Contractor keeps daily records of his Equipment used on Site and the Working Areas (Distinguishing between owned and hired Equipment) with access to such daily records

### **3. Workmanship**

- 3.1 The Contractor shall stock sufficient original equipment spares to ensure that downtime is kept to a minimum.
- 3.2 All the parts shall keep adequate stocks on site within 24 hours for replacement/rectification of the works.
- 3.3 The Contractor shall only use competent personnel as defined in the Lift, Escalator and Passenger Conveyor Regulations of the Occupational Health and Safety Act (No. 85 OF 1993) to carry out all work required in terms of this contract, and shall be in possession of all maintenance and instruction manuals as well as other technical data required.
- 3.4 Workmanship shall be of the highest standard and only new materials and spares of the highest quality shall be used. All replacement parts shall be sourced from the original manufacturer.
- 3.5 Under no circumstances will TNPA permit the use of non-standard parts on any lift installation.
- 3.6 Under no circumstances is the Contractor allowed to tamper, add, modify, change any components, wiring, electronics on any lift installation without the approval of TNPA.
- 3.7 The inspection, testing, maintenance and servicing of the EQUIPMENT shall be supervised by the Engineer or delegated alternate.

### **4. Quality plans and control**

- 4.1 All work must be executed in accordance with prevailing industry norms and standards relating to quality. In this regard, the Contractor will be expected to draft quality plans for the Service Manager from time to time.
- 4.2 Emphasis must be on improving system reliability and on ensuring that rostered maintenance work is indeed performed as and when required.
- 4.3 The Contractor shall ensure that all measuring and test equipment is calibrated at all times & proof thereof must be readily available.
- 4.4 The contractor shall submit a QCP which will be overseen by TNPA and will ensure that the relevant documentation is available on site to manage the scope and related programs.
- 4.5 The Contractor shall adhere to all 'Quality References' and 'Standards' applicable to this SOW.

### **5. Training**

- 5.1 The Contractor shall provide basic HVAC training and related training to the Employer's staff on an as and when required basis.

## 6. Site Information

- 6.1 The Contractor shall take all the necessary precautions to protect the public and the property and workmen of Employer, and all other persons, from injury or damage during the progress of the work.
- 6.2 During the term of this contract, any unauthorised person(s) whosoever (other than the Contractor) shall not be permitted to do any work whatsoever on the EQUIPMENT for which the Contractor is responsible in terms of this contract.
- 6.3 The Contractor shall permit the Engineer to inspect the work being done by the Contractor on the EQUIPMENT at any time.
- 6.4 Employer's Site entry and security control, permits, and Site regulations.
  - 6.4.1 The Contractor must attend the site briefing to familiarize himself/herself with the nature of the work, the conditions under which the work is to be performed, the means of access to the site, any limitations, or other authorities.
  - 6.4.2 The Contractor must attend Employer induction training and retain proof of induction for period of project and keep a copy on the safety.
  - 6.4.3 The Contractor is responsible for ensuring where applicable permit to work is issued prior to any onsite work.

## 7. Working Hours

- 7.1 The Employer shall be entitled to call the Contractor out after normal working hours (including weekends and public holidays), at no extra charge, when the attendance of the latter is deemed by the former to be necessary and the latter shall attend when so called out.
- 7.2 The Contractor shall issue a monthly schedule activities to the Employer notice of the dates when they intend to undertake lift maintenance services/lift inspections.
- 7.3 The Contractor is required to respond to all calls on the same day that a fault is reported. A Lift Fault Record book shall be provided on site by the Contractor for recording of lifts faults. The Contractor must keep Fault Record books in the safe and secure location.
- 7.4 The Contractor shall ensure that attendance to the call-out includes recording full details of the action taken to repair the fault in the Lift Fault Record book.

## **8. Waste Disposal**

All waste generated by the Contractor shall be disposed at an accredited waste disposal/recycle site and relevant disposal certificates shall be issued to the Employer.

## **9. Applicable Standards**

The repair and maintenance of the ventilation systems must comply with the following:

- SANS 10142-1 – Wiring of premises, for Low-voltage installation.
- National Environmental Management Act 107 of 1998
- Occupational Health and Safety & Regulations Act 85 of 1993
- ASA-B-9 : Safety codes for Mechanical Refrigeration
- ASHRAE Standard 55: Thermal Environmental Conditions for Human Occupancy

## **10. Training and technology transfer**

The Contractor shall provide skills transfer on ventilation repairs and maintenance.

## **11. Safety risk management**

- 11.1 All Occupational Health and Safety Act Regulations pertaining to the work being carried out must be adhered to. The Contractor shall be responsible for the precautions and measures to ensure the health and safety of all individuals on the Site and temporary areas (if applicable) outside of the Site, but utilised by the Contractor, with the prior approval of the Employer.
- 11.2 The Employer's employees and Contractors (including their employees) shall always be supervised by a competent Supervisor appointed in writing in terms of the regulations of the Occupational Health and Safety Act and made aware of his responsibilities. The Contractor shall adhere to all the Health and Safety requirements as stipulated on the Employer's Health and safety specification.
- 11.3 The Contractor is required to submit a Safety, Health and Environmental (SHE) file to the risk department for assessment and approval. SHE File is always to be kept on site. The file must contain amongst others the following(Contractor's Obligation):
- Principal Contractors/Contractors Organogram
  - Letter of Good Standing with Compensation Fund
  - General Liability Insurance (Summary of Policy)
  - Notification Letter of Construction Work ~ Department Of Labour (If Applicable)
  - Appointments (Inclusive of legal appointments)



- Contractor Induction: Employees and Visitors
- Principal Contractor's SHEQ Policy
- Health & Safety Plan
- Fall Protection Plan inclusive of Fall Protection Risk assessment (If Applicable)
- Risk Assessments (inclusive of action plan to manage controls)
- Method Statements
- Safe Operating Procedures
- Incidents / Accidents Register and Investigation Report Template
- Emergency Contact Telephone Numbers
- Contractor Site Emergency Plan (For Site establishment)
- Documented Proof of Daily Toolbox Safety Talks/ DSTI
- Inspections Checklist
- All Registers
- Welfare Facilities arranged
- Electrical Compliance (CoC) (If Applicable)
- Mandatory Agreement (TIMS Section 37(2) Agreement)

11.4 Contractor shall be responsible for the supply and use of the following PPE:

- SABS approved Safety Protective and Occupational Footwear,
- SABS approved Acoustics - Hearing Protection,
- Eye protection - glasses, goggles and face shields as required,
- SABS approved Occupational Protective Helmets,
- Full length work clothes, long sleeved and long pants on the berth areas,
- Life jackets if working within 2m of the quay edge,
- Any specialized protective clothing which is standard work practice as referred to in their Contract.
- SABS approved and calibrated gas meters for confined spaces.

## **12. Environmental constraints and management**

- 12.1 The Contractor shall identify the kinds of environmental impacts that will occur as a result of his activities and then prepare separate method statements describing how each of those impacts will be prevented or managed so that the standards set out in this document are achieved.
- 12.2 The Contractor shall submit an Environmental Management Plan (EMP) to be included in the SHE File. The EMP must include, but not limited to the following sections detailing the environmental

risks/possible impacts and management controls (mitigation measures) pertaining to the risks listed in the section:

- Site establishment including contractor's site camp
- Protection of sensitive/no-go areas
- Management of hazardous chemicals and flammable substances
- Pollution control & Spill response
- Waste Management
- Environmental education and awareness
- Protection of marine species and birds
- Removal of project waste and debris from the marina waters
- Decommissioning of site camp
- Monitoring and auditing
- Record keeping

12.3 The Contractor performs the works and all construction activities within the Site and Working Areas having due regard to the environment and to environmental management practices as more particularly described in Employer's Plan.

12.4 The Contractor shall ensure that his management, foremen and the general workforce, as well as all suppliers and visitors to Site have attended the Induction Programme prior to commencing any work on Site. If new personnel commence work on the Site during construction, the Contractor shall ensure that these personnel undergo the Induction Programme and are made aware of the environmental specifications on Site.

12.5 Where applicable, the Contractor ensures that he appoints a suitably qualified Subcontractor, to be approved by the Service Manager, to undertake the "Removal of rare, endemic or endangered species". This appointment must be completed at least three weeks before commencement of any other work on Site.

12.6 The Contractor shall, in particular, comply with the following Acts and publications:

12.6.1 The Compensation for Occupational Injuries and Diseases Act (COID), No. 130 of 1993;  
The Contractor shall produce proof of his registration and good standing with the Compensation Commissioner in terms of the COID Act.

12.6.2 The Contractor is in terms of section 37(2) of the Occupational Health and Safety Act No. 85 of 1993, deemed to be an employer in his own right with duties as prescribed in the OHS

Act, and agrees that all work done, and machinery and plant used, shall comply with the provisions of the OHS Act in respect of all persons in his employ, other persons on the premises or the site or place of the works or on the works to be executed by him and under his control in terms of the contract. According to section 37(2), Act No. 85 of 1993, the agreements in this contract and all documents attached or referred to, form an integral part of the arrangements and procedures mentioned in the aforementioned section.

- 12.6.3 In addition to compliance with sub-clause 6.2 and 7.2 hereof, the Contractor shall report all accidents in writing to the Engineer. Any accident resulting in the death of or injury to any person on the installation covered by this contract shall be reported within 24 hours of its occurrence and any other accident shall be reported within 48 hours of its occurrence.

### **13. Quality of Materials**

- 13.1 All Materials are new, unless the use of old or refurbished goods and/or Materials are expressly permitted as stated elsewhere in this Works Information or as may be subsequently instructed by the Service Manager.
- 13.2 Where Materials for inclusion in the works originate from outside the Republic of South Africa, all such Materials are new and of merchantable quality, to a recognised national standard, with all proprietary products installed to manufacturers' instructions.
- 13.3 The Contractor replaces any Materials subject to breakages (whether in the Working Areas or not) or any Materials not conforming to standards or specifications stated and notifies the Service Manager and the Supervisor on each occasion where replacement is required.
- 13.4 All Materials shall have a warranty period of 12 months.

### **14. Contractor's Invoices**

- 14.1 The Service Manager certifies payment following an assessment date, the Contractor complies with the Employer's procedure for invoice submission
- 14.2 The invoice must correspond to the Service Manager's assessment of the amount due to the Contractor as stated in the payment certificate.
- 14.3 The invoice states the following:

Invoice addressed to Transnet SOC Ltd;  
Transnet SOC Limited's VAT No: 4720103177

Invoice number

The Contractor's VAT Number

The Contract number (as stipulated in the contract)

The invoice contains the supporting details but limited not limited to the following:  
Detailed works that were conducted including all the materials and spares used.

14.4 The invoice is presented either by email, post or by hand delivery.

14.5 Invoices submitted by post and hand deliveries are addressed to:

Transnet SOC Limited

T/A Transnet National Ports Authority Port of Ngqura

P O Box 612054, Bluewater Bay, Port Elizabeth, 6212, South Africa

For the attention of the Service Manager

14.6 The invoice is presented as an original.

14.7

14.8 All payments are provisional and subject to audit. The Contractor preserves his records for such a period as legislation requires, but in any event not less than five (5) years.

14.9 The Employer deducts any amount owed by the Contractor to the Employer from any amount payable by the Employer to the Contractor.

## 15. Management meetings

15.1 Regular meetings of a general nature may be convened and chaired by the Service Manager as follows:

<b>Title and purpose</b>	<b>Approximate time &amp; interval</b>	<b>Location</b>	<b>Attendance by:</b>
Kick off meeting and scope clarification	Within 1 week before contact award	eMendi building	Service Manager, Supervisor, and Contractor
Risk register and compensation events	Three Monthly	eMendi building	Service Manager, Supervisor, Risk Specialist ,Environmental Specialist and Contractor
Safety Meeting	Bi- Monthly	eMendi building	Service Manager, Supervisor, Risk Specialist ,Environmental Specialist and Contractor

- 15.2 All meetings are to be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register are not to be used for the purpose of confirming actions or instructions under the contract as these are to be done separately by the person identified in the conditions of contract to carry out such actions or instructions.

## **16. Contract Change Management**

- 16.1 For ease of communication, standard templates shall be used for contract change management. The Contractor shall forward all correspondence with respect to contract change management, i.e. early warnings and notifications of compensation events, on the standard templates provided.
- 16.2 Records of Time Charge, Payments & Assessments of Compensation Events to be kept by the Contractor
- 16.3 The Contractor shall keep the following records available for the Service Manager to inspect:
- Records of Sub-Contractors appointed by the Contractor
  - Records of people and equipment within the working areas
  - Records of equipment used and people employed outside the Working Areas
  - Records of quotations, invoices and pay slips

## Annexure A

All Maintenance of HVAC electricals and controls systems shall be scheduled, at least at minimum , to the requirements of the following tables:

**Table 1: Building Management system**

Infrastructure description	Frequency	Description of the works
<b>BMS</b>	bi-annually	Check that the BMS is working Check that all sensors linked to the BMS are working and replace where necessary
	bi-annually	Check that the cooling tower rotation/sequencing is working and adjust where necessary.
	bi-annually	Check that all HVAC equipment go into sleep mode and activates at set times.
	bi-annually	Check and adjust settings where necessary

**Table 2: Air Handling units**

Infrastructure description	Frequency	Description of the works
<b>Air Handling Units</b>	bi-annually	Check that the FAN motor and heater banks' AMPS and Voltage are within range.
	bi-annually	Check that the Volt meters and Ammeters are functioning according to specification and replace where necessary
	bi-annually	Test all the emergency stops
	bi-annually	Test all heaters for functionality and a healthy link status with the BMS
	bi-annually	Check and test the pilot lights (Fan and heater bank status lights)
	bi-annually	Check and test all switches and replace where necessary
	bi-annually	Check and test the fire detection signal relay
	bi-annually	Check and test all flow switches and replace where necessary
	bi-annually	Test and Service (Disassembly and

		assembly) the VSDs, main control panel and adjust settings where necessary
	bi-annually	Check and test that all three-way and two-way valve actuators are functioning within specification.
	bi-annually	Check and test all Temperature sensors and transmitters and healthy status on the BMS.
	bi-annually	Check all pressure gauges and replace where necessary
	bi-annually	Check all the temperature gauges and replace where necessary
	bi-annually	Check and test all controllers according to operating philosophy and adjust settings/ re-program where necessary

**Table 3: Panels and distribution boards**

Infrastructure description	Frequency	Description of the works
Panels and DBs	bi-annually	Check HVAC plant room lighting and replace where necessary with LED lights.
	bi-annually	Label/Update all HVAC Plant Room Panels and DBs
	bi-annually	Compile/update panels and DB register
	bi-annually	Compile/update panel and DB drawing register.
	bi-annually	Verify panel and DB drawings and amend where necessary
	bi-annually	Check that all door panels are lockable and repair/replace where necessary
	bi-annually	Inspection and testing of panels components in line with SANS 10142.
	bi-annually	Remove dust and other deposits
	bi-annually	Painting of DB's
	bi-annually	Check voltmeters and ammeters and replace where necessary
	bi-annually	Check for loose connections and tighten circuit breaker terminals.
	bi-annually	Check cable insulation and replace where necessary.
	bi-annually	Manually switch the circuit breakers on and off.
	bi-annually	Check and replace panel lights where necessary
	bi-annually	Check isolator switches and

		replace where necessary
	bi-annually	Check the fire detection interfacing relays where applicable and replace where necessary.
	bi-annually	Check all circuit breakers, Earth leakages etc and replace where necessary.
	bi-annually	Perform COCs on all HVAC Plant room panels and DBS

**Table 4: Window units**

Infrastructure description	Frequency	Description of the works
Window installed units	bi-annually	Clean Condenser coil by means of compressed air or clean water
	bi-annually	Check fans for alignment, corrosion, chips, dents and that they are secure to the shaft
	bi-annually	Check fan motors/s to ensure they are running freely, and the bearings show no sign of wear. Oil where necessary
	bi-annually	Check the compressor for unusual noise and that the mounting rubbers are in good state
	bi-annually	Check thermostats, switches, contactors and the wiring thereof to ensure that all the connections are tight and clean
	bi-annually	Check the refrigerant system for any leaks
	bi-annually	Generally, clean the unit with an approved agent

**Table 5: Split units**

Infrastructure description	Frequency	Description of the works
Split units	bi-annually	Check and clean filters of the <u>evaporator</u>
	bi-annually	Clean evaporator coil with a suitable anti-bacteria substance 'Clean drip trays and check drainage system
	bi-annually	Check all electrical connections for any loose wiring or corrosion
	bi-annually	Generally, clean the indoor unit covers
	bi-annually	Check and re-tighten all flare nuts on <u>condensing unit</u>



Split units	bi-annually	Clean condenser coil with compressed air or clean water
	bi-annually	Check fans for alignment, corrosion, chips, dents and that they are secure to the shaft
	bi-annually	Check fan motors/s to ensure they are running freely and that the bearings show no sign of wear. Oil where necessary
	bi-annually	Check the compressor for unusual noise and that the mounting rubbers are in good state
	bi-annually	Check thermostats, switches, contactors and the wiring thereof to ensure that all the connections are tight and clean
	bi-annually	Check the refrigerant system for any leaks
	bi-annually	Generally, clean the unit with an approved agent
	bi-annually	Check and observe operation as per the data on the nameplate

**Table 6: Centralised air-conditioning systems**

Infrastructure description	Frequency	Description of the works
Centralised air-conditioning systems	bi-annually	Check and clean filters of the evaporator, 'Clean evaporator coil with a suitable anti-bacteria substance
	bi-annually	Clean drip trays and check drainage system
	bi-annually	Check all electrical connections for any loose or corrosion wiring
	bi-annually	Check single phase motor/s in evaporator and record amps
	bi-annually	Clean coils of both <u>condensing</u> units by means of compressed air or clean water
	bi-annually	Check all electrical connections and starters
	bi-annually	Record refrigerant pressures and check for leaks
	bi-annually	Clean filters by means of compressed air or water
	bi-annually	Check Carel/Mitsubishi controller for correct settings
	bi-annually	Check roof fans control panel, switches and pilot lights
	bi-annually	

	bi-annually	Record on and off coil temperatures after start up
	bi-annually	Generally, clean the units and plant

**Table 7: Ventilation systems**

Infrastructure description	Frequency	Description of the works
Ventilation system	bi-annually	Clean filters and replace where possible
	bi-annually	Clean condensing unit by means of compressed air or clean water
	bi-annually	Check electrical and wiring for any corrosion or loose wiring
	bi-annually	Check compressor and fan operation and record readings as per name plate
	bi-annually	Check and record operation pressures
	bi-annually	Check fresh air fan for proper operation and refill manometer
	bi-annually	Check for broken or missing blades
	bi-annually	Check operation of roof fans and compile report should you find any not working

## Annexure B

Item No	Key Personnel Description	Minimum Experience	Minimum Qualifications
1	Lead Electrician	Minimum of 5 to 7 years post qualification as a Trade Tested Electrician demonstrating experience knowledge of switch gears, distribution boards, lockout procedures, protection systems and conducting and issuance of COC certificates minimum of 2 years' experience post obtaining a wireman's license.	Electrical N2/N3/N4 and SAQA Accredited Trade test certificate (Electrician) and a wireman's license
2	Control and Instrumentation Technician	Demonstrate at least 6 years' experience on control and instrumentation including working experience and programming of PLCs, LAN networks controllers and wiring of distributed control systems.	N6/National Diploma Controls/Instrumentation and a trade test certificate

Transnet National Ports Authority  
 Contract Number: TNPA/2022/05/0448/4474/RFQ  
 Description of Works: Maintenance, Repairs & Servicing of HVAC (Heating, Ventilation and Air Conditioning) at the Port of Ngqura for a Period of Thirty Six (36) Months

3	Electrician assistants(x2)	2 years' experience in the maintenance of electrical motors, lockout procedures, switchgear, distribution boards and any electrical tests.	Electrical N2/N3/N4
4	Site supervisor	Minimum of 8 to 10 years post qualification as a Trade Tested Electrician demonstrating experience knowledge of switch gears, distribution boards, lockout procedures and protection systems.	Electrical /Mechanical N2/N3/N4 and SAQA Accredited Trade test certificate (Electrician/refrigeration)

## Annexure C

### ***EQUIPMENT SCHEDULE***

	Description	Quantity
<b>Main pump station</b>	Trane condensing units	2
	roof top extractor fans	2
	fresh air intake case axial fan complete with ducting and filters	1
	control panel with IR32 Carel controller	1
	control panel for roof fans	1
	manometer	1
<b>Booster pump 1, 2 and 3</b>	Trane Condensing unit	1
	Roof mounted extractor fan	1
	air handling unit and filters	
	fresh air intake case axial fan complete with ducting and filters	1
	roof fans	4
<b>Brenton House</b>	12000 BTU Mitsubishi split units air conditioners	10
	6000 BTU split unit air conditioners	5
<b>Substations</b>	10 000 BTU split unit air conditioners	7
<b>Port Control</b>	10 000 BTU split unit air conditioners	7
<b>ACB</b>	25000 BTU Mitsubishi Outdoor air conditioner unit	4
	12000 BTU Mitsubishi split units air conditioners	2
<b>eMendi Bldg.</b>	25000 BTU Mitsubishi Outdoor air conditioner unit	26

## Part C4: Site Information

Document reference	Title	No of pages
	This cover page	1
	Site Information	2
	Total number of pages	3

**Note:**

The ***Contractor*** is cautioned that the information contained in the Site Information section (Part C4) is limited and is by no means to be taken as conclusive. It is merely to give the ***Contractor*** an indication of the site and typical conditions that can be expected in the area. The ***Contractor*** is to take note of the source and location of information used in the Site Information Section (Part C4) and makes their own conclusions as to what conditions can be expected in and around the site.

## Description of the Site and its surroundings

### General description

#### 1.1 Site Location

The Port of Ngqura is located 30km outside of Port Elizabeth in the Easter Cape and consist of a container terminal with 4 berths, a dry bulk terminal with 2 berths and a liquid terminal with 1 berth. The N2 bypasses the port to the north. The Port is bounded by the Coega Special Economic Zone with one main access road into the Port leading to various buildings, owned and operated by TNPA or TPT (terminal operator).



**Figure 1:eMendi building**

Prospective contractors shall attend the site inspection and acquaint themselves with the nature of the *Works*, the condition under which the work is to be performed, and the means of access to site, any limitations or other authorities and in general will all matters that may influence or affect the contractor.

## 1.2 Existing buildings, structures, and plant & machinery on the Site

As built drawings for buildings will be provided to the *Contractor* "as and when" required. The buildings to be covered through this contract includes **only** the Transnet National Ports Authority Buildings mentioned in this document.

## 1.3 Hidden services

The buildings where works need to be conducted consists of underground services such as water pipes and electrical cables, and including services within building walls. The contractor should ensure that they do not damage any nearby services.

## 1.4 Port Operations

The Contractor shall take note that the buildings in which the services are provided are operational buildings. Access via lifts allows for continuation and ease of conducting business in the Port. The contractor shall ensure at all times that the maintenance works required does not disrupt or cause any inconvenience to Port Operations.

The Contractor shall also ensure that the safety of all users in the building is maintained at all times.

## 1.5 Weather Conditions

Not applicable. All work will be done within enclosed buildings.

## 1.6 Site Access and Site Facilities

### Site Access

- Access to the site can be gained via the N2, onto Neptune Road, past the Port Entrance Plaza, first left onramp on to Klub Road.
- The eMendi Building is located off Klub Road, 600m past the onramp.
- The Port Control Building is located at the end of Klub Road, 3.6km past the onramp.

## 1.7 Contractor's Camp

Not applicable.

## 1.8 Site Facilities

The *Contractor* may only make use of the general public toilets within the areas where the *Services* are to be conducted.