

Appendix C - Service Information for generators

1. DESCRIPTION OF THE SERVICE AND EXECUTIVE OVERVIEW

- 1.1 The Service Provider is required to conduct two inspection services and one annual service on each of the generator sets per year. The service intervals will be as required by the manufacturer with reference to time and usage. The services will be conducted as per the manufacturer's instructions.
- 1.2 The Service Provider is required to respond to callouts from Transnet Port Terminals to attend to faults on software or equipment as directed by the Transnet Port Terminals representative during normal hours and after hours if called upon to do so.
- 1.3 After attending to a fault the Service Provider will provide Transnet Port Terminals with a report on the fault, indicating the problem and the corrective action taken.
- 1.8 The Service Provider shall be required to guarantee the maintenance work undertaken for a period of 12 months after date of acceptance of the maintenance work by the Transnet Port Terminals representative. The Service Provider shall make good any defect, due to inferior material, or workmanship, which may arise during that period.

2. GENERATOR SETS SYSTEM OVERVIEW

- 2.1 The list of generators as per the main scope of work. Some computing facilities have generators, but some make use of a common generator that is not dedicated to the data centre and maintained outside this scope of work. The makes and models are listed.

3. MAINTENANCE OF THE GENERATORS

- 3.1 To ensure access to the generator site and the availability of Transnet Port Terminals notice of a pending service must be given to the TPT IT Manager two weeks ahead of time.
- 3.2 The servicing of the generators will be as follows:

Transnet Port Terminals

Contract number: TPT/2023/08/0012/40280/RFP

Description of the Works: Monitor, maintain and support 22 computing facilities for Transnet Soc Ltd (Reg. No 1990/000900/30) Operating as Transnet Port Terminals (Herein Referred To as "TPT") at Cape Town, Durban, Richards Bay, Port Elizabeth, Ngqura, Saldanha and East London Terminals for a period of 3 years.

INSPECTION SERVICE 1 AT 3 MONTHS FOR YEAR 1, YEAR 2 AND YEAR 3			
No.	Service task	Completed Yes / No	Defective Yes / No
1	Travel to site.		
2	Carry out a detailed visual inspection for oil, fuel and water leaks.		
3	Check water jacket heater operation and condition of hoses.		
4	Check and adjust to specification battery voltage, charge rate and perform a voltage drop test to determine condition of batteries.		
5	Check engine oil level.		
6	Check fan and alternator belt tensions.		
7	Check primary fuel filters and clean if necessary.		
8	Check water level in radiator.		
9	Grease fan drive and alternator bearing.		
10	Top up oil, water and electrolyte levels if necessary.		
11	Add cooling conditioner to radiator, if required.		
12	Start engine in test position, check and adjust. <ul style="list-style-type: none">• Start cut out function• Generator output voltage stability• Generator output frequency and stability.• Engine water temperature.• Engine oil pressure.• Engine fuel pressure.• Charging alternator output.		
13	In test position check the following safety shutdown devices. <ul style="list-style-type: none">• Low oil pressure.• High engine temperature.• Engine over speed.		
14	Make additional adjustments (within the scope of routine maintenance work) to the above-mentioned equipment if necessary		
15	Switch off engine and return plant selector switch to the "auto" position.		
16	Complete service log.		
17	Complete service report.		

INSPECTION SERVICE AT 6 MONTHS FOR YEAR 1, YEAR 2 AND YEAR 3			
No.	Service task	Completed Yes / No	Defective Yes / No
1	Travel to site.		
2	Carry out a detailed visual inspection for oil, fuel and water leaks.		
3	Check water jacket heater operation and condition of hoses.		
4	Check and adjust to specification battery voltage, charge rate and perform a voltage drop test to determine condition of batteries.		
5	Check engine oil level.		
6	Check fan and alternator belt tensions.		
7	Check primary fuel filters and clean if necessary.		
8	Check water level in radiator.		
9	Grease fan drive and alternator bearing.		
10	Top up oil, water and electrolyte levels if necessary.		
11	Add cooling conditioner to radiator, if required.		
12	Start engine in test position, check and adjust. <ul style="list-style-type: none"> • Start cut out function • Generator output voltage stability • Generator output frequency and stability. • Engine water temperature. • Engine oil pressure. • Engine fuel pressure. • Charging alternator output. 		
13	In test position check the following safety shutdown devices. <ul style="list-style-type: none"> • Low oil pressure. • High engine temperature. • Engine over speed. 		
14	Make additional adjustments (within the scope of routine maintenance work) to the above-mentioned equipment if necessary.		
15	Switch off engine and return plant selector switch to the "auto" position.		
16	With the system in auto mode run generator sequence seven to load test the generators.		
17	Observe start up and load acceptance of the generator set, run the set on a minimum load of 1500 kW for up to 60 minutes then stop the sequence and reset the system.		
18	Complete service log.		
19	Complete service report.		

YEAR 1 - ANNUAL SERVICE			
No.	Service task	Completed Yes / No	Defective Yes / No
1	Travel to site		
2	Carry out a detailed visual inspection for oil, fuel and water leaks, including fuel lines and tank.		
3	Check water jacket heater operation and condition of hoses.		
4	Check and adjust to specification battery voltage, charge rate and perform voltage drop test to determine condition of batteries.		
5	Check engine oil levels and top up if necessary		
6	Check fan and alternator belt tensions.		
7	Check primary fuel filter and clean if necessary.		
8	Check water level in radiator, top up water and conditioner levels if necessary.		
9	Grease fan drive and alternator bearing.		
10	Start engine in test position, check and adjust. <ul style="list-style-type: none"> • Start cut out function. • Generator output voltage stability • Generator output frequency and stability. • Engine water temperature. • Engine oil pressure. • Engine fuel pressure. • Charging alternator output. 		
11	In test position check the following safety shutdown devices. <ul style="list-style-type: none"> • Low oil pressure. • High engine temperature. • Engine over speed 		
12	Make additional adjustments (within the scope of routine maintenance work) to the above mentioned equipment if necessary.		
13	Switch off engine and return plant selector switch to the "auto" position.		
14	With the system in auto mode run generator sequence seven to load test the generators.		
15	Observe start up and load acceptance of the generator set, run the set on a minimum load of 1500 kW for up to 60 minutes then stop the sequence and reset the system.		
16	Drain lubrication oil and replenish with diesel engine oil grade 15W40 approximately 380 litres.		
17	Change lubricating oil filter elements X 3, fuel filter elements X 5 and fuel water elements X 2.		
18	Change main X 2 and secondary X 2 air filter elements.		
19	Check valve clearance and adjust if necessary.		
20	Grease all points as required.		
21	Drain and flush cooling system, refill with clean water and add cooling system conditioner.		
22	Complete service log and report.		

YEAR 2 - ANNUAL SERVICE			
No.	Service task	Completed Yes / No	Defective Yes / No
1	Travel to site		
2	Carry out a detailed visual inspection for oil, fuel and water leaks, including fuel lines and tank.		
3	Check water jacket heater operation and condition of hoses.		
4	Check and adjust to specification battery voltage, charge rate and perform voltage drop test to determine condition of batteries.		
5	Check engine oil levels and top up if necessary.		
6	Check fan and alternator belt tensions.		
7	Check primary fuel filter and clean if necessary.		
8	Check water level in radiator, top up water and conditioner levels if necessary.		
9	Grease fan drive and alternator bearing.		
10	Start engine in test position, check and adjust. <ul style="list-style-type: none"> • Start cut out function. • Generator output voltage stability • Generator output frequency and stability. • Engine water temperature. • Engine oil pressure. • Engine fuel pressure. • Charging alternator output. 		
11	In test position check the following safety shutdown devices. <ul style="list-style-type: none"> • Low oil pressure. • High engine temperature. • Engine over speed 		
12	Make additional adjustments (within the scope of routine maintenance work) to the above-mentioned equipment if necessary.		
13	Switch off engine and return plant selector switch to the "auto" position.		
14	With the system in auto mode run generator sequence seven to load test the generators.		
15	Observe start up and load acceptance of the generator set, run the set on a minimum load of 1500 kW for up to 60 minutes then stop the sequence and reset the system.		
16	Drain lubrication oil and replenish with diesel engine oil grade 15W40 approximately 380 litres.		
17	Change lubricating oil filter elements X 3, fuel filter elements X 5 and fuel water elements X 2.		
18	Change main X 2 and secondary X 2 air filter elements.		
19	Check valve clearance and adjust if necessary.		
20	Grease all points as required.		
21	Drain and flush cooling system, refill with clean water and add cooling system conditioner.		
22	Complete service log and report.		

YEAR 3 - ANNUAL SERVICE			
No.	Service task	Completed Yes / No	Defective Yes / No
1	Travel to site		
2	Carry out a detailed visual inspection for oil, fuel and water leaks, including fuel lines and tank.		
3	Check water jacket heater operation and condition of hoses.		
4	Check and adjust to specification battery voltage, charge rate and perform voltage drop test to determine condition of batteries.		
5	Check engine oil levels and top up if necessary.		
6	Check fan and alternator belt tensions.		
7	Check primary fuel filter and clean if necessary.		
8	Check water level in radiator, top up water and conditioner levels if necessary.		
9	Grease fan drive and alternator bearing.		
10	Top up oil, water and electrolyte levels if necessary.		
	<ul style="list-style-type: none"> • Start cut out function. 		
	<ul style="list-style-type: none"> • Generator output voltage stability 		
	<ul style="list-style-type: none"> • Generator output frequency and stability. 		
	<ul style="list-style-type: none"> • Engine water temperature. 		
	<ul style="list-style-type: none"> • Engine oil pressure. 		
	<ul style="list-style-type: none"> • Engine fuel pressure. 		
	<ul style="list-style-type: none"> • Charging alternator output. 		
11	In test position check the following safety shutdown devices.		
	<ul style="list-style-type: none"> • Low oil pressure. 		
	<ul style="list-style-type: none"> • High engine temperature. 		
	<ul style="list-style-type: none"> • Engine over speed 		
12	Make additional adjustments (within the scope of routine maintenance work) to the above-mentioned equipment if necessary.		
13	Switch off engine and return plant selector switch to the "auto" position.		
14	With the system in auto mode run generator sequence seven to load test the generators.		
15	Observe start up and load acceptance of the generator set, run the set on a minimum load of 1500 kW for up to 60 minutes then stop the sequence and reset the system.		
16	Drain lubrication oil and replenish with diesel engine oil grade 15W40 approximately 380 litres.		
17	Change lubricating oil filter elements X 3, fuel filter elements X 5 and fuel water elements X 2.		
18	Change main X 2 and secondary X 2 air filter elements.		
19	Check valve clearance and adjust if necessary.		
20	Grease all points as required.		
21	Drain and flush cooling system, refill with clean water and add cooling system conditioner.		
22	Complete service log and report.		

3.3 A detailed report will be prepared by the Service Provider after each inspection and annual service of each generator. A copy of each generators service report will be stored in file provided by the Service Provider and the file will be kept in a safe place in each generator enclosure. A further 2 copies of the service report must be handed to the Transnet Port Terminals for the Company records. The report must cover the points mentioned in the inspection and annual services of the generator sets. An example of a report must be provided for review at the time of tendering. Transnet Port Terminals reserves the right to make changes to the service report which the Service Provider must then implement.

3.4 The Service Provider must also within one month of the award of this contract supply TPT with a comprehensive critical spares list for the generators and their control systems and how many of these spares are kept local and if not the delay to obtain these spares.

SUMMARY

4. Areas of Operation

The areas of operation are as listed on the scope of work document.

5. Staff Requirements and Supervision

5.1. The *Service Provider* shall provide the staff for the execution of the *Service* which shall be supervised by means of regular inspections by a Supervisor of the *Service Provider* 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.

5.2 The *Service Provider* shall always ensure that all staff have been provided with uniforms/ PPE and will have visible identification.

6. Equipment, Material & Consumables

6.1. The supply of all tools, plant, equipment, and general materials necessary to carry out the work shall be the responsibility of the *Service Provider* unless otherwise specified in the contract agreement.

6.2. All Equipment used by the *Service Provider* on site shall be properly maintained and operated. All vehicles on public roads shall be roadworthy, with the necessary licences and safety requirements.

6.3. Where it is necessary for equipment to be left parked on roads after working hours, the

Service Provider shall supply red/orange flashing lights of an approved type, or alternatively make arrangements to hire the lights at his expense.

6.4. The *Service Provider* 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

7. Workmanship

7.1. The *Service Provider* shall make good, to the satisfaction of the *IT Manager*, defective material and/or workmanship which is not in accordance with this request, and which may appear within a period of 12 months from the date of acceptance of the work, and shall repair all damage caused thereby, free of charge. The *Service Provider* shall guarantee their workmanship and materials used for the period of 12 months.

7.2. The *Service Provider* shall protect the items covered under this Contract against vandalism, misuse and accidental damage.

7.3. The *Service Provider* shall ensure that he has sufficient spares, materials, and employed staff to plan and execute the services required by the *TPT* as per the Services Information.

8. Facilities for the Service Provider

No facilities will be provided by the *TPT*.

9. Working Hours

Vendor must be available 24 x 7 x 365 for call outs to address incidents. Maintenance can be done on normal workdays at time agreed with IT Manager.

10. Waste Disposal

All waste generated by the *Service Provider* shall be disposed at an accredited waste disposal/recycle site and relevant disposal certificates shall be issued to the *TPT*.

11. Management Meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Overall contract progress and feedback	Monthly	Microsoft Teams	<i>Senior Manager Support Services (HQ) and the terminal IT Managers of Durban Container Terminal, Maydon Wharf, Richards Bay, Cape Town, Saldanha, Port Elizabeth, Ngqura and East London.</i>

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.