



## EMPLOYER'S WORKS INFORMATION

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## SECTION 1

### 1 Description of the works

#### 1.1 Executive overview

The works that the Contractor is to perform involve repairs and maintenance of the Three phase induction squirrel cage, flameproof IRP Motors, which entail:

- Collection of the 10 x motors from Tarlton IRP sites to service provider workshop at once. Contractor takes full liability of the motors once they left TPL site. E.g., if the motors get stolen or damaged contractor to replace the motors:
- Stripping, Inspection and provide a detailed report for all motors. TPL to confirm findings from inspection at service provider's workshop before refurbishment of motors.

#### **Repair or overhaul of X01, X02, X05 and X06 50Hz 15KW 380 Volts motors:**

- Drive end bearing replacement type 6309-C3 x 4.
- Non drive end bearing replacement type 6209-Z-C3 x 4.
- Cleaning of stator and rotor x 4.
- Perform winding resistance testing x4
- Repair of windings if damaged x 4
- Varnishing of stator winding and rotor x 4.
- Assemble of motors x 4.
- Performance testing at service provider's workshop after overhauling x 4. TPL to witness the test of motors.
- Certify motors and issue flame proof certificate of compliance (COC) X4.
- Delivery of motors on site.
- Installation and commissioning of motors on site and Site acceptance certificate X 4.

#### **Repair or overhaul of Q01, Q02, and Q04 50Hz 37KW 380 Volts motors:**

- Drive end bearing replacement type 6314-C3 x 3.
- Non drive end bearing replacement type 6314-Z-C3 x 3.
- Cleaning of stator and rotor x 3.
- Perform winding test x 3.
- Repair of windings if damaged x 3.
- Varnishing of stator winding and rotor x 3.
- Assembly of motors x 3.
- Performance testing at service provider's workshop after overhauling x 3. TPL to witness the test of motors.
- Certify motors and issue flame proof certificate of compliance (COC) X3.
- Delivery of motors on site x 3.
- Installation and commissioning of motors on site and Site acceptance certificate x 3.

#### **Repair or overhaul of X07, and X08, 50Hz 75KW 380 Volts motors:**

- Drive end bearing replacement type 6309-C3 x 2.
- Non drive end bearing replacement type 6209-Z-C3 x 2.
- Cleaning of stator and rotor x 2.
- Perform winding test x 2.
- Repair of windings if damaged x 2
- Varnishing of stator winding and rotor x 2.
- Assembly of motors x 2.

- Performance testing at service provider's workshop after overhauling x 2. TPL to witness the test of motors.
- Certify motors and issue flame proof certificate of compliance (COC) X 2.
- Delivery of motors on site.
- Installation and commissioning of motors on site and Site acceptance certificate x 2.

**Repair or overhaul of X03 and X04, 50Hz 55KW 380 Volts motors:**

- Drive end bearing replacement type 6316-C3 x 2.
  - Non drive end bearing replacement type 6314-C3 x 2.
  - Cleaning of stator and rotor x 2.
  - Perform windings resistance test x 2.
  - Repair of windings if damaged x 2.
  - Varnishing of stator winding and rotor x 2.
  - Assembly of motors x 2.
  - Performance testing at service provider's workshop after overhauling x 2. TPL to witness the test of motor.
  - Certify motors and issue flame proof certificate of compliance (COC) X 2.
  - Delivery of motor on site.
  - Installation and commissioning of motors on site and Site acceptance certificate x 2.
- The contractor must provide an all-inclusive service and provide all spare parts where necessary.
  - The contractor is expected to complete the work within eight weeks of obtaining the motors.
  - Provide safety file.

*Table 1: List of TPL Tarlton IRP Motors*

L a b e l	F r e q u e n c y	C u r r e n t	S p e e d	P o w e r f a c t o r	P o w e r	S a p N o	V o l t a g e
4 3 X 0 5	5 0 H z	2 8 . 1 A	2 9 3 5 m i n'	0 . 8 9 C o s θ	1 5 K W	1 0 0 2 9 3 5 8	3 8 0 v o l t s
4 3 X 0 6	5 0 H z	2 8 . 1 A	2 9 5 3 m i ñ	0 . 8 9 C o s	1 5 K W	1 0 0 2 9 3 8	3 8 0 v o l t

				Θ		9	s
4 3 X 0 3	5 0 H z	9 8 . 3 A	1 4 7 5 m i ñ	0 . 9 1 C o s Θ	5 5 K W	1 0 0 2 9 5 0 8	3 8 0 v o l t s
4 3 X 0 4	5 0 H z	9 8 . 3 A	1 4 7 5 m i ñ	0 . 9 1 C o s Θ	5 5 K W	1 0 0 2 9 5 5 9	3 8 0 v o l t s
4 3 X 0 1	5 0 H z	2 8 . 1 A	2 9 3 5 m i ñ	0 . 8 9 C o s Θ	1 5 K W	1 0 0 2 9 2 4 1	3 8 0 v o l t s
4 3 X 0 2	5 0 H z	2 8 . 1 A	2 9 3 5 m i ñ	0 . 8 9 C o s Θ	1 5 K W	1 0 0 2 9 2 5 0	3 8 0 V o l t s
4 3 Q 0 1	5 0 H z	6 8 . 3 A	1 4 7 5 m i ñ	0 . 8 9 C o s Θ	3 7 K W	1 0 0 2 9 5 5 7	3 8 0 V o l t s
4 3 Q 0 3	5 0 H z	6 8 . 3 A	1 4 7 5 m i ñ	0 . 8 9 C o s Θ	3 7 K W	1 0 0 2 9 5 5 7	3 8 0 V o l t s
4 3 X	5 0 H	1 3 4	2 9 8	0 . 8	7 5 K	1 0 0	3 8 0

0 7	z	A	0 m i ñ	9 C o s Θ	W	2 9 2 6	V o l t s
4 3 X 0 8	5 0 H z	1 3 4 A	2 9 9 0 m i ñ	0 . 8 9 C o s Θ	7 5 K W	1 0 0 2 9 2 5 9	3 8 0 V o l t s

#### Deliverables:

The contractor must provide the following on completion of work:

- Test certificate (Flame proof certification) on completion of work and any other relevant job documents such as the Quality Control Plan and the Inspection Reports.

## 1.2 Employer's objectives

The Employer's objectives are:

- Restore the motors to its design specification.
- Increase efficiency and reliability of the Refractionator Plant operation.

#### Project Risk Factors:

- Adherence to Health, Safety and Environment. (Working in confined spaces, flammable liquid vapour)
- Maintain the shutdown schedule (minimise line interruptions)

## SECTION 2

## 2 Maintenance

### 2.1 Employer's Site entry and security control, permits, and site regulation.

#### 2.1.1. Requirements for Assessing TPL Tarlton NKP site

The *Contractor* needs to be screened first as the site is an NKP.

The following is needed from the *Contractor*:

1. Company CK number
2. CIPRO registration
3. Company Tax clearance
4. Copies of ID of directors
5. Fingerprints of directors (Use SAP 91) to be found at local SAPS. Original fingerprints must be submitted.
6. Copies of ID of employees who will be working on site.
7. Fingerprints of employees who will be working on site (Use SAP 91) to be found at local SAPS. Original fingerprints must be submitted.
8. *Contractor* to make a copy of the extra Departmental documents and take it to SAPS which prevents the

*Contractor from paying.*

Please take note that SSA takes 2 weeks for screening to take place once all required documentation has been submitted.

**2.1.2.** The Contractor complies with the following requirements of the Employer:

All individual entering or exiting the site will have to sign in and out in the primary and secondary access points on site and undergo a breathalyzer test. All vehicles entering or exiting the site will be subject to searches. All equipment (i.e. laptops) needs to be declared when entering and exiting the site.

**2.1.3.** Restrictions to access on Site, roads, walkways, and barricades.

Certain areas (site, roads, walkways and barricades) require minimum personal protective equipment, which is communicated through signage throughout the site, all contractor personnel must adhere to this rules. It is also imperative that the Contractor personnel wear fully visible identification tags.

**2.1.4.** The Contractor complies with the following requirements of the Employer:

All contractor personnel must undergo induction before conducting any work on site, wear the minimum required personal protective equipment within site (Flame retardant PPE, Safety goggles, safety gloves, safety boots) and adhere to all relevant signage within their working area as well as open a permit before conducting any work.

**2.1.5.** The Contractor keeps daily records of his people engaged on the Site and Working Areas (including Subcontractors) with access to such daily records available for inspection at all reasonable times.

**2.1.6.** Health and safety facilities on Site

The Contractor should be compliant with the Occupational Health and Safety Act. The Contractor must submit a completed and signed Safety File prior to commencement of installation work on site. The Contractor must also submit medicals of all Contractor employees that will be working on site to the Employer. The Contractor will provide a Safety Officer who will work closely with the Employer's Safety Representative.

## **2.2. Facilities, Equipment and Consumables provided by the contractor.**

**2.2.1.** Contractor's Equipment

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 available for inspection by the Employer at all reasonable times.

All equipment which the Contractor will be using during the course of conducting the work must come with the relevant certification according to the relevant standard.

## **2.3. Contractor's Employees restriction and constraints.**

**2.3.1.** Minimum requirements of people employed on the Site

All Contractor staff must be competent in the individual task that they will be performing. Certificates of such competency must be presented to the Employer prior to the commencement

of work. Medicals of all Contractor staff that will be working on site must also be made available to the Employer.

#### 2.3.2. Period of work Restriction

The Contractor will be limited to work between 07H30 and 16H00 weekdays and any over time or work on holidays will be negotiable. The Contractor is required to complete the work within two weeks.

## SECTION 3

### 3 Contractor constraints

#### 3.1 Cooperating and obtaining acceptance of others.

The Contractor will be required to work with the Employer staff in order to facilitate the transfer of skills. The Employer's internal employees whom the Contractor is required to coordinate with are:

- Transnet Pipelines technical staff which include electrical, mechanical artisans and Metering Control and Instrumentation artisans.
- The Refractionator Plant's Process Controllers.
- The Refractionator Plant's Safety Representative.
- Transnet Pipelines pollution control specialist.

#### 3.2 Planned management meetings and general meetings.

Transnet Pipelines will hold a Pre-work commencement meeting so as to clarify what is required of the Contractor over and above the Scope of work. During the course of the contract, management meeting will be held every Friday to ascertain the progress of the work. Toolbox talks will be held every morning for the duration of the work. Meetings of a specialist nature may be convened as specified by persons and at times and locations to suit the Parties, the nature and the progress of the works. Records of all meetings are to be submitted to the Employer by the person convening the meeting within five days of the meeting.

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.

#### 3.3 Drawings issued by the Employer.

If the Contractor should require any drawings, those drawings must be declared during the pre-work commencement meeting and those documents will be made available to the Contractor prior to commencement of work.

#### 3.4 Subcontracting.

Should the Contractor have any Subcontractors working on site, those Subcontractors will be subject to the same conditions as the Contractor. Where the Contractor employs a Subcontractor who constructs



or installs part of the works or who supplies Plant and Materials for incorporation into the works which involves a Subcontractor operating on the Site and/or Working Areas, then the Contractor ensures that any such Subcontractor complies with the regulations and restrictions set by the Employer

Site services, facilities and all residual requirements for the provision of facilities and all items of Equipment necessary for the Contractor to Provide the Works remains the responsibility of the Contractor.

## **SECTION 4**

### **4 Completion and correction of defects.**

The work is to be done by the Completion Date or before the Completion Date. The Contractor shall have done everything required to provide the Works. On completion of the maintenance, the Contractor must produce a report of all work done and certification of the equipment in which the work was done on as well as a craftsmanship certificate which provides guarantees of the work done on the equipment and other relevant end of job documentation.

#### **4.1. Take over procedure.**

Takeover will be at the same time as Completion date. The contractor must be present for the first week of running the plant. The contractor must do an inspection after completion and during the first week in which the plant will be running.

#### **4.2. Quality assurance requirements**

- 4.2.1. The Contractor submits his Quality Management System documents to the Employer, which include:
  - Quality Plan for the contract.
  - Quality Policy.
- 4.2.2. The Contractor develops and maintains a comprehensive register of documents that will be generated throughout the contract including all quality related documents as part of its Quality Plan.
- 4.2.3. The Quality Plan means the Contractor's statement, which outlines strategy, methodology, resources allocation, QA and Quality Control co-ordination activities to ensure that the works meet the standards stated in the Works Information.