PART C3: SCOPE OF SERVICE

Document reference	Inspection, Maintenance, Repair and Commissioning of the Gas Fired Heater	No of page
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EMPLOYER'S SERVICE INFORMATION

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GLOSSARY

AIA	Approved Inspection Authority
COC	Certificate of Conformity
CIPRO	Companies and Intellectually Property Registration Office
CK	Company Key number
CV	Curriculum Vitae
ID	Identification Document
IRP	Intermixture Refractionator Plant
NKP	National Key Point
OHSA	Occupational Health and Safety Act
PER	Pressure Equipment Regulations
PPE	Personal Protective Equipment
TPL	Transnet Pipelines
SAT	Site Acceptance Test
SAP	South African Policy forms 91
SAPS	South African Policy Service
SSA	State Security Agency
VAT	Value Added Tax

SECTION 1

1 Description of the works

1.1 Project background

The Intermixture Refractionator Plant (IRP) at Transnet Pipeline (TPL) Tarlton depot was commissioned during March and April of 2007 and is used to separate petrol/diesel intermixture generated through normal pipeline operation into petrol and diesel products.

The Refractionator Plant requires a shutdown every three years to carry out pressure vessel testing of the equipment. This is driven by the Pressure Equipment Regulations (PER) which state that pressure vessels must undergo inspection and pressure testing by an approved inspection authority every 36 months. During the shutdown period, there will also be an overhaul of all major equipment to minimise downtime of the plant.

The IRP has a gas fired heater that requires inspection, maintenance, repairs and pressure testing every three years. The *Contractor* that performs this work must be capable of inspecting, maintaining, and repairing the gas fired heater.

The *Employer's* objectives are:

Increase efficiency and reliability of the Intermixture Refractionator Plant operation.

1.2 Scope and deliverables

The works that the contractor is to perform involve a comprehensive inspection, maintenance, repairs, pressure testing and commissioning of the gas fired heater to improve efficiency and safety.

The work breakdown is as follows:

- **Site establishment**:
    - Site establishment (Including 1 x office container, power supply, Transportation of equipment and tools to site).
- **Site de establishment:**
    - De establishment (including 1 x office container, power supply, Transportation of equipment and Tools)
- **Scaffolding:**
    - Provision of scaffolding for the top section of the fired heat, dimensions of the top section, size diameter 2m, Height 10 m, volume 32m^3.
    - Delivery of scaffolding to site and erection.
    - Removal of scaffolding on site.

- **Stripping of the Fired Heater:**
    - Stripping of all Fired Heater equipment and store equipment on site laydown area**.**
- **Furnace Inspection:**
    - Inspection of stack damper blades and shaft. Check if they are within tolerance and correct position.
    - Correct stack damper blades and shaft tolerance and position, if required.
    - Correct if required.
    - Check damper bearings and put grease for easy movement.
    - Replace damper bearings if required.
    - Check stack instrument connections and correct if required.
    - Check for spalling on stack refractory.
    - Repair stack refractory if required.
    - Check the stack steel structure if it still intact (detailed visual inspection on the external section).
- **Convection section:**
    - Inspect and clean scale deposit build up on the extended surface of Tubes.
    - Inspect and check the condition of the refractory on the convection section.
    - Repair convection refractory if required.
    - Remove header box panel and check condition of the refractory at the doors.
    - Repair refractory at the doors if required.
    - Check condition of convection sealing sleeves and advice.
    - Replace convection sealing sleeves if required.
- **Radiant section:**
    - Explosion doors – handles, check movement and sealing.
    - Explosion doors - Repair/ correct if required.

- Observation doors – check movement, closing and service all the moving part (e.g., put oil and reinstate to correct working conditions).
- Radiant section refractory – check the condition of the refractory.
- Radiant section refractory – repair if required.
- Check the condition of four radiant sealing sleeves and advice.
- Replace radiant sealing sleeves if required.

- **Burners:**
  - Remove all four-burner front plate for detailed inspection.
  - Primary air register - Check and clean primary air register.
  - Regent Tiles – inspect all four regent tiles.
  - Regent tiles – repair regent tiles if required.
  - Main gas tip - remove all sixteen main gas tip and ports check for wear and size.
  - Main gas tip – Replace main gas tip if required.
  - Pilot assemble – remove all four pilot assembles and the spare assemble, clean and recondition.
  - Pilot assemble- replace pilot tip assemble if required.
  - Burner Tiles – inspect all four burner tiles and verify for acceptance.
  - Burner tiles – fix burner tiles if required.
  - Burner wind boxes – inspect wind box internally and check secondary air registers.
  - Burner wind box – repair internal acoustic lining if required.
  - Damper assemblies – all damper assemblies must be oiled and verified for easy movement.
  - Final assemble – assemble the burner front plates, install and aligned.
  - Furnace coil – Inspection of furnace coil to check for any sign of flame impingements.
  - **Tube thickness test – to be done by TPL AIA.**
  - Pressure test – pressure test the complete set of tube coils.

- Gas strainer – remove gas and diesel strainers, inspect, and clean.
- Gas strainer – replace gas strainer if required.
- Check the condition of the eight-extension rod for ionisation box and advice.
- Replace the extension rod for ionisation box if required.
- Check condition of the eight-transition rod assembly and advice.
- Replace transition rod assembly if required.
- Check condition of the eight ignition and flame rod combination and advice.
- Replace ignition and flame rod combination if required.

- **Electrical and Instrumentation:**
  - Replace blue field instruments cable – TPL to free issue the cable.
  - Thermocouples – check the condition of 9 x thermocouples.
  - Thermocouples – replace damaged thermocouples.
  - Check the condition of manometer advice.
  - Replace manometer if required.
  - Replace the manometer and other instrumentation devices if necessary.
- **Installation of Fired Heater equipment/Assembly of the Fired Heater:**
  - Installation of all fired heater equipment stored on site laydown area.
- The *Contractor* to supply an integrity report in relation to the condition of the fired heater at the Refractionator.
- Replace sleeves and gaskets on interconnected piping if required, TPL to free issue.
- The piping to the fired heater is long, insulated and welded and that make it difficult to access it to launch bullets or pigs for cleaning. The *Contractor* needs to cut the piping at proximity of the fired heater, introduce flanges, pressure test, for easy access for cleaning, the contractor needs to know the position of the flanges. This will further be discussed during compulsory tender briefing on site and site inspection.
- Cleaning of the fired heater piping will be done by TPL cleaning contractor.
- The *Contractor* to inspect the piping insulation and replace if necessary.

- TPL will provide an AIA for inspections and to witness the pressure testing of the fired heater radiant and convection tubes. *Contractor* to issue a 5 days' notice to TPL when the AIA is required to witness pressure testing.
- TPL will provide a fire standby.
- The *Contractor* must provide an all-inclusive service, Non-destructive examination of pressure equipment, materials, consumables, and other tools required to complete the work and a safety officer to monitor safety during work execution on site.
- The *Contractor* to complete the work within 7 weeks.
- The *Contractor* must be compliant with the Occupation, Health, and Safety Act.

Refer to Annexures C, D, E, F and G for the Fired heater specifications

- **Deliverables:**
  The *Contractor* must provide the following on completion of work:
  - Hydrotest certificates during testing signed by TPL AIA.
  - Integrity report as proof that the fired heater is still within the applicable requirements (Report to include but not limited to inspections conducted, findings, repair works done, all parts that have been replaced and their specifications, tubes thickness test results, pressure testing results and recommendations).

SECTION 2

2 Access and control

2.1 Security requirements at TPL Tarlton NKP site

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

The following to be submitted by 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.

2.2 *Employer's* Site entry and security control, permits, and site regulation.

2.1.1. 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 breathalyser test. All vehicles entering or exiting the site will be subject to searches. All equipment (i.e., laptops) to be declared at the gate (security) when entering and exiting the site.

2.1.2. 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 these rules. It is also imperative that the *Contractor* personnel wear fully visible identification tags.

2.1.3. 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 (flame retardant overalls, safety hat, safety boots) within site, and adhere to all relevant signage within their working area as well as open a permit before conducting any work.

2.1.4. 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.

2.1.5. 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 work. 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. Working hours on site

The *Contractor* will work between 07H30 and 16H00 weekdays and any over time or work on holidays will be negotiable. The *Contractor* to complete the work within 7 weeks.

SECTION 3

3 Quality Assurance

3.1. Quality requirements.

The *Contractor* will have to submit all necessary quality documentation to the *Employer* prior to the start of the work, the documentation to include:

- Quality policy.
- Quality Control Plan.
- Procedure for pressure testing of the fired heater.

SECTION 4

4. Invoicing

When the *Employer* certifies payment following an assessment date, the *Contractor* complies with the *Employer's* procedure for invoice submission:

- The invoice must correspond to the *Employer's* assessment of the amount due to the *Contractor* as stated in the payment certificate.
- Invoices must be submitted by the 18th of the month.
- The invoice states the following:
  - The amount paid to date,
  - Amount for payment (excluding VAT),
  - VAT amount,
  - VAT number for Transnet and *Contractor*
  - Amount for payment (including VAT),
  - Any interest payable,
  - A statement is to accompany each invoice,
  - All signed and approved site daily diaries,
- Proof of invoice is to be hand delivered/ emailed on the 18th of the assessment month.
- Invoices submitted by hand are presented to:

  Invoices TRANSNET PIPELINES

  202 ANTON LEMBEDE STREET

  Durban

  4001

  For the attention of The Contract Manager.
- The invoice is presented as original.
- The *Contractor* ensures that the *Employer* has his correct banking information to make the electronic payment transfer.

- 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.
- The *Employer* deducts any amount owed by the *Contractor* to the *Employer* from any amount payable by the *Employer* to the *Contractor.*
- Invoices are payable at the end of the following month of submission provided that all backup has been provided and queries being addressed by the *Contractor* by the 25th of the assessment month.

SECTION 5

5. Health and Safety Requirements

The Health and Safety requirements includes but not limited to the following:

- PPE requirement, *Contractor* shall allow:
  - Steel cap boots.
  - Flame retardant full length overall, either 1 piece or 2 pieces.
  - Hard hat.
  - Safety glasses.
  - Ear protection.
  - Safety gloves.
- The *Contractor* will furnish the *Employer* with the required Health and Safety documentation prior to the commencement of work on site. Once the *Contractor's* Health & Safety file is approved a site induction will be conducted by the *Employer* then only will the *Contractor* be permitted to commence work.
- The SHE file must include but not limited the following documents:
  - A valid letter of Good Standing with the works man compensation.
  - And proof of relevant insurance to carry out work.
  - *Contractor* Health and Safety Plan correlating with the *Employer* Health, and Safety Guidelines (HAS - GL – 0001) submitted and approved.
  - Copies of the *Employer* and *Contractor's* Health, Safety & Environment Policies.
  - Mandatory agreement as per section 37.2 of the OSH ACT. Act 85 of 1993 and CR 5.1 (K).
  - Employee Induction packs shall include the following documents:
    - Employee scope of work.
    - Proof of site-specific induction (*Contractor*).
    - Copy of ID documents.
    - Legal letter of appointment.

- Abbreviated CV for the management and legal appointees.
- Proof of competence.
- Valid entry medical certificate of fitness done by an Occupational Health Practitioner.
- Baseline Risk Assessment indicating the full scope of work and risk profile.

- Copy of equipment registered to be used with copy of each item's inspection checklist.
- Copy of nominated responsible person to conduct monthly inspections and proof of their competency.
- Organogram of reporting structure: This document must provide all persons appointed in terms of OHS Act and Regulations (85 of 1993) including contact details and all other statutory registers as required by the OHS Act No. 85 of 1993.
- The *Contractor* shall adhere to the Legislation, all relevant Regulation and the *Employer* Health and Safety Guidelines (HAS-GL-001) will be issued at Tender stage.