



**TRANSNET LIMITED**

(REGISTRATION NO 1990/000900/30)  
trading as TRANSNET ENGINEERING  
(hereinafter referred to as TE)

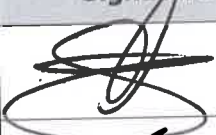
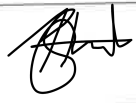
**TECHNICAL SPECIFICATION**

**TE SRX/LOCOS SLD/Upgrade of 80T Cranes Diesel Locos**

**Project Name:** Upgrade of 80T Cranes in Diesel Workshop

**Scope of Work Title:** Technical specification for the upgrade of various cranes in the TE diesel locomotive workshop at Salkor Plant, Saldanha.

**Document Reviewers and Approvals**

|                           | Name              | Designation                        | Signature                                                                            | Date       |
|---------------------------|-------------------|------------------------------------|--------------------------------------------------------------------------------------|------------|
| Prepared By:              | Sibonelo Msizazwe | Project Manager                    |  | 17/09/2024 |
| Reviewed by:              | Anton van Blerk   | Maintenance Supervisor: PEMM       |  |            |
| Reviewed by:              | Ndafika Baleni    | Risk Manager                       | M.V. Mathews                                                                         | 25/09/2024 |
| Reviewed and approved by: | Timothy Jonas     | Local Business Manager: Locos SLD  |  | 25/09/2024 |
| Reviewed and approved by: | Haroun Shaik      | Plant Engineer – Ore line Corridor |  | 25/09/2024 |

## Table of Contents

|                                                                         |                              |           |
|-------------------------------------------------------------------------|------------------------------|-----------|
| <b>AMENDMENT HISTORY</b>                                                | ERROR! BOOKMARK NOT DEFINED. |           |
| <b>PART A – GENERAL &amp; SPECIAL SPECIFICATIONS</b>                    |                              | <b>3</b>  |
| A1. Introduction                                                        |                              | 3         |
| A2. Problem Definition                                                  |                              | 3         |
| A3. Site Location                                                       |                              | 3         |
| A4. Definitions                                                         |                              | 4         |
| A5. Guarantee                                                           |                              | 4         |
| A6. Inspection Of Works                                                 |                              | 4         |
| A7. Site Records                                                        |                              | 4         |
| A8. Access To Site                                                      |                              | 4         |
| A9. Materials Found On Site                                             |                              | 4         |
| A10. Working Outside Normal Working Hours                               |                              | 5         |
| A11. Escalation                                                         |                              | 5         |
| A12. Payment                                                            |                              | 5         |
| A13. Safety Precautions                                                 |                              | 5         |
| A14. CIDB And Other Requirements                                        |                              | 5         |
| A15. Health And Safety Requirements                                     |                              | 6         |
| A16. SANS And Regulatory Requirements                                   |                              | 6         |
| A17. To Be Supplied By The Contractor                                   |                              | 6         |
| A18. Attendance To Progress And Technical Meetings                      |                              | 6         |
| <b>PART B – TECHNICAL SPECIFICATIONS</b>                                |                              | <b>7</b>  |
| B1. Specifications                                                      |                              | 7         |
| B2. Scope Of Work                                                       |                              | 7         |
| B2.3.1 Steel Girders Corrosion Treatment – Two (2) X 80 Ton Abus Cranes |                              | 9         |
| B2.3.6 Gantry Alignment Locomotive Bay Gantry                           |                              |           |
| <b>PART C – SCHEDULE OF RATES AND QUANTITIES</b>                        | ERROR! BOOKMARK NOT DEFINED. |           |
| C1. Pre-Amble                                                           | ERROR! BOOKMARK NOT DEFINED. |           |
| C2. Schedule Of Rates                                                   | ERROR! BOOKMARK NOT DEFINED. |           |
| <b>ANNEXURE A – HEALTH AND SAFETY SPECIFICATIONS</b>                    |                              | <b>11</b> |

## **PART A**

### **GENERAL & SPECIAL CONDITIONS**

#### **A1. Introduction**

The Locomotive Business – Saldanha, provides a 24/7 maintenance support function to TFR on the Iron-Ore corridor locomotive fleet for both Class 43 diesel and Class 15E electrical locos. It is imperative that the stringent reliability and availability targets for TE are met at all times to achieve overall Transnet tonnage movement targets.

There are 2 x 80-ton overhead hoist cranes installed at the Diesel Locomotive workshop spanning roads 17, 18 and 19. The cranes provide the Locomotive business with the required capacity to conduct tandem daily lifting operations of locomotive bodies, to conduct bogie and wheel change outs to the locomotive fleet, and various other lifting operations.

The workshop is also equipped with 2 x 20/5-ton cranes (spanning roads 19A and 19B) and 1 x 70/10ton crane (spanning roads 17,18,19), which are used for general lifting requirements of components from locomotives.

#### **A2. Problem Definition**

##### **2 x 80 Ton Cranes:**

The cranes are in daily operation and are in critical need of upgrading to extend the lifespan of the equipment. Tandem lifting operations has become problematic for the business as result of faulty electrical units. This adversely affects the speeds of the cranes when hoisting/lowering, causing the load to move unevenly and is a serious safety hazard.

There is also evidence of surface rust formations on the main girders. Left unattended, such rust formation can further penetrate the steel leading to the deterioration of structural integrity with potential disastrous consequences.

##### **Long Travel Tracks:**

The alignment of long travels tracks in these workshops need to be laser aligned checked and re-aligned as required to ensure accurate alignment with allowed tolerances.

The cranes in this environment are in daily operation. In recent years the cranes are frequently requiring maintenance repairs due to breakdowns. Such breakdowns negatively impact on production efficiencies and poses safety risks to both employees and Transnet assets.

#### **A3. Site location**

This site where the cranes are located is at TE's Locomotive Business, Diesel Workshop at Salkor Plant. Orex Road, between Vredenburg and Saldanha, Western Cape Province.

#### **A4. Definitions**

|                        |                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------|
| <b>TE</b>              | Transnet Engineering                                                                          |
| <b>Manager</b>         | The responsible person appointed by TE manage the contract in the capacity of Project Manager |
| <b>Project Manager</b> | The responsible person appointed by TE manage the contract in the capacity of Project Manager |
| <b>Tenderer</b>        | The entity preparing and submitting a tender to TE                                            |
| <b>Contractor</b>      | The entity awarded the business by TE to perform the defined scope of work                    |
| <b>Employer</b>        | Transnet Engineering                                                                          |

#### **A5. Guarantee**

All workmanship and material shall be guaranteed for a period of 12 (twelve) months, from the date of completion of work.

#### **A6. Inspection of works**

- a) No work shall be covered up or put out of view without the approval of the Project Manager. The Contractor shall afford full opportunity for the Project Manager to examine and measure any work.
- b) The Contractor shall give due notice to the Project Manager whenever any such work of formations is or are ready or about to be ready for examination. The Project Manager shall, without unreasonable delay, unless he considers it necessary and advises the Contractor accordingly, examine and or measuring such work as required.

#### **A7. Site records:**

- a) The Contractor shall provide to the Project Manager a detail plan of how he intends to do the work and this plan must be to the requirements of the operation of Transnet workshop with minor disruptions as no delays must be allowed in this regard.
- b) The programme must be agreed to (in the site instruction book) before any work will be allowed to commence on the workshops, per se. The programme can be in a form of a Gantt (bar) chart and will be used as a guide to measure progress of the work.

#### **A8. Access to site**

The areas are restricted and the contractor must ensure he complies with the regulations of Transnet in every way. The Contractor and/or any sub-contractors shall be required to apply for permission to enter the restricted area in writing. A list of workmen shall be given to the Project Manager to arrange for the necessary permits. 48 Hours minimum notice is necessary for the processing these permits. This includes changes to staff during the contract period.

#### **A9. Materials found on site**

No material that is lying on the site (other than that as specified in this document) or any of Transnet's property may be removed or used (even if deemed as scrap) by the contractor.

**A10. Working outside normal working hours**

The normal working hours are between 07:00 and 15:30 Mondays to Fridays. If it is required to work outside the stated normal working hours the Contractor must obtain written permission at least 48 hours before such work needs to be undertaken. Transnet will not unreasonably withhold permission; however, the Contractor may have to pay for Transnet's supervisory personnel, should this be required.

**A11. Escalation**

The contract concluded with the successful tenderer will not make provision for compensation in respect of increased costs. The tenderer must allow in his fixed price for any increased costs, which he may encounter during the contract period or such extended period as agreed upon by both parties.

**A12. Payment**

Payment shall be made in accordance with the contractual payment terms, and in accordance with the Schedule of Rates and Prices as detailed in the Transnet procurement documentation as approved and issued to market. Only work successfully completed should be reviewed for payment approval or as otherwise contractually agreed to and approved in accordance with Transnet's Procurement Policies and Procedures.

**A13. Safety Precautions**

(a) OHS Act 85 of 1993

The contractor shall comply with the Occupational Health & Safety Act, 1993 (Act 85 of 1993). The Health and Safety requirements as set out by TRE and attached to this specification must be adhered to.

(b) Environment

The Contractor shall, at all times, comply with the statutes that prohibit pollution of any kind. These statutes are enacted in the following legislation.

- The National Environmental Management Act, 107/1998.
- The Environmental Conservation Act, 73/1989; and
- The National Water Act, 36/1998.

The Contractor shall appoint a responsible person to ensure that no incident shall occur on site that could cause pollution. Where the Contractor was negligent and caused any form of pollution the damage shall be rectified at the Contractors cost.

**A14. CIDB (Construction Industry Development Board) and Other Requirements:**

It is a requirement that only suitably experienced contractors be engaged to execute the scope of work who are:

- a) Registered with the CIDB with a **minimum grading of 4ME AND ABOVE** (mechanical engineering)
- b) Companies with specific experience in crane lifting equipment (LME)
- c) Are able to provide a list of similar works performed with contactable references.
- d) Have a valid TAX clearance certificate.
- e) Are registered for COID.

**A15. Health and Safety Requirements**

- a) All work to be performed shall be done in accordance with OHS ACT 85 of 1993 (as updated).
- b) Contractors are to adhere to Transnet's OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENTAL SPECIFICATIONS (refer to Annexure A).
- c) An 'Agreement with Mandatary' (Section 37 Agreement) will be concluded with the appointed Contractor.
- d) Prior to on works, it will be a requirement that the Contractor is to submit a complete health and safety file, specific to the work to be performed on site, to TE's Risk Manager for review and acceptance.
- e) Upon approval and acceptance by TE of the health and safety file, all on site Contractor staff must undergo safety induction training as arranged by TE. Such induction training will take approximately 1 - 2 hours and Contractor is to allow for this in his programme. All Contractors' staff who will be performing work on the site will be required to attend. Any additional persons brought onto site after initial safety induction was conducted, will also first have to undergo the aforesaid safety induction training.
- f) All sub-contractors appointed by the Contractor, will also have to submit their own health and safety files for review and acceptance as per procedure detailed in clauses (d) and (c) above.

**A16. SANS and Regulatory Requirements**

All design, construction and any associated works are to be done in strict accordance with relevant SANS specifications and any other regulatory requirements as may be applicable to the type and nature of the work to be performed in executing the scope of works.

**A17. To be supplied by the contractor**

The appointed contractor / supplier is responsible to provide for all design, fabrication, manufacturing, labour, transport, equipment, materials as is required to effectively provide the specified deliverables.

**A18. Attendance to progress and technical meetings:**

The appointed contractor / supplier shall be called upon to attend meetings on the site and/or at TE's offices in Salt River to discuss the progress and technical aspects of the WORKS with the Transnet's representatives. Allowance for such meetings is to be made in tender pricing as no additional claims or variations will be entertained in this regard for payment.

## **PART B**

### **TECHNICAL SPECIFICATIONS**

Note:

1. For further descriptions of materials to be used and methods to be adopted, the Contractor is referred to the various Codes and Standards, where relevant, and this shall be deemed to form part of the descriptions of any items in the following Specification. Except where any specification provision in a description in this specification is at variance with the above, in which case the specific provision is this Specification description shall apply.
2. Where trade names and catalogue references have been used in these Specifications to specify a product, Tenderers must tender on that particular product specified. In addition, Tenderers must tender on the required and scope of work specified and must adhere to at least the minimum specific requirements stated. The accepted tenderer (i.e. Contractor) may, after obtaining written authority from the Project Manager, use an alternative product or design.
3. Where such written authority is given by the Project Manager at the request of the Contractor, for the contractor's convenience, all additional costs involved will be done for the Contractor's account. In the event of a less expensive product or design being used, a variation order reflecting the saving in cost will be issued.

#### **B1. SPECIFICATIONS**

This section must be read in conjunction with all other issued documentation in this regard, the General Conditions of Contract, General & Special Conditions (Part A), the drawings and bill of quantities in order to derive at a contract price as asked for in the Schedule of Rates and Prices.

#### **B2. SCOPE OF WORK:**

The work shall be carried out in accordance with this defined scope of work and specific requirements stated.

##### **B2.1 Identification of cranes to be upgraded:**

|   | <b>Crane Description</b>  | <b>Type</b> | <b>Asset No.</b> | <b>Qty</b> |
|---|---------------------------|-------------|------------------|------------|
| 1 | 80/10-ton overhead gantry | ABUS        | 28039835         | 1          |
| 2 | 80/10-ton overhead gantry | ABUS        | 28039836         | 1          |

##### **B2.2 General:**

2.2.1 The method of upgrade will be final calculated and confirmed prior to the upgrade and signed-off and certified by a Professional Engineer, as appointed by the service provider.

2.2.2 The defined scope of works and technical specifications are general guidelines to be adhered to in finalizing calculations and designs for the upgrade. It is to be noted that specific and final design values and calculations are to be determined by the appointed service provider and necessary adjustments made to suit ensuring the final installation is complete and fully functional for the intended use.

2.2.3 The specified scope of work is to include for all design, manufacture, fabrication, supply, deliver, install, commissioning, labour, transport and any other item required to execute the works. All material and equipment items required, whether expressly defined or not, but required to make upgrade complete is deemed to be included in scope and pricing. Scope of work also includes for site establishment, de-establishment, delivery and off-loading works on site. Works also includes for all removal of existing items on cranes to be removed in order to execute the required upgrade works, and stockpiling of stripped items to the PEMM yard located at Salkor Plant (approximately 1km from site).

2.2.4 Liaison with other parties:

Scope of works will include for liaison works required between supplier and TE representatives, including attendance of technical and progress meetings as deemed necessary by TE during the execution of the scope of works.

2.2.5 Test Weights:

(a) TE have the following weights available at it maintenance workshop, located approximately 1km from the work site:

| Weight Size                  | Qty |
|------------------------------|-----|
| Ten (10) ton                 | 4   |
| Five (5) ton                 | 2   |
| Two (2) ton                  | 2   |
| One (1) ton                  | 1   |
| Five hundred (500) kg        | 1   |
| Two hundred & Fifty (250) kg | 1   |
| Fifty (50) kg                | 2   |
| Twenty (20) kg               | 9   |

- (b) The appointed contractor will have access the use the available weights.
- (c) The transport from the storage site to the worksite will be the responsibility of the appointed contractor.
- (d) Any shortfall in weights required by contractor to successfully conduct required load and proof load testing must be provided by the appointed contractor.

## **B2.3 Scope of work definition:**

### **B2.3.1 Steel Girders Corrosion Treatment – Two (2) x 80 ton ABUS Cranes**

*Note: The following defined scope is to be applied to two (2) cranes.*

| <b>Technical Requirements – Steel Girders and Crab Units Corrosion Treatment for two (2) x 80 ton ABUS cranes</b> |                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3.1.1                                                                                                           | Inspect steel girders for current condition and provide report with photographic evidence to TE on findings and proposed remedial actions, corrosion protective measures to be implemented and paint specifications for final paint coatings to be applied.<br><br>Proposed corrosive protection and paint to be applicable to West Coast environment being in proximity of less than 5km from the sea. |
| 2.3.1.2                                                                                                           | Disconnect, Remove and Paint Crab Units                                                                                                                                                                                                                                                                                                                                                                 |
| 2.3.1.3                                                                                                           | Sandblast and/or wire brush clean and prepare steel girders for repair and respray.                                                                                                                                                                                                                                                                                                                     |
| 2.3.1.4                                                                                                           | Repair and respray steel girders with suitable corrosion protective coatings and final paint coatings.                                                                                                                                                                                                                                                                                                  |
| 2.3.1.5                                                                                                           | Corrosive protection and paint types to be applied to be approved by TE Plant Engineer before spray work commences. Proposed applications to be in accordance with relevant SANS specifications for corrosion protection and paint work to cranes.                                                                                                                                                      |
| 2.3.1.6                                                                                                           | Application of corrosive protection and paint coats to be inspected and approved by Contractor's Quality Officer for each coat application and proof of application sign-off presented to TE as part of document handover pack.                                                                                                                                                                         |
| 2.3.1.7                                                                                                           | Guarantee for corrosive protection and paint applications to be provided.                                                                                                                                                                                                                                                                                                                               |
| 2.3.1.8                                                                                                           | Contractor to determine whether works can be done in-situ or off-site and pricing to allow for determined option accordingly. Pricing to include for all plant and/or scaffolding as required by contractor to conduct the works. Priced option to be clearly specified in pricing.                                                                                                                     |

**B2.3.2 80/10-ton ABUS (Asset no. 28039835 & 28039836 / ABUS cranes)**

*Note: The following defined scope is to be applied to two (2) cranes.*

**Technical Requirements – Two (2) x 80/10-ton cranes**

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3.2.1  | Compile upgrade design c/w engineering calculations and certification by Professional Engineer                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.3.2.2  | New Panel Enclosures complete as well as glands & accessories                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.3.2.3  | Main Hoist VSD with Braking Unit & Braking Resistor                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2.3.2.4  | Auxiliary Hoist VSD with Braking Unit & Resistor                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2.3.2.5  | Synchronization Device and Radio Link                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.3.2.6  | Long Travel VSD with Braking Unit & Resistor                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2.3.2.7  | Cross Travel VSD with braking resistor                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2.3.2.8  | Connect and commission all crane motors, brakes, electrics and safety devices                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.3.2.9  | Main protection Panel complete with CTX, CB's, OL's and Main Contactor                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2.3.2.10 | Main control panel C/W interphase relays, panel accessories and all glands                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2.3.2.11 | Joystick radio remote controller with tandem operation for all crane functions                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.3.2.12 | Four (4) x 200W High bay LED Lights equal to old 400W HPS Lights per Crane                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2.3.2.13 | Protected Power Supply for High Bay Lights                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2.3.2.14 | Lay Panels out, mount components & wire panels including panel accessories, numbers etc                                                                                                                                                                                                                                                                                                                                                                                         |
| 2.3.2.15 | Mark Cables, Disconnect & Strip out exiting electrical panels and lower to ground                                                                                                                                                                                                                                                                                                                                                                                               |
| 2.3.2.16 | Rig New Panels to crane and mount panels suite cable connections / positions                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2.3.2.17 | Wire and connect new panels to cables including terminals, terminations and lugs                                                                                                                                                                                                                                                                                                                                                                                                |
| 2.3.2.18 | Commission crane and test all functions, safety devices, limits and directions                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.3.2.19 | Supply and install new data plates, SWL signs and information as per statutory requirements                                                                                                                                                                                                                                                                                                                                                                                     |
| 2.3.2.20 | Provide one (1) set electronic and three (3) sets hard copies of wiring diagrams, manuals and certificates                                                                                                                                                                                                                                                                                                                                                                      |
| 2.3.2.21 | <ul style="list-style-type: none"> <li>Carry out load testing and proof load test with test weights. Test weights available from TE are defined in clause 'B2.2 (2.2.5)'.</li> <li>Transport requirements of weights from storage area to work site and return to storage upon completion is responsibility of appointed contractor.</li> <li>Any shortfall in weights required to conduct testing to be provided by appointed contractor as part of scope of works.</li> </ul> |
| 2.3.2.22 | Issuing of crane test certification as per statutory requirements                                                                                                                                                                                                                                                                                                                                                                                                               |

## ANNEXURE A

### OCCUPATIONAL HEALTH, SAFETY and ENVIRONMENTAL SPECIFICATIONS SALDANHA

#### 1. **INTRODUCTION**

This is a generic SHE Specification, which shall apply for all contract work within Transnet Engineering (TE) Saldanha.

Transnet Engineering requires/demands a high Safety Standard from its employees and expects that this standard be maintained by outside Contractors working within Transnet Engineering.

This specification shall form part of the tender document specification and must be read and used in conjunction with the technical and tender specifications. All requirements contained in this document must be adhered to at all times while executing the work.

These safety rules are not intended to restrict the duties of the Contractor or to relieve them of their legal obligations to ensure safe working.

#### 2. **ENTRY TO THE PREMISES**

On arrival at Transnet Engineering, the Contractor's employees must report to security. Ensure all employees have valid Permit cards. Before any contract work is started, the contractor's employees must attend SHE induction presented by TE Safety and Risk Department. The contractor must report daily to the contract manager for the specific contract before work commences.

#### 3. **STATUTORY OBLIGATION**

The Contractor will ensure that all work is carried out in accordance with:

- The Occupational Health and Safety Act 85 of 1993.
- The Compensation for occupational injury and Disease Act 135 of 1993
- The South African National Standard for the wiring of premises. (SANS 10142-1: 2003)
- Specific acceptance of these rules implies that the Contractor guarantees that the Company

has

no liability in terms of Chapter 9 of the COID Act.

- Any other applicable legislation

#### 4. **SHE File**

Before any work can commence a SHE File must be presented. It remains the responsibility of each contractor to ensure compliance with all relevant Occupational Health and Safety Legislation. The following is a guideline (but not restricted to) of the contents (not all items are applicable to all contractors) of a SHE file to be presented to TE before work may commence:

##### a. Risk Assessment

The Risk Assessment must include all hazards, risks and control measures for the contractor's activities and should separately specify:

- Contractors activities
- TRE Activities

TRE risks that should be considered (but not limited too):

|   |                                             |    |                                                                                                                       |
|---|---------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------|
| 1 | Crossing of railway lines                   | 7  | Overhead crane movement                                                                                               |
| 2 | Working in-between rails                    | 8  | Overhead High Voltage electrical lines                                                                                |
| 3 | Using ladders                               | 9  | Commodities inside wagons                                                                                             |
| 4 | Forklift movement                           | 10 | Snakes, ticks etc.                                                                                                    |
| 5 | Noise                                       | 11 | Welding, cutting and other hot work in workshops                                                                      |
| 6 | Shunting & other movements on railway lines | 12 | Working at heights (contractors may only work on heights after all legal requirements are met and TE gave permission) |

b. Letter of good standing by COID Commissioner

c. Work Procedures

d. Safe Operation Procedures (SOP) for all operational activities

- Fall protection plan (if applicable)
- SOP' for all activities
- SOP for rail protection (in conjunction with TE)

e. SHE Plan that explains how the following risks will be managed (must include but not limited to):

|    |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Lock out procedures                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2  | Machinery guards, protecting and fencing        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3  | Scaffolding, ladders, tools etc.                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4  | Cranes, vehicles and lifting gear               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5  | Confinement to working areas                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6  | Inspection registers                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7  | Excavations                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8  | Working at heights                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 9  | Transport on site                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 10 | Services and operating processes                | <ul style="list-style-type: none"> <li>• No contractors to be transported in back of LDV's</li> <li>• No overloading of passenger areas of LDV's</li> <li>• Where any work to be done by Contractors is connected with or likely to affect any operating process or machinery, or any services to same, the written permission of the responsible person must be obtained before such work is commenced.</li> <li>• The contractor shall not couple up to any service i.e. LP Gas, without previous arrangement having been made by the responsible person.</li> <li>• Permission must be obtained from the responsible person before equipment is connected to the electricity supply.</li> </ul> |
| 11 | Sub-Contractors                                 | <ul style="list-style-type: none"> <li>• List of subcontractors</li> <li>• SHE files of all sub-contractors</li> <li>• Induction by TE of all sub-contractors</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 12 | Roads and Thoroughfares                         | <ul style="list-style-type: none"> <li>• The Contractor's employees shall use the recognized roads and walkways within Transnet Rail Engineering</li> <li>• Traffic signs must be obeyed, and no vehicle shall be driven at a speed exceeding 30 km/h. The contractor must take cognizance of road rail crossings and shunting activities.</li> </ul>                                                                                                                                                                                                                                                                                                                                              |
| 13 | Accident/incident reporting and investigation   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 14 | First Aid                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 15 | Fire Prevention/Storage of Flammable Substances |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 16 | Occupational Health and Hygiene on site         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 17 | Housekeeping                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 18 | Rail safety                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 19 | Waste and environmental management              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 20 | Internal training and safety talks              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**TECHNICAL SPECIFICATION**  
**TE SRX/LOCOS SLD/Upgrade of Crane Diesel Locos**

|    |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 21 | The following Medicals according to risks (but not limited too): | <ul style="list-style-type: none"> <li>• Vision screening</li> <li>• Hearing test</li> <li>• Lung function test</li> <li>• Fit to work on heights</li> <li>• Drivers medical</li> <li>• Lifting equipment medicals</li> <li>• Asbestos (X-Rays) – if applicable</li> <li>• Biological Monitoring (If applicable)</li> </ul>                                                                                                                                                                                                                                                                |
| 22 | Intoxication                                                     | Nobody – being in a state of intoxication or any other condition resulting in his incapacity to control himself or persons under command is or will be allowed on the premises of the company.                                                                                                                                                                                                                                                                                                                                                                                             |
| 23 | PPE                                                              | <ul style="list-style-type: none"> <li>• PPE required on TE sites at all times: <ul style="list-style-type: none"> <li>○ Reflective vests</li> <li>○ Safety Boots</li> <li>○ Hearing protection (if applicable)</li> <li>○ Fall protection equipment (if applicable)</li> <li>○ Respirators (if applicable)</li> </ul> </li> <li>• PPE required by contractor: <ul style="list-style-type: none"> <li>○ The contractor must assess PPE requirements according to Risk Assessment to protect employees for specific operational risks of the contractor's activities</li> </ul> </li> </ul> |