PART C3: SCOPE OF WORK

DOCUMENTATION DISTRIBUTION, REVISION AND APPROVAL HISTORY

DOCUMENT	REV	DISTRIBUTION	PREPARED BY	APPROVED BY
Employer's Works Information	02	Owner Approval		

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C3.1 *EMPLOYER'S* WORKS INFORMATION

Contents

SECTION 1

1 Description of the *works*

1.1 Executive overview

Transnet Port Terminals currently uses diesel to support its operations, which includes dry bulk and break-bulk containers. The equipment that uses diesel includes ship loader cranes, reach stackers, rubber tyre gantries (RTG), reefers, haulers, pay loaders, dumper trucks, back actors, BOB CATS, brooms, sweepers, forklifts, transport buses, double cab vans, cars, generators etc. TPT has fuel facilities across all the terminals to service the equipment. The Fuel Facilities are now smaller compared to fleet size and the increased diesel demand, the Fuel Facilities are now old and have become non-compliant to Occupational Health & Safety Act, South African National Standards (SANS) and National Environment Management Act (NEMA).

1.2 *Employer's* objectives

1.2.1 The works that the *Contractor* is to perform *involve* the design, refurbish, supply, delivery, installation, testing and commissioning of fuel facilities at the various Transnet Port Terminals. The terminals are in three provinces, namely

a. Kwa Zulu Natal

- Richards Bay and
- Durban

b. Eastern Cape

- East London,
- Coega and
- Gqebera

c. Western Cape

- Cape Town and
- Saldanha

1.2.2 The major activities of the *works* for Existing Fuel Facilities, as minimum activities include but not limited to:

1.2.3 Detection of underground services for old tanks.

1.2.4 Perform condition assessment using relevant engineering tests to determine the condition of the Fuel Facility which includes i.e.

- Tank
- Piping
- Electrical
- Instrumentation
- Platforms, ladders and structural
- Civil works
- Firefighting system
- Pump
- Valves

1.2.5 Provide comprehensive report to TPT with recommendations that are subjected to approval.

1.2.6 When approval is granted, perform critical repairs, to ensure compliance to Occupational Health & Safety Act, SANS, API 653 and NEMA and get the Fuel Facilities registered with the council and energy department.

1.2.7 Improve the tank features i.e., installation of fuel gauges, repositioning of stepladders (ergonomics).

1.2.8 Issue drawings for the existing structures.

1.2.9 Issue maintenance manuals.

1.2.10 Issue flammable certificate and all relevant compliance certificates.

1.2.11 Register the tanks with local authorities i.e., Municipality.

1.2.12 The major activities of the *works* for New Fuel Facilities, as minimum activities include but not limited to:

a. Design, supply, delivery, installation, testing and commissioning of fuel facilities.

b. Removal and safe disposal of old tanks.

c. Rehabilitation of the area once the old tank has been removed.

d. Perform underground detection service

e. Geotechnical investigation and Report.

f. Entire fuel facility refurbishment.

g. Mechanical works including Fire Fighting.

h. Electrical and Instrumentation works

i. Civil works

j. Inspection and Report with recommendations.

k. Refurbishment of fuel drainage.

l. Commissioning of fuel facilities.

m. Issue all relevant fuel compliance certificates

1.3 Interpretation and terminology

1.3.1 The following abbreviations are used in this Works Information:

Table 1: Abbreviations used in the document

Abbreviation	Meaning given to the abbreviation
AIA	Approved Inspection Authority
API	American Petroleum Institute
CD	Compact Disc
CDR	*Contractor* Documentation Register
CDS	*Contractor* Documentation Schedule
CRL	*Contractor* Review Label
CIRP	*Contractor's* Industrial Relations Practitioner
CM	Construction Manager
DCT	Durban Container Terminal
DTI	Department of Trade and Industry
DGN	CAD file format supported by Micro-station
DWG	Drawings
EDMS	Emissions Data Management System
EO	Environmental Officer
HAW	Hazard Assessment Workshop
HAZCON	Hazard of Construction
HAZOP	Hazard and Operability Study
HSSP	Health and Safety Surveillance Plan
INC	Independent Nominated Consultant
IP	Industrial Participation
IR	Industrial Relations
ISPS	International Ship and Port Facility Security Code
IPP	Industrial Participation Policy

IPO	Industrial Participation Obligation
IPS	Industrial Participation Secretariat
IRCC	Industrial Relations Co-ordinating Committee
JSA	Job Safety Analysis
CIRP	*Contractor*'s Industrial Relations Practitioner
Native	Original electronic file format of documentation
PES	Project Environmental Specifications
PHA	Preliminary Hazard Assessment
PIRM	Project Industrial Relations Manager
PIRPMP	Project Industrial Relations Policy and Management Plan
PLA	Project Labour Agreements
PIRM	Project Industrial Relations Manager
PSPM	Project Safety Program Manager
PSSM	Project Site Safety Manager
QA	Quality Assurance
R&D	Research and Development
SACPCMP	South African Council for Project and Construction Management Professionals
SANS	South African National Standards
SASRIA	South African Special Risks Insurance Association
SHEQ	Safety, Health, Environment and Quality
SHEC	Safety, Health and Environment Co-ordinator
SIP	Site Induction Programme
SMP	Safety Management Plan
CEM SOP	Transnet Construction Environmental Management Standard Operating Procedure
SSRC	Site Safety Review Committee
TNPA	Transnet National Port Authority
TPT	Transnet Port Terminals
*TPL	Transnet Pipelines
AFC	Approved for Construction
AFD	Approved for Design
ANSI	American National Standard Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing Materials
AWS	American Welding Society
BOM	Bill of Materials
CAD	Computer Aided Drawing

COC	Certificate of Compliance
DB	Distribution Board

1.4 Project Scope Overview

1.4.1 HSSE compliance

1.4.2 Regulatory compliance

1.4.3 The suitability and functionality of all the items provided

1.4.4 The warranty / guarantee of all the items provided

1.4.5 Supplying of all design documentation, including drawings and specifications, to the Engineer for review

1.4.6 all necessary regulatory and professional approvals, this includes but is not limited to Pr. Eng., Architectural and Responsible Person signoff

1.4.7 Quality control and assurance

1.4.8 Training

1.4.9 Documentation, including Approved for Construction (AFC) drawings, as-built drawings, and manuals

1.4.10 Providing and keeping to the schedule

1.4.11 Budgetary control

1.4.12 Attending all project meetings

1.4.13 Assisting the Engineer, Purchaser, and any third-party appointments by the Purchaser

1.4.14 The Engineer is responsible for:

1.4.15 Reviewing the Suppliers documentation – this does not remove any responsibility from the Supplier

1.4.16 Monitoring the Supplier's quality – this does not remove any responsibility from the Supplier

1.4.17 Monitoring the works and reporting on progress to the Purchaser

1.4.18 Facilitating project meetings

1.4.19 The Purchaser is responsible for:

1.4.20 Providing fair and reasonable access

1.4.21 Remunerating the Supplier as per the agreed progress schedule

2 Engineering Scope

2.1 Legal Requirements Regarding Designs

2.1.1 All associated equipment shall comply with the following relevant South African Acts and Regulations, and they shall apply in the order of precedence as listed below:

2.1.2 All the designs and installations must also comply with the standards, regulations, and design codes below.

2.2 Reference Documents

2.3 Regulations

Table 2: List of South African and International Codes used in the development of this document

Item	Document Number	Description
[1]	OSH ACT 85 of 1993	South African National Occupational Health and Safety Act 85 of 1993
[2]	NEMA 107 of 1998	National Environmental Management Act 107 of 1998

2.4 Standards

Table 3: List of all South African and International Standards used in the development of this document

Item	Document Number	Description
1)	SANS 10198	The selection, handling, and installation of electric power cables of rating not exceeding 33 kV Part.
2)	SANS 10108	The classification of hazardous locations and the selection of electrical apparatus for use in such locations.
3)	SANS 10114-1	Interior lighting.
4)	SANS10142-1&2	Code of practice for the wiring of premises.
5)	SANS 1019, 2014	Standard voltages, currents, and insulation levels for electricity supply.
6)	SANS 1507	Electric cables with extruded solid dielectric insulation for fixed installations (300/500 to 1900/3300 V) for low voltage (LV) power cables.
7)	SANS 1339	Electric cables – cross-linked polyethylene (XLPE) insulated cables for rated voltages 3,8/6,6 kV to 19/33 kV for medium voltage (MV) XLPE power cables.
8)	SANS 10400	The application of the National Building Regulations.
9)	SANS 1200HC	Corrosion Protection of Steelwork.

10)	SANS 10198	The selection, handling, and installation of electric power cables of rating not exceeding 33 kV Part.
11)	SANS 15589-1:2009	Cathodic Protection of Buried and Submerged Structures
12)	SANS 10129	Plastic tape wrapping of Steel Pipelines
13)	NACE RP 01-69	Control of External Corrosion on Underground or Submerged Metallic Piping Systems
14)	NACE RP 05-77	Mitigation of Alternating Current and Lighting Effects on Metallic Structures and Corrosion Control Systems
15)	NACE RP 05-72	Design, Installation, Operation of Impressed Current Deep Ground beds
16)	NACE RP 16-32	Cathodic Protection of Underground Storage tanks and Piping Systems
17)	SANS 10108	The classification of hazardous locations and the selection of electrical apparatus for use in such locations.
18)	SANS 10114-1	Interior lighting.
19)	SANS10142-1&2	Code of practice for the wiring of premises.
20)	SANS 1019, 2014	Standard voltages, currents, and insulation levels for electricity supply.
21)	SANS 1507	Electric cables with extruded solid dielectric insulation for fixed installations (300/500 to 1900/3300 V) for low voltage (LV) power cables.
22)	SANS 1339	Electric cables – cross-linked polyethylene (XLPE) insulated cables for rated voltages 3,8/6,6 kV to 19/33 kV for medium voltage (MV) XLPE power cables.
23)	SANS 10400	The application of the National Building Regulations.
24)	SANS 1200HC	Corrosion Protection of Steelwork.
25)	SANS 347	Categorization and conformity assessment criteria for all pressure equipment
26)	SANS 0089	The petroleum industry Part 1, Part 2, and Part 3: Storage and distribution of petroleum products
27)	SANS 10227	Criteria for Operation of Inspection Authorities Performing Inspections in Terms of Pressure Equipment Regulations
28)	SANS 17020	Conformity Assessment – Requirements for the Operation of Various Types of bodies Performing Inspection,
29)	SANS 17021	Conformity Assessment – Requirements for bodies Providing Audit and Certification of Management Systems,
30)	SANS 10112	National Norms and Standards for Domestic Water and Sanitation Services
31)	SANS 10400 – T	Fire protection
32)	SANS 10400 – W	Fire Installations
33)	SANS 10131 – Part 1	Storage and distribution of petroleum products in above-ground bulk installations
34)	SANS 10089 – Part 2	Electrical and other installations in the distribution marketing sector

35)	SANS 10089 – Part 3	The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations.
36)	SANS 10089	The petroleum industry Part 1, Part 2, and Part 3: Storage and distribution of petroleum products.
37)	SANS 10131	Above Ground storage tanks for petroleum products
38)	UL 142	Steel Aboveground Tanks for Flammable and Combustible Liquids
39)	UL 58	Safety Steel Underground Tanks for Flammable and Combustible Liquids,
40)	API 510	Pressure Vessel Inspection Code
41)	API 570	Inspection, Repair, alteration, and Rerating of In-Service Piping Systems
42)	API RP 574	Inspection Practices for Piping system Components
43)	API 650	Tank Inspection, Repair, Alteration and Reconstruction Code
44)	API 653	Tank Inspection, Repair, Alteration and Reconstruction Code
45)	ANSI/NB-23	National Board Inspection Code
46)	NFPA 20	Standard for the installation of Stationary Pumps for Fire Protection
47)	NFPA 11	Standard for Low, Medium, and High Expansion foam
48)	NFPA 10	Standard for Portable fire Extinguishers
49)	API 2000	Venting Atmospheric and Low-pressure Storage Tanks
50)	API 520	Sizing, Selection, and Installation of Pressure-relieving Devices
51)	SANS 1200	Standardised specification for Civil Engineering
52)	SANS 2100	Construction Works-Concrete Works
53)	SANS 10100-2	Structural Use of concrete
54)	SANS 10089	Storage and distribution of petroleum products in above ground bulk installations
55)	SANS 2100-CS1	Structural Steelwork
56)	SANS 10100-1	Structural use of concrete
57)	SANS 10162-1	The Structural use of steel
58)	SANS 10089-3	The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations
59)	The S.A. National Building Regulations and Building Standards Act. (Act 103 of 1977)	
60)	The Automatic Sprinkler Inspection Bureau (ASIB) 12th edition rules (or latest update)	

2.5 Specifications

Table 4: List of all Transnet Specifications used in the development of this document

Item	Document Number	Description
[1]	TPD-002-DBSPEC	Specification for low voltage distribution boards

[2]	TPD-003-CABLESPEC	Specification for the supply and installation of medium voltage and low voltage electrical cables
[3]	TPD-004-EARTHINGSPEC	Specification for earthing and the protection of buildings and structures against lightning.
[4]	TPD-007-MVSWITCHSPEC	Technical specification for indoor medium/high voltage (1kV to 33kV) alternating current switchgear and control gear.
[5]	TPD-001-EL&PSPEC	Technical specification for electrical installations to building other than dwelling houses.
[6]	TPD-010B-HIGHMASTSPEC	Technical specification for the maintenance and upgrade of high mast lighting structure.
[7]	TPD-008-MINISUBSPEC	Specification for the design, supply, delivery, and installation of Mini-Substations.
[8]	EEAM-Q-008	Corrosion Protection
[9]	EEAM-Q-009	Quality Management
[10]	TIMS SHEQ Contractor Specifications Guidelines	

2.6 Other Specifications

Table 5: List of other Specifications used in the development of this document

Item	Document Number	Description
[1]	TPD-002-DBSPEC	The Local Municipal by laws and any special requirements of the Supply Activities of the area or district concerned.

2.7 Project Scope Overview

The high-level scope of the project is to evaluate the status of the existing equipment, infrastructure, facilities, utilities, systems and associated current designs that forms part of the TPT Fuel Facilities Project (National), in its varying state of completion, review and on-boarding of the existing designs (if available), carry out additional/ complete designs, execute the project as per the updated designs, and finally commission and handover the assets to the Employer for operational use. This includes the EPCM Scope of services as well as other work packages.

All new designs as well as the construction of the plant needs to be compliant to the OSH Act per regulations. The EPCM Contractor needs to develop a strategy to accommodate this requirement

2.8 Engineering Scope

Transnet the Employer requires an EPC EPCM Contractor who has experience in petrochemical industry to co-ordinate the works in Fuel Facility conditional assessment across all Terminals, prepare a Scope for work for repairing as per Table 5. EPC EPCM shall Design, Manufacture,

Construct, Testing and Commissioning of the new Fuel facility including Structural, Electrical, Instrumentation, Civils, Firefighting, Security compliances etc. as per Table 5.

The EPC EPCM Contractor must appoint an Authorized Inspection Authority (AIA) for inspection of fuel facility integrity inspection in accordance with API 653 Standard is a statutory requirement. These standard covers steel storage tanks built to API 650 Standard and its predecessor API 12C. The Inspector shall be qualified and certified in accordance with the applicable post construction Codes (latest).

Non-destructive examination personnel responsible for data used in a Fitness-For-Service assessment shall be certified to Level II in accordance with industry standards such as the American Society for Non-destructive Testing (ANST) SNT-TC-1A, CP-189, ACCP, or equivalent. The Inspector shall have experience in the inspection, examination, or both, of the type of equipment and associated process that is the subject of the Fitness-For-Service assessment. The appointed EPC EPCM Contractor shall be responsible for all site work, supervision and management aspects of the API 653 Inspection and SANS 10089 (parts 1-3) Codes for the petrochemical industry.

The following table illustrates a high-level view of the project and compares the original design scope with that of the revised scope, and the proposed new scope:

Table 6: Existing and Proposed New Scope

No	Area/Location	Original/Existing Design Scope	Proposed New Scope
1.	Maydon Wharf, Durban	• Aboveground Horizontal Tank • Capacity = 23 000 Litres • Diameter = 2 200 mm • Length = 5 500 mm • Quantity = 1	• Inspection & Testing, Recommendation, and Implement Recommendations • EPC EPCM to propose Transnet options either Repair the Existing Fuel Facility or Construct New Fuel facility.
2.	Pier 2, Durban	• Aboveground Vertical Tanks • Capacity = 83 000 Litres • Diameter = 915 mm • Height = 12 600 mm • Quantity = 3	• Inspection, Recommendation, Implement Recommendations • Recommendations could be Repair the Existing Fuel Facility
3.	Pier 1, Durban	Underground Tanks Details not available	• Dismantle, Demolish and Dispose the existing tanks including accessories, attachments, and Civil works. • Detection and removal of underground services. • Soil Testing to determine if the fuel has contaminated the soil. Rehabilitate the existing soil if any

			contamination found. Import suitable soil to fill the pits after removal of the Tanks. • Geotechnical Investigations to be conducted. • Design, Manufacture, Construct, Testing and Commissioning of the new Fuel facility including Structural, Electrical, Instrumentation, Civils, Firefighting, Security compliances, including 2 New Tanks with Capacity 78 m^3 (78 000 Litres).
4.	Point Road, Durban	• Aboveground Horizontal Tank • Capacity = 23 000 Litres • Diameter = 2 200 mm • Height = 5 500 mm • Quantity = 1	• Inspection & Testing, Recommendation, and Implement Recommendations • EPC EPCM to propose Transnet with options either Repair the Existing Fuel Facility or Construct New Fuel facility.
5.	Richards Bay	• Aboveground Horizontal Tank • Capacity = 60 000 Litres • Diameter = 2 900 mm • Height = 9 000 mm • Quantity = 1	• Inspection & Testing, Recommendation, and Implement Recommendations. • EPC EPCM to propose Transnet with options either Repair the Existing Fuel Facility or Construct New Fuel facility.
6.	Richards Bay	• Aboveground Horizontal Petrol Tank • Capacity = 14 000 Litres • Quantity = 1	• Dismantle, Demolish and Dispose the existing tanks including accessories, attachments, and Civil works. • Detection and removal of underground services. • Soil Testing to determine if the fuel has contaminated the soil. Rehabilitate the existing soil if any contamination found. Import suitable soil to fill the pits after removal of the Tanks. • Geotechnical Investigations to be conducted. • Design, Manufacture, Construct, Testing and Commissioning of the new Fuel facility including Structural, Electrical, Instrumentation, Civils, Firefighting, Security compliances, including 1 New Tanks with Capacity 20 m^3 (20 000 Litres).
7.	East London	• Underground Tanks • Capacity = 23 000 Litres	• Dismantle, Demolish and Dispose the existing tanks including

		• Quantity = 2	accessories, attachments, and Civil works. • Detection and removal of underground services. • Soil Testing to determine if the fuel has contaminated the soil. Rehabilitate the existing soil if any contamination found. Import suitable soil to fill the pits after removal of the Tanks. • Geotechnical Investigations to be conducted. • Design, Manufacture, Construct, Testing and Commissioning of the new Fuel facility including Structural, Electrical, Instrumentation, Civils, Firefighting, Security compliances, including 2 New Tanks with Capacity 70 m^3 (70 000 Litres).
8.	Saldanha	• Aboveground Horizontal Tank • Capacity = 23 000 Litres • Diameter = 2 300 mm • Height = 5 400 mm • Quantity = 1	• Dismantle, Demolish and Dispose the existing tanks including accessories, attachments, and Civil works. • Detection and removal of underground services. • Soil Testing to determine if the fuel has contaminated the soil. Rehabilitate the existing soil if any contamination found. Import suitable soil to fill the pits after removal of the Tanks. • Geotechnical Investigations to be conducted. Design, Construct, Testing and Commissioning of the new Fuel facility including Structural, Electrical, Instrumentation, Civils, Firefighting, Security compliances, including 2 New Tanks with Capacity 70 m^3 (70 000 Litres).
9.	Cape Town Container Terminal	• Aboveground Vertical Tank • Capacity = 39 000 Litres • Diameter = 2 820 mm • Height = 6000 mm • Quantity = 2	• Inspection & Testing, Recommendation, and Implement Recommendations. • EPC EPCM to propose Transnet options either Repair the Existing Fuel Facility or Construct New Fuel facility.

10.	Cape Town Multipurpose Terminal	New site with no existing Fuel Facility	• Detection and removal of underground services. • Soil Testing to determine if the fuel has contaminated the soil. Rehabilitate the existing soil if any contamination found. Import suitable soil to fill the pits after removal of the Tanks. • Geotechnical Investigations to be conducted. • Design, Construct, Testing and Commissioning of the new Fuel facility including Structural, Electrical, Instrumentation, Civils, Firefighting, Security compliances, including 2 New Tanks with Capacity 70 m^3 (70 000 Litres).
11.	Port Elizabeth/ Gqebera	• Aboveground Horizontal Tank • Capacity = 23 000 Litres • Diameter = 2 300 mm • Height = 5 400 mm • Quantity = 2	• Inspection & Testing, Recommendation, and Implement Recommendations. • EPC EPCM to propose Transnet options either Repair the Existing Fuel Facility or Construct New Fuel facility.
12.	Ngqura Container Terminal (NCT)	• Aboveground Vertical Tank • Capacity = 63 000 Litres • Diameter: 2800 mm • Height = 10230 mm • Quantity = 4	• Inspection & Testing, Recommendation, and Implement Recommendations. • EPC EPCM to propose Transnet options either Repair the Existing Fuel Facility or Construct New Fuel facility.

The scope for the EPCM Contractor shall include but not be limited to the following:

a. Conduct gap analysis and risk assessment to determine existing risk, issue recommendation for immediate implementation.
b. Undertake a site investigation and detailed condition assessment of all structural, civil, electrical, instrumentation and firefighting components; this must include the performing of relevant testing if required/where necessary.
c. Before testing could be carried out, it should agree with Transnet on the methodology.
d. Produce an independent assessment report including remedial measures and costing for the repairs and/or modifications required.
e. Design, supply, and construct work, in accordance with Transnet's Specifications, deliverables and processes, industry best practices, latest statutory codes, regulations and standards.
f. All remedial works to be signed by the Professional Registered Engineer (ECSA).

g. All method statements, designs, drawings, and maintenance plans to be provided in native and hard signed copy.
h. The remedial methodology to ensure there is minimum disruption to the operations of Transnet Port Terminals.
i. The fire protection system shall be integrated into the main control system for the port wherever possible, such that any alert will be sent to a control center for a quicker response to the fire.
j. The fire protection system shall be designed with the following in mind, including but not limited to an appropriate fire alarm system at the correct volume and tone shall be installed as per regulations and appropriate symbolic safety signs that comply with the requirements of SANS 1186-1 shall be mounted.
k. The fuel storage facility must also be registered with local municipality in line with SANS10400 and Municipal bylaws. Be issued with Flammable store registration certificate.
l. Develop or ensure any other legal registration is conducted or compliant with, example Environmental regulation requirements.
m. Designs needs to be informed by the Hazardous Installation Risk Assessment (which is different from a HAZOP)
n. Undertake complete HAZOP workshop for all designed elements and prepare HAZOP Report
o. Complete Fire Risk Assessment report
p. Operational Readiness Plan.
q. As built drawings.
r. Development of Business Continuity Plan in relation to how the business needs to be kept going while construction is taking place, including handover section by section plans.

2.9 Outputs

a. Complete inspection checklist for entire fuel facility.
b. Preliminary field report & final report.
c. Provide the inspection report with recommendations & prepare a scope of work for fuel facility repairs based on the inspection findings.
d. Post fuel facility repairs: conduct repairs verification inspection & provide a report or build a new facility as required.
e. Remaining life of fuel facility including tanks, piping, and structure.
f. Settlement cosine graph and inspection intervals.
g. Issue general arrangement and detail drawings of the complete fuel facility including structural and piping in two (2) set of hard copies, PDF format as well as AUTO-CAD format.
h. All intelligent property to belong to Transnet at completion

3 Construction

3.1 Temporary *works*, Site services & construction constraints

3.1.1 *Employer*'s Site entry and security control, permits, and Site regulations

a. The *Contractor* complies with the *Employer's* Site entry and security control, permits, and Site regulations.

b. The *Employer* arranges for ID cards to all *Contractors'* employees for access/egress of personnel (and Equipment) within the Site boundaries.

c. In some Sites, a TNPA permit will be required together with a TPT permit, depending on the access requirements for the specific Site

3.1.2 The *Contractor* complies with the following requirements of the *Employer*:

a. All *Contractor* staff entering the Transnet Port Terminals facility will be subjected to an alcohol breathalyser test on a daily basis, or to be conducted by the contractor.
b. All relevant PPE must be worn by Site personnel when entering the Port.
c. All vehicle permits must be obtained prior to site access
d. All relevant personnel inductions must be done prior to site in line with TIMS SHEQ Contractor Specification Guidelines.

3.1.3 Restrictions to access on Site, roads, walkways and barricades

a. The *Contractor* is specifically excluded from entering the *Employer's* Operational Areas which are adjacent to the Site and Working Area. The *Contractor* plans and organises his work in such a manner to cause the least possible disruption to the *Employer's* operations.

b. The *Contractor* ensures the safe passage of *Contractor's* traffic to and from the Site and Working Areas at all times that includes providing flagmen, protective barriers, signage, etc. for the protection, direction and control of traffic.

c. The *Contractor* ensures that none of his personnel and Equipment will be allowed to move outside of his allocated Site and Working Areas. To this end, access routes are allocated and co-ordinated by the *Project Manager*.

d. The *Contractor* ensures that all his construction personnel and Equipment remains within his allocated and fenced off construction area.

e. The *Contractor*'s personnel working within Transnet Port Terminals complies and are equipped with all necessary PPE, high visibility apparel.

3.1.4 The *Contractor* complies with the following requirements of the *Employer*:

a. Access/egress permissions and restrictions for all personnel and equipment will apply
b. All personnel to remain within the site boundary at all times

3.1.5 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 by the *Project Manager* at all reasonable times.

3.1.6 Health and safety facilities on Site to comply with the OSH ACT 85 of 1993.

3.1.7 The *Contractor* provides a notice board in terms of Transnet requirements at a location to be approved by the *Project Manager* on site.

3.1.8 The *Contractor* provides progress photographs at weekly intervals in electronic format to the *Project Manager.*

3.1.9 The *Contractor* does not advertise the contract or the project to any third party, nor communicate directly with the media (in any jurisdiction) whatsoever without the express written notification and consent of the *Project Manager*.

3.1.10 Site services and facilities:

a. For the duration of the Contract, the *Project Manager* will provide an area, free of charge, of the *Contractor* to establish his offices, lay down areas, stores, workshops, and other *Contractor's* Equipment when needed.

b. The *Project Manager* provides the *Contractor* with a connection to the *Employer's* water-borne sewerage network. Where no suitable connection to a sewerage system is feasible, portable chemical type toilets may be used at contractors' cost.

c. All costs for preparation of the site establishment area are for the *Contractor's* account.

d. The *Contractor* is responsible for his own connection to the *Employer's* services and for the reticulation of his services from the connection point. The cost of meters, connections, reticulation and all other usage costs associated with the provision of services are for the *Contractor's* account.

e. The *Contractor* provides temporary lighting (if required) and fencing around every section occupied by him during the construction of the works which will not interfere with landside and waterside operations.

f. Such fencing demarcates and secures the construction area. The fencing is erected before any work starts and is removed only upon completion of the work in the area. The fencing should be at least 1,8m high and be constructed of material that will prevent any pilferage of material through the fence. Gates should be of the same quality and be able to be locked when the contractor is not on site. A

suitable guard hut must be placed at the entrance to the site for protection of the guard(s) deployed.

g. The *Contractor* includes for all costs for such lighting and fencing, including access control into and out of these restricted areas.

h. Wherever the *Contractor* provides facilities (either his own or for the *Project Manager* and/or *Supervisor*) and all items of Equipment, involving, *inter alia*, offices, accommodation, laboratories, Materials storage, compound areas etc, within the Working Areas, then the *Contractor* makes good and provides full reinstatement to the land (including all apparatus of the *Employer* and Others in, on or under the land) and surrounding areas to its original standard, upon dismantling of such facilities and items of Equipment.

i. Upon completion, and within one month of the date of acceptance of the works, the *Contractor* completely removes from the Site and Working Area all his Equipment, including the foundations of any structures, stores, office accommodation or any other asset belonging to him, and leaves the Site and Working Areas in a tidy condition to the satisfaction of the *Project Manager*.

j. No excess or discarded materials or Equipment may be buried or dumped within the port boundary.

k. All waste removal will be for the contractors account and waste shall not be placed in TPT waste receptacles.

l. Demolition of all temporary structures, surfaces, etc., shall be first approved by the *Project Manager* prior to the work being carried out.

m. The *Employer* does not provide any security for the Site and Working Areas. The *Contractor* provides same and indemnifies and hold indemnified the *Project Manager* and *Employer* against any claims and actions that may arise out of Site and Working Areas security.

n. Security service providers employed must comply to the prescripts of the Private Security Industry Regulatory Authority (PSIRA). This applies to both the security company and its employees. The rates payable will be as per the Sectoral Determination for the security industry as published in the Government Gazette by the Minister of Labour and Employment.

o. No housing is available for the *Contractor's* employees. The *Contractor* makes his own arrangements to house his employees and transports them to site in a closed vehicle specifically designed for passenger transport (bus or similar), accepted by the *Project Manager*.

p. The *Contractor* shall provide everything else necessary for Providing the Works.

3.1.11 Wherever the *Employer* provides facilities (including, *inter alia*, temporary power, water, waste disposal, telecommunications etc) for the *Contractor's* use within the Working Areas and the *Contractor* adapts such facilities for use, then the *Contractor* makes good and provides full reinstatement to the land (including all apparatus of the *Employer* and Others in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the *Employer*.

3.1.12 Facilities provided by the *Contractor:*

The *Contractor* ensures that this site establishment area is compliant with the relevant safety regulations and restrictions, is clearly sign posted, and has a suitable security fence, lighting and the necessary access control gates.

3.1.13 Unless expressly stated as a responsibility of the *Employer* as stated under 3.1.10 Site services and facilities, 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*.

3.1.14 Underground services, other existing services, cable and pipe trenches and covers

a) The *Contractor* establishes the location of the various existing services situated within the Site and Working Areas and records all such information on a "marked-up" drawing(s) which remains available for reference at all times.

b) The *Contractor* exercises due care and attention in carrying out any excavation work to avoid damage or disruption to existing services. The *Contractor* according consults the *Project Manager* prior to undertaking any excavation work.

c) Should the *Contractor* fail to exercise the requisite care and attention in carrying out the excavation work, the *Contractor* will be held liable for any claims arising out of damage caused by such excavation.

3.1.15 Where the *Contractor* encounters existing underground services / existing services cables / pipe trenches, the *Contractor* undertakes the following: Notify the Project *Supervisor* immediately and await further instructions

3.1.16 Control of noise, dust, water and waste

Before moving Equipment onto the Site and Working Areas and commencing operations, the Contractor submits his proposed methods of construction which demonstrate the measures taken to avoid and or reduce any nuisance arising from dust and noise for acceptance by the *Project Manager*.

3.1.17 Giving notice of work to be covered up:

This notification is given not less than 24 (twenty-four) hours prior to the proposed covering up.

3.2 Completion, testing, commissioning, and correction of Defects

3.2.1 The *work* to be done by the Sectional Completion Dates;

On or before the Sectional Completion Date the *Contractor* shall have done everything required to Provide the Works including the work listed below which is to be done before the Sectional Completion Date and in any case before the dates stated.

The *Project Manager* cannot certify Completion until all the work listed below has been done and is also free of Defects, which would have, in his opinion, prevented the Employer from using the works and others from doing their work.

No.	Item of work	To be completed by
1.	Richards Bay Terminal - Refurbishment of Fuel Facility with Compliance certification	14 Jul 2025
2.	Durban Roro Port Terminal - Refurbishment of Fuel Facility with Compliance certification	22 May 2026
3.	Durban Maydon Wharf Port Terminal - Refurbishment of Fuel Facility with Compliance certification	16 Jan 2026

4.	Durban Container Port Terminal Pier 1 – New Fuel Facility with Compliance certification	07 May 2026
5.	Durban Container Port Terminal Pier 2 – Refurbishment of Fuel Facility with Compliance certification	21 Sep 2026
6.	Cape Town Multi-Purpose Terminal– New Fuel Facility with Compliance certification	03 Feb 2027
7.	Cape Town Container Terminal – Refurbishment of Fuel Facility with Compliance certification	17 Apr 2026
8.	Saldanha Multi-Purpose Terminal– Refurbishment of Fuel Facility with Compliance certification	06 Nov 2025
9.	East London Multi-Purpose Terminal – Refurbishment of Fuel Facility with Compliance certification	09 Oct 2026
10.	Gqebera Multi-Purpose Terminal – Refurbishment of Fuel Facility with Compliance certification	28 Jul 2025
11.	Ngqura Multi-Purpose Terminal – Refurbishment of Fuel Facility with Compliance certification	16 Jan 2026
12.	**Completion Date**	**03 Mar 2027**
13.	**Defects Period**	**03 Mar 2028**
	As built drawings	Within 7 days of each Sectional Completion.
	Testing of all works in use as specified in this Works Information.	Within 14 days before of each Sectional Completion

3.2.2 Use of the *works* before Completion has been certified (Clause 35 of the NEC3 ECC to be included in Part C1: Contract Data).

3.2.3 The *Employer* to take over a *section* of the works listed above before Completion of the whole of the works. Each of the *sections* should be identified in the Contract Data part one, with the requirements for the work to be done by *completion date* of each stated in the Works Information. Once Completion of a *section* is achieved the *Employer* take over the *section*. (Secondary Option X5 of the NEC3 ECC to be included in Part C1: Contract Data)

3.2.4 The *Contractor* ensures that the *Project Manager* has a full and accurate dossier of As-built documents that represent the contractors Mechanical, Electrical, Civil and General Construction Works and Layouts status of the completed *works* (to include Plant within the *works*) to present to the *Employer*.

3.2.5 The *Contractor* complies with the following constraints and procedures of the *Employer* where the *Project Manager* arranges access for the *Contractor* after Completion:

4 List Of Drawings

4.1 Drawings issued by the *Employer*

4.1.1 There are no drawings that will be issued by the *Employer* at or before the Contract Date and which apply to this contract.

SECTION *2*

5 Management and start up

5.1.1 It is the *Employer's* specific intention that the Parties and their agents use the techniques of partnering to manage the contract by holding meetings designed to pro-actively and jointly manage the administration of the contract with the objective of minimising the adverse effects of risks and surprises for both parties.

5.1.2 Depending on the size and complexities of the Works, it is probably beneficial for the Employer to hold a bi-weekly risk register meeting (Clause 16.2). This could be used to discuss safety, environmental, compensation events, subcontracting, overall co-ordination, and other matters of a general nature. Separate meetings for specialist activities such as programming, engineering, and design management, may also be warranted.

5.2 Management meetings

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

Title and purpose	**Approximate time & interval**	**Location**	**Attendance by:**
Risk register and compensation events	Weekly on (or at shorter intervals if required)	On site / Virtual	*Project Manager, Supervisor, Contractor,* and appropriate key persons
Overall contract progress and feedback	Every two weeks	On site / Virtual	*Employer, Project Manager, Supervisor, Contractor,* and appropriate key persons
Technical Meetings	Every two weeks	On site / Virtual	*Project Manager, Supervisor, Contractor,* and appropriate key persons
Planning Meetings	Weekly	On site / Virtual	*Employer, Project Manager, Supervisor, Contractor,* and appropriate key persons

5.2.2 Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature, and the progress of the *works*. Records of these meetings are to be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

5.2.3 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.

5.3 Documentation Control

5.3.1 In undertaking the '*Works'* all documentation requirements for The *Works* shall be dealt with in accordance with document DOC-STD-0001 – Rev03 (Contractor Documentation Submittal Requirements). The control, maintenance and handling of these documents and drawings, using a suitable document control system, remain the sole responsibility of the Contractor.

5.3.2 TPT's Project Document Controller will take the responsibility for the management of all technical and non-technical documentation throughout the life cycle of the Project. All documentation produced for and on behalf of the project will be registered with document control and its management thereof. This will include the registration, classification, managing, scanning, tracking, filing, storing, distribution and filing of all hardcopy and electronic documentation generated for and on behalf of the project.

5.3.3 All documentation and data created for the Project shall be numbered and named according to the TPT Codification Procedure. Such numbering is only available from the Project's Document Control Group

5.3.4 All contract correspondence is issued through document control. All communication to be submitted electronically and is to be addressed to the Project Manager and Transnet Port Terminals doc Control mailbox at all times email: DBNDocControl@transnet.net

5.3.5 Each supplier of documentation and data to the Project is responsible for ensuring that all documentation and data submitted conforms to the Project Standards and data Quality requirements in terms of numbering, uniqueness, quality, accuracy, format, completeness, and currency of information. Data not meeting the Project Standards and data Quality requirements will be cause for rejection and returned to the Contractor for corrective action and re-submission.

5.3.6 Should any change be made to documentation or data, which has already been submitted to the Project, then new or revised documentation or data shall be issued to Doc Control DBNDocControl@transnet.net to replace the outdated information.

5.3.7 It is the responsibility of all Project participants undertaking work on the Project to ensure they obtain and comply with the relevant requirements to suit their deliverables and Scope of Work.

5.3.8 The Contractor is to ensure that the latest version of the required application software and a suitable 'IT' Infrastructure is in place to support the electronic transmission of documentation.

5.3.9 The Contractor shall be responsible for the supply of all Sub-Supplier/Contractor/ Manufacturer, etc. documentation and data related to their package of work and shall ensure that these Sub-Suppliers have the capability to supply the necessary documentation and data in the required timeframe and quality as outlined in the specified standards prior to awarding sub-orders.

5.3.10 The required number of copies shall as a minimum be three (3) (1x original + 2 x hard copies), with the corresponding PDF and 'Native' file formats upon final submission.

5.3.11 The Contractor shall apply "wet signatures" to the original Documentation before scanning the signed original and prior to formal submission to the Project.

5.3.12 Final issues of all documentation shall be supplied to the Project in "wet signature" format along with the associated corresponding electronic 'native files and PDF renditions.

5.3.13 The Contractor shall ensure adequate resources are available to manage and execute the Document Control function as per the requirements of the Project. (The Contractor shall ensure that a dedicated Document Controller is available for the Project).

5.4 Safety risk

5.4.1 **Health and Safety Standard**

The Contractor must comply with the requirements of the TIMS H&S Contractor Specification Guideline TRN-IMS-GRP-GDL-014.3, site specific health and safety specification and OHS Act No. 85 of 1993 and its applicable Regulations.

5.4.2 ***Contractor's* General Requirements for Health and Safety**

The *Contractor* is solely responsible for carrying out the work under the Contract having the highest regard for the health and safety of its employees, Transnet's employees and persons at or in the vicinity of the Site, the *works*, temporary work, materials, the property of third parties and any purpose relating to the *Contractor* carrying out its obligations under this Contract.

The *Contractor* must initiate and maintain safety precautions and programs to conform to all applicable Health and Safety laws or other requirements, including requirements of any applicable government instrumentality and client corporate, business unit and site requirements. The *Contractor* must, at its own cost, erect and maintain safeguards for the protection of workers and the public. The *Contractor* must manage all reasonably foreseeable hazards created by performance of the work. The *Contractor* must:

a) Provide all things and take all measures necessary for maintaining proper personal hygiene, ensuring safety of persons and property and protecting the environment at or near the Site.

b) Avoid unnecessary interference with the passage of people and property at or near the Site.
c) Prevent nuisance and excessive noises and unreasonable disturbances in performing the Services.
d) Be responsible for the adequacy, stability and safety of all of its site operations, of all its methods of design, construction and work and be responsible for all of the work, irrespective of any acceptance, recommendation, or consent by TPT, its *Contractors*, employees, agents and invitees, or any Government Body.

Costs for the above are borne by the *Contractor*.

The Contractor must ensure that it is well equipped and competent to prevent and handle emergencies in a project of this nature. The contractor must compile an emergency preparedness response plan detailing the arrangements made to provide effective emergency response for the duration of the project. The contractor must ensure that there is vessel entry procedure and that the oxygen levels are tested before anyone goes inside the tank. The contractor must ensure there is always a competent safety and fire watcher to monitor and respond in case of an emergency. The safety watcher must also be able to identify the hazard and be able to sound the alarm should the need arise.

The contractor must ensure that they appoint a competent construction manager, construction supervisor and a safety officer who will be on site at all times.

The *Contractor* must comply and is responsible for ensuring that all of its Sub-*Contractor*s comply with the relevant legislation(s) and statutory regulations for health and safety, the Transnet Health and Safety requirements included in the Contract and other document pertaining to health & safety contained in the Programme Health & Safety Management System and include standards, policies, procedures, guidelines and safe work instructions.

5.4.3 ***Contractor's*** **Health and Safety Management**

The *Contractor* must prepare, implement and maintain a project-specific Health and Safety Management Plan as per the TIMS H&S Contractor Specification Guideline TRN-IMS-GRP-GDL-014.3 and site-specific health and safety specification. The plan must be based on the requirements set out in this Project Health and Safety specification as well as all applicable legislation. It must cover all activities that will be carried out on the project site(s), from mobilisation and set-up through to rehabilitation and decommissioning.

The plan must demonstrate the *Contractor's* commitment to health and safety and must, as a minimum, include the following:

a. A copy of the *Contractor's* Health and Safety Policy; in terms of the OHS Act section 7;
b. Procedures concerning Hazard Identification and Risk Assessment, including both Baseline and Task-Based Risk Assessments;

c. Arrangements concerning the identification of applicable Legal and Other Requirements, measures to ensure compliance with these requirements, and measures to ensure that this information is accessible to relevant personnel;
d. Details concerning Health and Safety Objectives – a process must be in place for setting objectives (and developing associated action plans) to drive continual improvement;
e. Details concerning Resources, Accountabilities and Responsibilities – this includes the assignment of specific health and safety responsibilities to individuals in accordance with legal or project requirements, including the appointment of a *Project Manager*, Health and Safety Officers, *Supervisors*, Health and Safety Representatives, and First Aiders;
f. Details concerning Competence, Training and Awareness – a system must be in place to ensure that each employee is suitably trained and competent, and procedures must be in place for identifying training needs and providing the necessary training;
g. Communication, Participation and Consultation arrangements concerning health and safety, including Toolbox Talks, Daily Safe Task Instructions, project health and safety meetings, and notice boards;
h. Documentation and Document Control – project-specific documentation required for the effective management of health and safety on the project must be developed and maintained, and processes must be in place for the control of these documents;
i. Processes and procedures for maintaining Operational Control, including rules and requirements (typically contained in Safe Work Procedures) for effectively managing health and safety risks, particularly critical risks associated with working at heights, confined spaces, mobile equipment and light vehicles, lifting operations, hazardous chemical substances, etc.;
j. Emergency Preparedness and Response procedures;
k. Management of Change – a process must be in place to ensure that health and safety risks are considered before changes are implemented;
l. Sub-*Contractor* Alignment procedures – a process must be in place for the assessment of sub-*Contractor*s and suppliers with regard to health and safety requirements and performance (before any contract or purchase order is awarded);
m. Measuring and Monitoring plans, including a plan for the measuring and monitoring of employee exposure to hazardous substances or agents (e.g. noise, dust, etc.) in order to determine the effectiveness of control measures;
n. Incident Reporting and Investigation procedures describing the protocols to be followed with regard to incident reporting, recording, investigation and analysis in accordance with TIMS Procedure- TRN-IMS-GRP-FRM-013.36;

o. Non-conformance and Action Management procedures concerning the management of corrective actions in accordance with TIMS Procedure- TRN-IMS-GRP-FRM-013.43;
p. Performance Assessment and Auditing procedures concerning health and safety performance reporting, monthly internal audits to assess compliance with the project health and safety requirements, and daily site health and safety inspections; and
q. Details concerning the Management Review process followed to assess the effectiveness of health and safety management efforts. Site Supervision
r. The *Contractor* shall comply with OH&S Act – Section 8, 9, 13 and 16 and the Construction Regulations 2014.
s. The *Contractor* must nominate and appoint a responsible person on site to whom the *Project Manager* may refer in connection with the *works*. Persons are nominated for all shifts worked or whilst any activity relating to the Contract is being performed on site, and must have the authority to bind the *Contractor* with respect to the Contract. (OH&S Act - 16 Section (2)).
t. The *Contractor* must ensure that the performance of all specified *works* is supervised throughout by a sufficient number of qualified and competent appointed representatives of the *Contractor*, who have experience in the type of work specified. (OH&S Act – Construction Reg. 8 (1) and 8 (2.)
u. Note: No work may commence and or continue without *Supervisor*y Appointees present on site. The *Contractor's* Site *Supervisor* must be equipped with a mobile telephone with message bank and/or pager or an equivalent communication device so that communication throughout the Contract can be maintained at all times.
v. The *Contractor's* Site *Supervisor* must provide a list of names and contact telephone numbers of all *Contractors* and Sub-*Contractor*'s contact persons on Site. This list is updated as a new *Contractor* or Sub-*Contractor* employee commences on Site.
w. The *Contractor's* Site *Supervisor* must keep a record of all employees, including date of induction, relevant skills and licenses, and be able to produce this list at the request of the *Supervisor* in accordance to TIMS Employee Personal Dossiers TRN-IMS-GRP-TMP 014.13 .
x. The *Contractor's* Site *Supervisor* must complete manning sheets describing the day's activities, labour numbers and classifications and issue these to the *Supervisor* prior to 9.00 am daily.
y. The *Project Manager's* Site Safety Representative is notified of any new starter with evidence of induction and site-specific induction prior to commencement of work.

5.4.4 ***Contractor's*** **Safety Officer**

a. The *Contractor* must appoint a full-time Health and Safety Officer for the duration of the contract who is registered with the SACPCMP (The South African Council for Project Construction Management Professions). If more than 100 employees are

deployed on the project site(s) (directly or through sub-*Contractor*s), at least two full-time Health and Safety Officers must be appointed, with an additional Health and Safety Officer appointed for every 100 additional employees thereafter.

b. The Health and Safety Officer must be on site when work commences at the start of the day and must remain on site until all activities for that day (including the activities of sub-*Contractor*s) have been completed. A Health and Safety Officer must be present during all shifts, so if work is carried out over more than one shift per day, the *Contractor* must make provision for an additional Health and Safety Officer.

Each *Contractor* Health and Safety Officer shall be responsible for:

a. Reviewing all applicable legal and project health and safety requirements and providing guidance to *Contractor* and sub-*Contractor* personnel (particularly the *Contractor's Project Manager*) to help ensure compliance at all times;
b. Assisting with the implementation of effective hazard identification and risk management processes for all work to be carried out by the *Contractor*;
c. Participating in the Baseline Risk Assessment for the *Contractor's* scope of work (prior to site establishment) and ensuring that identified control measures are implemented;
d. Participating in all Task-Based Risk Assessments conducted for the work to be carried out by the *Contractor* and ensuring that identified control measures are implemented;
e. Conducting *Contractor* health and safety induction training for all *Contractor* and sub-*Contractor* personnel;
f. Compiling and maintaining all health and safety related documents and records required of the *Contractor*;
g. Communicating relevant health and safety information to *Contractor* and sub-*Contractor* personnel (e.g. incidents and lessons learnt, leading practices, hazards, risks and control measures, etc.);
h. Carrying out Safety Observations and Coaching (one per day);
i. Evaluating (on a daily basis) the content of the Daily Safe Task Instructions (DSTI's) conducted by the *Contractor*'s appointed *Supervisor*s, and attending at least one DSTI each day;
j. Attending monthly *Contractor* and Site Health and Safety Meetings;
k. Assisting with the implementation of the *Contractor*'s Health and Safety Management Plan and associated Safe Work Procedures;
l. Carrying out Planned Task Observations on an ad hoc basis;
m. Assisting with the implementation, testing and maintenance of an effective Emergency Response Plan for all *Contractor* and sub-*Contractor* activities;
n. Responding to workplace incidents (as appropriate);

o. Participating in incident investigations;
p. Maintaining accurate health and safety statistics (for the *Contractor* and all sub-*Contractor*s), and compiling health and safety performance reports as required;
q. Auditing the health and safety management system and workplace activities of the *Contractor* and each sub-*Contractor* monthly to assess compliance with the project health and safety requirements; and
r. Tracking and reporting on the implementation of corrective actions (arising from incident investigations, audits, inspections, etc.).
s. The *Contractor* must ensure that they have made adequate provision of safety officers as per the *Works* Information. The *Contractor* must ensure that the Health and Safety Officer is adequately equipped to enable him to perform his duties effectively. Each Health and Safety Officer must be in provision with the following:
    - Health and safety auditing experience and training;
    - A valid First Aid certificate of competency;
    - Fire prevention and protection training; and
    - A valid Driving License (light motor vehicle).
    - Registered as a Health and Safety Officer with SACPCMP depending on the size of the project and on the risk.
t. Before placing a Health and Safety Officer on the project site(s), the *Contractor* must forward a copy of the person's CV to the nominated project management representative or to TPT Health and Safety Manager for review and acceptance. A proposed candidate may be rejected should he not meet the experience and/or qualification requirements, or due to poor work performance on previous projects.

5.4.5 *Contractor's* Safety Manual

a. The *Contractor* must provide a hard copy of its safety manual, policies and procedures to the *Project Manager* for acceptance prior to the commencement of any site work. The *Contractor* must ensure that his personnel, at all times, strictly observe and comply with the procedures set out therein. The *Project Manager* or the *Project Manager's* nominated Representative may from time to time request safety procedures applicable to the area of operations. The *Contractor* must forward to the *Project Manager* any updates or revisions to its safety manuals, policies or procedures as soon as practicable following revision or update.
b. The *Project Manager* may require the *Contractor* from time to time to supplement its safety manual, policies and procedures with guidelines and/or operating standards provided to the *Contractor* by the *Project Manager*. The *Contractor* must comply with such requests where the request is consistent with the requirements of the Contract. The *Contractor* must give prompt written notice to the *Project Manager* of any objection to the requested supplement, including the reasons for objection. The *Project Manager's* rights under this Clause are not intended, and must not be

construed, to relieve the *Contractor* from any obligations to ensure compliance with all provisions of this Contract.

5.4.6 **Performance Measurement and Reporting**

a. Health and Safety Statistics

The Contractor and each of its Sub-Contractors must complete and submit Health and Safety statistics to the *Project Manager* or the *Project Manager's* nominated representative, or as amended by the *Project Manager*, before mid-day on the Friday of each week. The Contractor must submit monthly Health & Safety Statistics before mid-day on the last day of each month to the *Project Manager's* nominated representative.

b. Safety Management Records

The Contractor must submit to the *Project Manager* for acceptance a schedule of the specific Health and Safety records it intends to maintain for the Contract. As a minimum, such records are as specified by applicable legislation. Copies are provided to the *Project Manager* or the Project Manager's nominated Representative if requested.

5.4.7 **Field Technical/Safety Audit by the *Project Manager***

a. The *Project Manager* or the *Project Manager's* nominated Representative has the right to conduct audits/inspections of the Consultant, Professional Service Provider (PSP) and Contractor Safety Management Plan implementation, operations, equipment, emergency procedures, etc., at any time, and the Contractor must fully cooperate with the *Project Manager* or the *Project Manager's* nominated Representative during such audits/inspections. The *Project Manager's* rights under this clause does not, must not and will not relieve the Consultant, Professional Service Provider (PSP) and Contractor of its own obligations to conduct audits and reviews of its own Health and Safety performance.

b. Where such audits/inspections reveal deficiencies in the Contractor procedures, drills, training or equipment, or non-conformities with the Contractor accepted project Safety Management Plan, the Contractor must investigate the cause of the nonconformity and initiate corrective and preventive action to rectify such deficiencies and non-conformities and prevent recurrence as soon as practicable as per the TIMS Occurrence and Non-conformance Management Procedure TRN-IMS-GRP-PROC-013.

c. Where such deficiencies include an unsafe practice or a breach of the statutory or the Contract's requirements, the *Project Manager* or the *Project Manager's* nominated Representative may in accordance with the General Conditions of

Contract suspend the work associated with the unsafe practice or breach until the deficiency is rectified.

d. The *Project Manager* or the *Project Manager's* nominated Representative will establish a schedule of regular field safety audits which will be based on an audit tool aligned to the Contractor Safety Management Plan and site operations and activities. The Contractor audit conformance will be assessed as a percentage and where conformance is better than 90% it will be considered satisfactory and the Contractor must develop and implement an action plan within 4 weeks, to be reviewed at the next regular audit. Where the Contractor level of conformance is between 80 – 90%, a corrective action plan will be required to be developed and implemented within 2 weeks, and a follow up audit will be carried out. Where the Contractor conformance is less than 80% the Contractor must stop work until an investigation of the cause/s has been completed and corrective actions have been developed and implemented by the Contractor.

e. The Contractor must provide to the *Project Manager* or the *Project Manager's* nominated Representative, at a time to be agreed, but not to exceed monthly intervals, a regular status report on all outstanding corrective actions until they are successfully closed out.

5.4.8 Unsafe Act/Condition Auditing

The Contractor must implement a system to recognize, correct, and report unsafe acts/conditions (Unsafe Act/Condition Auditing) associated with all Site activities.
All such observations must be recorded and delivered the TPT Health and Safety Manager/or as per the project's organogram

5.4.9 Involvement, Communication and Motivation

The Contractor and sub Contractor's workforce must, through their supervision, safety notice boards, toolbox meetings and daily pre-start meetings be kept aware of safety related matters.

5.4.10 Safety Meetings

The Contractor must implement and comply with OH&S Act, Section 19
The Contractor must conduct weekly safety meetings with his employees to foster safety awareness. Copies of minutes and action items arising from such Toolbox meetings is submitted or otherwise made available for review by the *Project Manager* or the *Project Manager's* nominated Representative.
Such meetings should at least address:

- Accident / safety incidents
- Hazardous conditions

- Hazardous materials / substances
- Work procedures
- Protective clothing / equipment
- Housekeeping
- General safety topics
- Job or work look-ahead issues
- Safety statistics
- Significant Safety Occurrences (SSO)

The *Contractor* must conduct at least one formal safety meeting per month and must maintain appropriate records of attendance and meeting content. Such records are made available to the *Project Manager's* Representative. In addition to Daily Safe Task Instructions, the *Contractor* must conduct at least weekly "tool box" meetings to discuss safety issues and procedures.

a. Pre-Start Safety Briefings

- The *Contractor* must hold documented Daily Safe Task Instructions with each work team before the start of each shift. Attendance records and brief topic notes is kept for auditing and record purposes. Safety Review Meetings
- The *Contractor* Site Manager and a Site Safety Representative must take part in weekly safety review meetings between the *Contractor* and the *Project Manager* or the *Project Manager's* nominated Representative.
- The *Contractor* must attend all project safety meetings as outlined in the Project Safety Management Plan.

b. Site Safety Review Committee

The *Contractor* complies with the requirements of the SSRC with respect to his own activities and others on the Site and Working Areas.

c. HAZOP Review

The *Contractor* participates in HAZOP reviews upon the instruction and direction of the *Project Manager*.

The reviews may include, but not be limited to, studies to ensure that the Plant is built and operated as designed and that personal safety, employee health and environmental protection systems conform to the *Employer's* and legislative requirements.

d. Job Safety Analysis

The *Contractor* completes a JSA prior to carrying out any operation on the Site and/or Working Area to the approval of the *Project Manager*.

e. Lines of Communication

The following personnel act on behalf of the *Project Manager* and may communicate directly with the *Contractor* and his key persons with respect to the SMP:

- Construction Manager (CM)
- Project Site Safety Manager (PSSM)

5.4.11 **Roles and responsibilities**

The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to the SMP and health and safety issues are as stated in the paragraphs following:

Construction Manager (CM)

The CM is responsible (in the context of the SMP only) for health and safety on the Site and Working Areas and reports to the *Project Manager*.

The CM specific tasks (in the context of the SMP) are:

- Implement the safety management system
- Monitor compliance to the established safety management system
- Ensure risk is at an acceptable level
- Ensure Consultant Construction Management Team are competent

Provide for:

a. Planning, organisation, leadership and control
b. Particular technical competencies for critical work
c. Supervision and control on each shift
d. Regular monitoring and assessment
e. Workplace inspections
f. Project Site Safety Manager
g. The PSSM is responsible for ensuring that the *Contractor* complies with the SMP. The PSSM acts on behalf of the *Project Manager*.
h. The PSSM specific tasks (in the context of the SMP) are:
i. Define, in accordance with the HSSP, the: Safety program (instructions, training, meetings, inspections, incentive), Health and medical program
j. Checks that *Contractors* have issued their Health and Safety plans, PPSPS and procedures before the beginning of work
k. Organizes safety awareness campaigns
l. Promotes communication on all health and safety matters (awards, incentives, meeting/inspections/audits reports)
m. Checks conformance of equipment to technical requirements and regulations.
n. Issues and address the site EHS activities reports
o. Promotes everybody's best efforts to keep accident frequency and severity ratios at their lowest level
p. Promotes a proper and continuous housekeeping of Plant and temporary facilities in order to create the most suitable conditions for workers to wok and to be encouraged to follow SHEQ requirements

q. Conducts *Work*site SHEQ walks with all *Contractors*, and directs appropriate corrective actions
r. Monitors that all factors likely to improve health and safety are taken into consideration, particularly those which lead to:
s. Promoting personnel protection as an absolute requisite
t. Investigating, identifying and neutralizing potential hazards
u. Close coordination with all parties involved in construction in order to avoid overcrowded areas and dangerous operations
v. Thorough preparation of work critical phases
w. Close contacts to local SHEQ authorities
x. Continuous follow-up in order to correct immediately unsafe acts and situations
y. In case of accident, he takes actions necessary to:
z. Initiate quick interventions of the emergency means.
aa. Check that first aid and evacuation of injured persons are properly carried out.
bb. Obtain a clear accident report from the sub-*Contractor* concerned.
cc. Report immediately to the Construction Manager.
dd. Investigate to identify the root causes of all incident and near misses.

5.4.12 Commissioning Safety Study

The *Project Manager*, through his Construction Management Team, will facilitate and coordinate a formal Commissioning Safety Study and ensure that required procedures are prepared prior to the commencement of the commissioning phase.

The Commissioning Safety Study will provide a final checkpoint for the completed work and is part of the process for ensuring that all necessary actions have been completed. The elements to be considered include:

a. Electrical integrity systems are in place (e.g., equipment tests and inspections of critical equipment, quality control procedures, etc.) which will confirm that construction, equipment and materials are in accordance with design specifications
b. Formal hazard analyses for pre-commissioning and commissioning activities have been completed, appropriately documented, and communicated, and are available to all personnel.
c. Punch-list work has been sufficiently completed so that installations are safe to apply hazardous energy.
d. Documentation relevant to any modifications has been created/updated.
e. Safe operating, maintenance and emergency procedures are in place.
f. Operating and maintenance manuals are available and training of commissioning employees has been completed.
g. As Built drawings are available.

h. A Commissioning Permit (to apply hazardous energy) is developed and implemented.

i. The *Project Manager* will ensure that after commissioning there is a formal documented hand over to operations and maintenance personnel and others who will be impacted by hazards that have been identified during project activities. This will involve communication of any changes to the process hazards, procedures and operating philosophy. Safe systems of work will be established and updated throughout the Project. Safe systems of work will be subject to on-going review to ensure their effectiveness. Site-wide Permits to Work will be used as the basis of safe systems of work for specified hazardous activities.

5.4.13 Working at Nights

A site-specific health and safety management plan should be well documented and structured so that both *Employer*s and employees can benefit from its use. The following are recommended components of a safety management plan for nighttime and working extended hours or weekends *Works*.

5.4.14 Site personnel responsibility

It should be determined and stated clearly in the site-specific health and safety management plan the responsibility of everyone at construction site for nighttime *Works*. *Project Manager*, Engineers, Designers, Safety Officer and Site *Supervisor*s as well as workers each have their specific responsibility to make sure the highest level of priority is given towards safety and health issues.

The *Contractor* must ensure adequate provision of safety officer personnel are present whenever working at night activities are taking place.

5.4.15 Permission to work at night

The *Contractor* shall apply in writing for permission to work at night and should be obtained from the relevant authority in this case TPT *Project Manager* before construction *Works* at night is carried out. The *Contractor*s should submit their application for work at night permit to TPT Client representative and it is advisable to follow all requirements enforced by the authority to executing nighttime construction *Works*. It is recommended that TPT representative should also notified TPT responsible personnel about intended night shift work.

5.4.16 Housekeeping

Accidents can occur because of poor housekeeping. Hazards at construction site are the same for both day and night shift while the risks of injury are much higher during

night *Works* because of the inherent poor illumination. It is essential that the workplace is kept clean and tidy to ensure safety and prevent accidents.

5.4.17 **Emergency Preparedness and Response (EPR)**

Contractor should develop and implement the EPR that is specifically nighttime environment and submit for approval before work at night is carried out. A well-established EPR can help both *Contractors* and employees to prepare; response and recover should a disaster occur.

5.4.18 **Public safety**

a. When construction *Works* involves public area, it is important to make sure the safety of the public. The *Contractor* must consider the following when planning for nighttime work; identify the hazards for example construction vehicle movement or too much glare from lighting equipment and plan for vehicular movement to not interrupt peak hours and make sure adequate supervision is provided for such movement.
b. *Contractor* must provide sufficient signage to warn the public and put barriers at a safe distance to keep the public away.
c. Set up safe walkways where it is unavoidable to work near or in public vicinity.
d. Arrange noisy equipment or machinery at farthest point from the public or adopt an engineering control to reduce the noise.
e. When overhead crane is operating near the public, clear off the area and make sure adequate supervision is in place.
f. Schedule for daily cleaning of the adjacent public road and filling up holes as well as uneven surfaces.

5.4.19 **Types of Risks and factors affecting night-time work**

To decide when to conduct nighttime work, factors (parameters) affecting nighttime work must be identified. The *Contractor* must ensure the following factors are identified:

- Risk
- Illumination
- Nuisances
- Productivity
- Cost
- Safety

The Contractor must ensure that they implement the following step in an effective risk management program as to identify possible risks. Specific concerns related to nighttime work zones include poor visibility and work quality, staffing issues, unwanted

noise, and glare, decreased worker and driver alertness, impaired drivers, higher vehicle speeds, increased labor costs, materials and traffic control, and problems in logistics and supervision. These risks are categorized broadly as safety, cost/production and schedule, quality, organizational relationships, technical, construction, economic and environmental.

5.4.20 **Risk**

Nighttime construction introduces numerous risks to a construction project. One clear set of examples is driver and worker fatigue and reduced visibility, which are factors that could increase safety risks. Other major factors contributing to the risks of nighttime work are human factors such as sleep, stress, work, social or domestic issues, and psychological characteristics, such as appetite and safety. Additional factors associated with the risks of nighttime construction work zones are reduced workspace for machinery and equipment movement, inadequate lighting, high speed of traffic during the night, and long working hours. Working at night does not supersede the requirements of the Project Health and Safety Specification requirements that enforces compliance during day shift.

5.4.21 **Document Control**

All safety documents shall comply with the Project Document Control Procedures.

5.4.22 **Medicals**

Pre-employment medicals, including chest X-ray examinations, specific for the Contract will be required for all employees working on the Site regardless of duration spent on Site. Exit medicals, including chest X-ray examinations will be required at the end of the Contract. A registered Occupational Health Practitioner must carry out these medical examinations.

The *Contractor* must ensure that budget provision for SHEQ requirements are in place.

5.4.23 **Environmental Constraints and Management**

The following documents shall be used to ensure an integrated approach to environmental management. This approach is designed to guide the appropriate allocation of human resources, assign responsibilities, develop procedures, and ensure project compliance with regulatory and best practice requirements.

a) Transnet Integrated Management System (TIMS) Policy Commitment Statement IMS-GRP-GDL-002-1 **(Annexure A)** Contractor Environmental and Sustainable Specifications TRN-IMS-GRP-GDL-014.4 **(Annexure B)**
b) Transnet Construction Environmental Management Standard Operating Procedure 009-TCC-CLO-SUS-11386 **(Annexure C)**

5.4.24 The Declaration of Understanding 009-TCC-CLO-SUS-TMP-11386 (**Annexure D**) shall be signed and submitted to the CM within 14 days after the contract date.

5.4.25 Where required, one of the first actions to be undertaken by the *Contractor* shall be to erect and maintain a temporary fence along the boundaries of the Site and working areas as applicable, and around any no-go areas identified on the layout plans, to the satisfaction of the *Project Manager*.

5.4.26 The *Contractor* must appoint a suitably qualified (Natural Science Degree) Environmental Officer (EO) to monitor compliance against the listed environmental standards and on-site environmental issues e.g., litter, spills, illegal activities, fence patrol, dust etc. This appointment, along with details of the individual being appointed and job description, must be sent to the *Project Manager* and/or Environmental Officer for approval.

5.4.27 During the construction period, the *Contractor* shall comply with the following:

5.4.28 A copy of the CEM SOP and Contractor Environmental and Sustainable Specifications shall be available on Site, and the *Contractor* shall ensure that all the personnel on Site (including Subc*ontractor*s and their staff) as well as suppliers are familiar with and understand the specifications contained in the documents.

5.4.29 Method statements that are required during construction must be submitted to the *Project Manager* for acceptance at least 20 days prior to the proposed commencement of the activity. Emergency construction activity method statements may also be required. The activities requiring method statements cannot commence if they have not been approved by the *Project Manager* and/or EO.

5.4.30 The method statements for Completion by the Contractor are contained within **Annexure** 009-TCC-CLO-SUS-TMP-11386.14 **E**.

5.4.31 The *Contractor* shall identify the kinds of environmental impacts that will occur because of his activities and then prepare separate method statements describing how each of those impacts will be prevented or managed so that the standards set out in this document are achieved. These method statements will be prepared in accordance with the requirements set out in the CEM SOP, Contractor Environmental and Sustainable Specifications, Environmental Baseline and Risk Assessment Reports.

5.4.32 The minimum method statements for Completion by the *Contractor* include, but are not limited to, the following where applicable:

a. Site establishment
b. Hazardous and non-hazardous solid waste management
c. Storm water management
d. Contaminated water management
e. Prevention of marine pollution

f. Hydrocarbon spills
g. Diesel tanks and refuelling procedures
h. Dust control
i. Spoil dumping
j. Sourcing, excavating, transporting, and dumping of fill material
k. Noise and vibration control
l. Removal of rare, endemic, or endangered species
m. Removal and stockpiling of topsoil
n. Rodent and pest control
o. Environmental awareness training
p. Emergency procedures for environmental incidents
q. Rehabilitation

5.4.33 Where required, one of the first actions to be undertaken by the *Contractor* shall be to erect and maintain a temporary fence along the boundaries of the Site and Working Areas as applicable, and around any no-go areas identified on the layout plans, to the satisfaction of the *Project Manager*.

5.4.34 The plant search and rescue (if applicable) must be undertaken and completed prior to any Site clearance or any other construction activity that may damage the vegetation can commences on Site.

5.4.35 The *Contractor* shall ensure that any Materials delivery drivers are informed of all procedures and restrictions (e.g., which access roads to use, no go areas, speed limits, noise, etc.) required by the CEM SOP and Contractor Environmental and Sustainable Specifications before they arrive at Site and off load any Materials.

5.4.36 A copy of the CEM SOP, and the relevant PES shall be available on Site, and the *Contractor* shall ensure that all the personnel on Site (including Subcontractors and their staff) as well as suppliers are familiar with and understand the specifications contained in the CEM SOP (as amended by the PES).

5.4.37 The *Contractor*'s EO submits daily, weekly, and monthly checklists to the *Project Manager*.

5.4.38 The Contractor complies with environmental inspections and audits as contained within CEM.

5.4.39 The *Contractor's* EO must scan environmental file monthly during construction according to the environmental file index and send the soft copy to the *Employer*. The *Contractor* must make copies of the CEM SOP and Contractor Environmental and Sustainable Specifications available at the offices of the *Contractor* on Site. The *Contractor* ensures that all personnel on Site (including Subc*ontractor*s) are familiar with and understand the

requirements of the CEM SOP, Contractor Environmental and Sustainable Specifications and Environmental Baseline and Risk Assessment Reports.

5.4.40 The lines of communication of the various personnel acting on behalf of the *Project Manager* who communicate to the *Contractor* and his keys persons contained with Contractor Environmental and Sustainable Specifications.

5.4.41 The *Contractor* shall be responsible for rehabilitating and re-vegetating all areas to the satisfaction of the *Project Manager* as detailed in the CEM SOP and PES. The *Contractor* shall clear and clean the Site and working areas and ensure that everything not forming part of the *works* is removed from the Site and working areas and that all re-instatement has taken place in accordance with the CEM SOP and Contractor Environmental and Sustainable Specifications.

5.4.42 A site closure audit will be conducted by the *Employer*'s EO of which upon closure of all findings and observations. The *Contractor*'s EO must scan the entire environmental file according to the environmental file index and send both the hard and soft copies to the *Employe*r. An Environmental Closure Certificate TRN-IMS-GRP-TMP-014.23 **(Annexure F)** has been issued by the Transnet EO and signed off by the *Project Manager*.

5.5 Quality assurance requirements

5.5.1 The Contractor shall execute the works in accordance with the project approved specification "General Quality Requirements for Contractors and Suppliers" - **QAL-STD-0001 Rev0** included in **Annexure I** of the *Works Information*.

5.5.2 The Contractor shall submit his Quality Assurance (QA) proposal(s) for the contract. This proposal shall detail the Contractor's quality management system as it applies to all aspects of supply or service provision including Design, Procurement, Manufacturing, Installation/Erection and Commissioning. Additionally, the Contractor shall include for the provision of suitably qualified quality control staff to manage and carry out inspection on all Supplier/Subcontractor activities in all disciplines included within the *Works Information.*

5.5.3 The Quality Policy is a concise document, approved by the Contractor's executive management that defines organisational goals and objectives regarding quality, a commitment to meeting stated requirements and an undertaking to drive continuous improvement throughout the organisation's activities. It must be suitable for the organisation and provide a framework for stabling, communicating, and monitoring performance against agreed quality objectives.

5.5.4 The Contractor shall submit a Project Quality Plan (PQP), which shall also contain specific proposals and details regarding Quality Control for the works. The PQP includes

Contractor's statement that outlines strategy, methodology, resources allocation and details about quality control for the works.

5.5.5 The PQP is generally in narrative form detailing the Project Specific QA and QC systems and controls required by the Contractor for the specific works. Where the Contractor intends to employ any third-party organisations to execute quality related activities on his behalf, such intentions shall be stipulated in the PQP.

5.5.6 The Contractor shall provide a full-time resident quality manager for all aspects of the works including Site activities, with a staff adequate to perform the requirements of his quality plan and quality management system.

5.5.7 The nominated individual shall be fully conversant with quality management on major construction projects and the maintenance of an appropriate ISO 9001 Quality Management System.

5.5.8 The Contractor shall submit the CV of his quality manager for the *Project Manager's* review and approval with a complete proposed organogram clearly indicating reporting levels and the number of resources dedicated to quality assurance and quality control.

5.5.9 The Contractor shall have, maintain, and demonstrate its use to the *Project Manager* and/or the Supervisor to satisfy the requirements, as appropriate, of the documented Quality Management System to be used in the performance of the works. The Contractor's Quality Management System shall conform to International Standard ISO 9001 (or an equivalent standard acceptable to the *Project Manager*).

5.5.10 The Contractor submits his Quality Management System documents to the *Project Manager* as part of his programme under ECC3 Clause 31.2 to include details of:

a. Quality Policy.
b. Project Quality Plan for the contract.
c. Index of Procedures to be used; and
d. A schedule of internal and external audits during the contract

5.5.11 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.

5.5.12 The *Project Manager* indicates those documents required to be submitted either for information, review or acceptance and the Contractor indicates such requirements within his register of documents. The register shall indicate the dates of issue of the documents with the *Project Manager* responding to documents submitted by the Contractor for review or acceptance within the period for reply prior to such documents being used by the Contractor.

5.5.13 The requirements for a PQP are detailed in the project standard **QAL-STD-0001 Rev0** and shall include but not be limited to the following:

a. Include a listing of all special processes (e.g., welding, and non-destructive testing, cube testing etc.) envisaged for use, including confirmation of personnel certification as required
b. Include a list of all proposed method statements (for Site based work activities)
c. Include all quality activities relevant to the works, identifying all procedures, reviews, audits, controls, and records used to control and verify compliance with the specified contractual requirements
d. Include a description of the Supplier/Contractor's project organization, with key positions and responsibilities identified and individuals named. The organization structure shall also indicate the resources committed to the management / coordination of QA / QC activities both within the main Contractor's organization and that of his Sub-Contractors and Suppliers
e. Include a listing of all pre- approved Quality Control Plans (QCP's), Quality Inspection Test Plans (QITPs) and associated Field Inspection Checklists (FIC's), as applicable
f. Identify in the Project Quality Plan any Sub-Supplier/Sub-Contractor work. Sub-Supplier/Sub-Contractor plans shall be approved by the Supplier/Contractor, and a copy forwarded to the *Project Manager*
g. Include the proposed **Authorized Inspection Authority (AIA)** (where applicable - for pressurized equipment and systems at fabrication factory and at site pre-commissioning stage)
h. Include a schedule of proposed quality records (Data Book Index) which will form the permanent record of conformance to requirements.

5.5.14 The index of procedures shall contain a list of the Contractor's quality management system procedures to be applied during the project including any relevant work instructions or 3rd tier quality system documentation. Where aspects of the works are to be subcontracted, the Contractor shall include procedures for the management of Suppliers and Sub-Contractors.

5.5.15 A schedule of internal and external audits during the contract means a schedule provided by the Contractor detailing the location, frequency, and extent of internal and external quality system audits to be carried out on during the contract period. The schedule shall include all locations including construction Site and supplier/service providers.

5.6 Programming constraints

5.6.1 The *Contractor's* construction WBS as a minimum shall include but not be limited to the following WBS Elements:

a. Procurement and delivery of all long lead items necessary to Provide the *works* in line with the stipulations of the *Employer's* Works Information. Long lead items

include but are not limited to; Plant, equipment, materials and any other resources, as required to provide both temporary and permanent *works*.

b. *Contractor's* design as a well as associated procedure for *Contractor's* design submission and acceptance of any portion of the *works* and/or approval of Plant as stipulated under Sections 1 Clause 2 of the Works Information in accordance with the stipulations for submission, acceptance and approval as stipulated under the relevant section(s) of the *Employer's* Works Information*;* including any other additional design requirements, interfacing and or alterations in existing design which may stem from the aforementioned.

c. Manufacturing and or Fabrication both on and off-site which may include but is not limited to; Plant, equipment, materials and any other resources, as required to provide both temporary and permanent *works*.

d. Preparation and Approvals of Health & Safety, Environmental and Quality Documentation.

e. Approval of any applicable permits, permissions and licenses, including inductions

5.6.2 The *Contractor's* construction programme shall correspond with the *Contractor's* Method Statements, Quality Control Plans and Risk Assessments, as drafted in line with the *Employer's* stipulations.

5.6.3 The *Contractor* uses Primavera Professional version 19.12 for his programme submissions, or similar approved software with the prior written consent of the *Project Manager*. In the event that the *Contractor* will be using earlier or later versions of the software, the onus is on the *Contractor* to ensure that a conversion is done in order for the XER file to be compatible with Primavera Professional version 19.12.

5.6.4 The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements of the [CEM SOP, Contractor Environmental and Sustainable Specifications, PES and SMP] as described under the relevant sections of the Works Information, together with the associated environmental method statements.

5.6.5 The *Employer* (including the agents of the *Employer*) operates on *Site* during dates or timings when the *Contractor* has completed certain elements of the *works* and/or during the contract period as stipulated in this Works Information.

5.6.6 Others operate on *working area* during dates or timings when the *Contractor* has completed certain elements of the *works* as stipulated in this Works Information

5.6.7 The *Contractor's* first programme submitted for accepted shall be agreed during the pre-contract negotiation period, and no later than the period stipulated under Contract Data Part One (2 weeks after the Contract Date).

5.6.8 The *Contractor* complies with the *Employer's* high-level programme when he submits his first programme for acceptance.

5.6.9 The *Contractor* presents his first programme for acceptance and all subsequently revised programmes (see ECC Clauses 31.2 and 32.1) in hard copy and soft copy format.

5.6.10 The *Contractor* shows on his programme submitted for acceptance and all subsequently revised programmes, the critical path or paths and all necessary logic diagrams demonstrating sequence of operations.

5.6.11 The *Contractor*'s programme shows duration of operations in working days as per the stipulated definition of the workdays and hours in the *Employer's Works* Information.

5.6.12 Each programme submitted by the *Contractor* to the *Project Manager*, is fully Cost and Resource Loaded (People, Equipment, Plant, Materials & Other Resources) with the exception of the *Contractor's* tender programme submission.

5.6.13 The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements as listed in the NEC 3, ECC, Clause 31.2.

5.6.14 The *Contractor* attends, participates in and makes a meaningful contribution to, planning initiation & set–up meetings held during the pre-contract negotiation period and no later than the period stipulated under *Contract Data Part One* (2 weeks after the Contract Date); to agree and set-up including but not limited to - the first schedule for acceptance; monitoring, control and reporting requirements; proposed templates and planning/scheduling procedures to be complied with for the duration of the project.

5.6.15 The *Contractor* shows on each revised programme he submits to the *Project Manager* a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the *Contractor*, including a spread sheet identifying instances of resource over-allocation and/or conflicts, accompanied by proposed resolutions.

5.6.16 The *Contractor*'s programme shows the following levels:

a. Level 1 Master Schedule – defines the major operations and interfaces between engineering design, procurement, fabrication and assembly of Plant and Materials, transportation, construction, testing and pre-commissioning, commissioning and Completion.

b. Level 2 Project Schedule – summary schedules 'rolled up' from Level 3 Project Schedule described below.

c. Level 3 Project Schedule – detailed schedules generated to demonstrate all operations identified on the programme from the starting date to Completion. Individual operations will be assigned a code. The *Employer* notifies any subsequent layouts and corresponding filters on revised programmes.

d. Level 4 Project Schedule – detailed discipline/speciality level schedule decomposed to the appropriate levels of detail in order to accurately substantiate activity scope and activity duration estimates; developed and maintained by the *Contractor* relating to all operations identified on the programme representing the daily activities by each discipline, with activities and operations adequately decomposed in order to accurately represent the effort required to execute said activity/operation and support accurate duration estimates.

e. A narrative status report, which includes but is not limited to status and performance of operations on the *Site* and Working Areas; status and performance of operations outside the Working Areas; manpower histograms; S-curve of overall progress; critical action items (top 10) and deviations from the Accepted Programme and action plan to rectify.

f. Basis of Programme/Schedule document detailing but not limited to the following minimum requirements:

- Basis of latest accepted programme, including an overview of assumptions, constraints, specific and quantified resource allocations, productivity assumptions and basis of calculation, identification and justification of general scheduling provisions such as calendars and working times, lags, date constraints, activity durations longer than one reporting period, etc.
- Description of network logic and sequencing.
- Description of general construction approach.
- Description of approach to allocation, use and management of all resources dedicated to the project.
- Description of and trend analysis of critical risks as identified through schedule risk analysis and included in schedule contingency and or Time Risk Allowance provisions.
- Discussion regarding the basis, method of calculation and validity of the critical path and near critical paths, (interrogate longest path and total float as contained in the programme).
- Reporting on change management, i.e., identify and record any deviations/changes that have taken place within the previous reporting cycle, and their resultant impact on the remaining *works* and as identified and highlighted in the current revision of the programme for acceptance.
- Identification critical activities, as well as top 10 near critical activities and undertake tends analysis on such activities with the aim to identify any deviations from planned performance.

- Identification of any recovery and or mitigation action required to neutralise any deviations.

5.7 Reporting and Monitoring

5.7.1 The *Contractor* attends meetings as included but not limited to Section 2 Clause 5 of the *Employer's Works* Information.

5.7.2 The *Contractor* attends weekly planning meetings. Meeting agenda to include progress reporting as detailed under Section 2 Clause 5.10 of the *Employer's* Works Information, recovery/optimisation, contractual matters in line with NEC ECC core clauses 31, 32 and main option clause, Option B.

5.7.3 The *Contractor* submits programme narrative report to the *Project Manager* at weekly intervals in addition to the intervals for submission of revised programmes stated under *Contract Data Part One*. The *Contractor* also submits fortnightly expediting report and monthly programme narrative report to *Project Manager*.

5.7.4 The *Contractor* completes an assessment of all activities in progress and to completion to determine physical percentage complete, forecasted completion dates, deviations from the Accepted Programme and proposes remedial action to rectify deviations.

5.7.5 The *Contractor* shows on each revised programme he submits to the *Project Manager* a resource histogram showing planned progress versus actual, deviations from the accepted programme and any remedial actions proposed by the *Contractor*.

5.7.6 The *Contractor* submits the programme narrative report detailing the status and performance of operations on the Site and Working Areas, status and performance of operations outside the Working Areas, man-power histograms, Plant and equipment histograms, S-curve of overall progress, and critical action items (top 10). Report shall indicate "progress this period" and "progress to date".

5.7.7 The *Contractor*'s **weekly** project progress report (narrative report) includes but is not limited to:

a. Level 4 Project Schedule – showing two separate bars for each task i.e., the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted Programme.

b. Progress Spreadsheet detailing actual progress achieved (target/planned quantity versus actual quantity) on current (critical) activities for the previous week, planned progress for the current week, deviations and proposed recovery for each activity in question. A 1-week Look Ahead Spreadsheet in line with the aforementioned stipulations to be included. Priority to be given to identification of critical activities, progress and any deviations from planned performance in this regard.

c. 3-week Look Ahead Schedule showing two separate bars for each task i.e., the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted Programme.

d. Dependencies/Deliverables matrix detailing interim approvals and/or any other inputs/requirements from *Employer/Supervisor/Project Manager/Others* or any other project *Stakeholder* in line with the activities identified in the 3-week Look Ahead Schedule.

e. Interfacing Matrix, detailing timeous identification of any requirements for providing the *works* and/or *works* to be executed by *Others* and any other *Stakeholders* party to this contract in line with the stipulations of the *Works Information*.

f. Manpower Histogram – reflecting actual, forecasted and planned activities.

g. Plant and Equipment Histogram – reflecting actual, forecast and planned activities.

h. S-curves – reflecting the actual percentage complete versus the planned percentage for the overall contract.

i. Identification critical activities, progress and any deviations from planned performance.

j. Adherence and actual performance achieved with regards to Environmental, Health & Safety and Quality Management.

5.7.8 The *Contractor's* **fortnightly** expediting report includes but is not limited to:

- Based on the Accepted Programme/ latest programme submitted for acceptance the *Contractor* submits a cash flow forecast report that details the anticipated monthly cash flow, represented by the expected assessment of the amounts due, to the *Project Manager*. The cash flow forecast is to be extrapolated from the latest Accepted Programme through the mechanism of the cost loaded schedule or other similar methodologies with the prior approval of the *Project Manager*.
- The *Contractor* shall submit to the *Project Manager*, a bi-weekly report on progress of any off-site manufacturing activities undertaken during the previous half-month.

5.7.9 The *Contractor*'s **monthly** project progress report includes but is not limited to:

a. Monthly, the Contractor completes an assessment of all activities in progress and to completion, and accordingly revises and submits the updated programme for acceptance and cash flow forecast report detailing any variances and proposes remedial actions to rectify deviations.

b. The *Contractor's* monthly programme narrative report is submitted a week before the last Friday of each month, or as required by the *Project Manager*. The report

shall indicate "progress this period" and "progress to date" and shall include, but is not limited to, the following;

- Summary of progress achieved during the reporting period.
- Latest Accepted Programme.
- Deviations from the current Accepted Programme and action plans to rectify.
- Project milestones table – planned versus actual and forecast.
- Status and performance of operations on the site and Working Areas.
- Status and performance of operations outside Working Areas.
- Cash flow forecast report.
- Digital photographic record of the progress of the *works*.
- Manpower histograms, including a control spread sheet detailing specific over allocation and/or conflicts in allocation of resources.
- *Contractor's* Plant and equipment histograms, including a control spread sheet detailing specific over-allocation and/or conflicts in allocation of resources.
- S-curves of overall progress.
- Critical action items list (top 10).

5.8 Contractor's management, supervision, and key people

5.8.1 The *Contractor* shall make an adequate, experienced, and stable project team available for the duration of the contract. Every effort must be exercised by the *Contractor* to minimise the replacement of project team members to ensure optimum contract management continuity and efficiency.

5.8.2 On an active site, the *Contractor* shall make sure that is always equipped with experienced site supervision to monitor and manage site work force and the works. All active sites will have at a minimum a Site Supervisor/Forman and Health, Safety and Environmental Officer and any engineering support that might be required. They will keep constant communication with the contractor's *Project manager* and Construction manager.

5.8.3 The *Contractors* Construction manager will be responsible for all site construction and will have to rotate between active sites.

5.8.4 The *Contractor* employs full time, fully qualified and experienced key persons who have been delegated sufficient authority to manage the contract efficiently on-site during completion of the *works* including and not limited to:

a. Project Manager
- Project Manager with a minimum Btech/B.Eng. or similar: Engineering & Built Environment with a Post Grad Diploma in project management certificate or PMP certification. With a minimum of 10 years petrochemical experience. Must have NEC3 ECC experience or provide supporting documents of Contracts manager with NEC3 ECC experience.

b. Engineering Manager
- Engineering Manager should have at least have a minimum qualifications Bsc. Eng/B.Tech in Built Environment qualification/s, a minimum of 15 years' experience in construction and building sector. Demonstratable knowledge and experience in successfully managing large infrastructure projects more than R50 Million, preferable in the petrochemical sector, knowledge of the principles, practices and methods of petrochemical engineering and infrastructure design and construction. The engineering manager must be registered with Engineering Council of South Africa (ECSA).

c. Contracts Manager
- The Contracts Manager should at least have a minimum qualification of a Legal/ BSc. Eng./ B.Tech./ National Diploma of a Commercial qualification. The Contracts Manager must have experience working with the NEC3 Engineering and Construction Contract in at least 3 separate projects.

d. Construction Manager
- The Construction Manager should have technical qualification with SACPCMP registration as Pr. CM with at least 10 years of experience in Mechanical projects. The Construction Manager must have experience working with the NEC3 Engineering and Contracts.

e. Site Supervisor/Foreman
- Minimum 10 years of petrochemical experience, training in IRCON, legal liability and hazard identification and risk assessment (HIRA)

f. Planner
- The planner should at least have an Engineering Diploma and a minimum of 5 years' experience working in construction projects as planner.

g. Quality Controller Officer

- Quality Controller official should have a Diploma or Certified qualification in quality systems with relevant quality experience in construction. At least 5 years of experience in a quality systems environment and relevant experience in the following activities: (1) excavations & waste management, (2) civil engineering works, (3) tanks fabrication, transportation, preservation, and installation works, (5) auxiliary electrical and piping construction projects is required preferably with Oil & Gas projects background.

h. Safety Officer

- Health and Safety Officer should have SAMTRAC, NEBOSH and Modern SHEQ Risk Management (MSRM) training course with accredited health and safety service provider as a minimum qualification and registered as a Health and Safety Officer with SACPCMP. At least 5 years' experience as a Safety, Health and Environmental Officer on construction projects. The SHE must also have undergone Environmental awareness and short courses.

i. Environmental Officer

- Environmental officer should have Diploma/B-tech/Degree in Environmental Management or relevant qualification and at least 3 years experience as Environmental Officer on construction projects.

j. Document Controller

- Document controller should have at least 5 years of experience working in construction and experience working with the NEC3 Engineering and Construction.

k. Security Manager

- A Security Manager should have a Diploma in Security Risk Management or relevant field, i.e. law enforcement.
- PSIRA Grade A registered and valid certificate.
- Two years' experience as a Manager and at least three years as a supervisor.
- Knowledge of the construction site/industrial security.
- Knowledge of relevant security legislation, i.e. Control of Access to Public Premises and Vehicles Act, POPI Act, Dangerous Goods Act, Firearms Control Act, etc.
- Knowledge of the Occupational Health and Safety Act.

5.8.5 The *Contractor* employs personnel listed above but not limited to those mentioned in order to perform the functions of key persons under NEC3 ECC Clause 24.1. These appointments shall have the necessary experience and be suitably qualified.

5.8.6 The *Contractor* provides an Organogram of all his key people (both as required by the *Employer* and as independently stated by the *Contractor* under Contract Data Part Two) and how such key people communicate with the *Project Manager* and the Supervisor and their delegates all as stated at paragraph 2.5 of C3.1 *Employer's* Works Information.

5.9 Training workshops and technology transfer

5.9.1 Contractor organises 3 times training per terminal to operate the Fuel Facility.

5.9.2 Contractor to provide specific manuals for training according to the Fuel Facility.

5.9.3 Contractor Provides Operation and Maintenance specific manual for each Fuel Facility at every terminal.

5.9.4 Contractor transfers Databook's, O&M Manuals Maintenance Manual and Training Manuals to the *Employer*.

5.10 The *Contractor's* Invoices

5.10.1 When the *Project Manager* certifies payment (see ECC Clause 51.1) following an assessment date, the *Contractor* complies with the *Employer's* procedure for invoice submission.

5.10.2 The invoice must correspond to the *Project Manager's* assessment of the amount due to the *Contractor* as stated in the payment certificate.

5.10.3 Invoices must be submitted by the 18th of the month forecasted to the 25th of the month.

5.10.4 The invoice states the following:

- Invoice addressed to Transnet SOC Ltd;
- Transnet SOC Limited's VAT No: 4720103177;
- Invoice number;
- Registered name of contractor
- Address (Physical and Postal) of the Contractor,
- The *Contractor*'s VAT Number; and
- The Contract number

5.10.5 The invoice contains the supporting detail

- The amount paid to date;
- Amount for payment (Excluding VAT);
- VAT amount;
- Amount for payment (Including VAT)
- Any Retention monies to be deducted from the invoice;

- Any Interest payable;
- Escalation amount formula used where applicable;
- Settlement discount;
- Proof of ownership of Materials supplied;
- A statement is to accompany each invoice

5.10.6 The invoice is presented either by post or by hand delivery.

5.10.7 Invoices submitted by post are addressed to:

Transnet Port Terminals
202 Anton Lembede Street
Durban
4001

The invoice is presented as an original.

5.10.8 The Contractor ensures that The *Employer* has his correct banking information to make the electronic payment transfer.

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

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