
PART C3: SCOPE OF WORK

Scope Of Work for the Professional Services

Project Name : Construction Management Services for the Refurbishment of the Port Elizabeth Manganese Terminal

Date: 24/08/2023

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1. Project Background

1.1 EXECUTIVE OVERVIEW

The *works* that the Service Provider is to perform *involves* the project and construction management of the activities involved in conducting a refurbishment of the Port Elizabeth Manganese Terminal.

The contractual period for the Construction Management Contractor scope of works is 2 years and aligned to the execution schedule. The execution schedule is as per section 2.3

The refurbishment of the Terminal is scheduled to commence during November 2023 and to coincide with the annual Manganese Ore Industry shut.

The majority of the equipment and structures are over 50 years old and well over the expected design life.

The Manganese Terminal has little operational redundancy when handling Manganese Ore volumes. Works, where possible, will be executed alongside operations or during the yearly planned Terminal Maintenance shuts.

A major refurbishment is an opportunity to address equipment reliability issues.

The refurbishment project is required to ensure the optimal operational use and availability of the Bulk Material Handling Equipment and the Manganese Terminal.

1.2 EMPLOYER'S OBJECTIVE

The ultimate goal of this refurbishment project is to ensure that the Bulk Material Handling equipment operates safely and reliably, for the remainder of the Terminals operational life.

This refurbishment project is to extend the life of the Terminal and is not an equipment upgrade as no increase in volume throughput will be realized.

1.3 INTERPRETATION AND TERMINOLOGY

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
BOT	Bulk Ore Terminal
CMC	Construction Management Contractor
E,C & I	Electrical, Controls & Instrumentation
H&S	Health and Safety
NEC	New England Contract
NCR	Non Conformance Report
PCM	Project/Construction Manager
PE	Port Elizabeth

QA/QC	Quality Assurance/Quality Control
SANS	South African National Standards
SHE	Safety, Health and Environment
TIMS	Transnet Integrated Management System
TPT	Transnet Port Terminals

1.4 SITE LOCATION & GENERAL LAYOUT



Figure 1 - Port Footprint

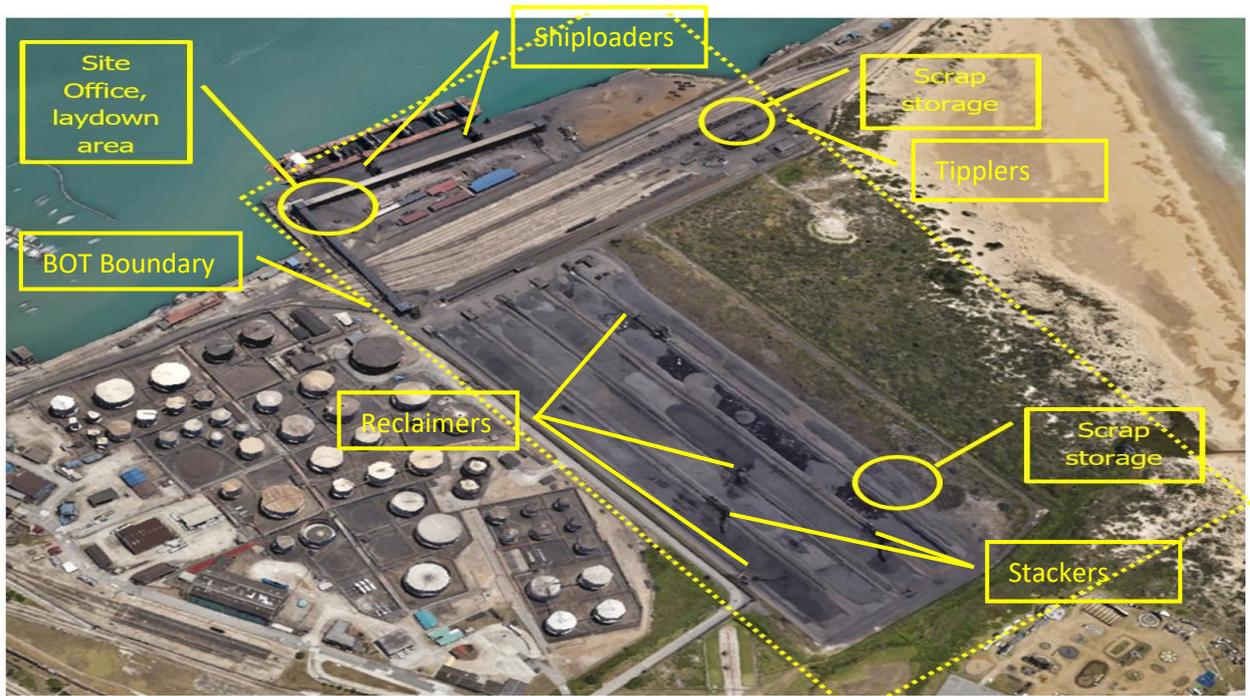


Figure 2 – BOT Refurbishment Area

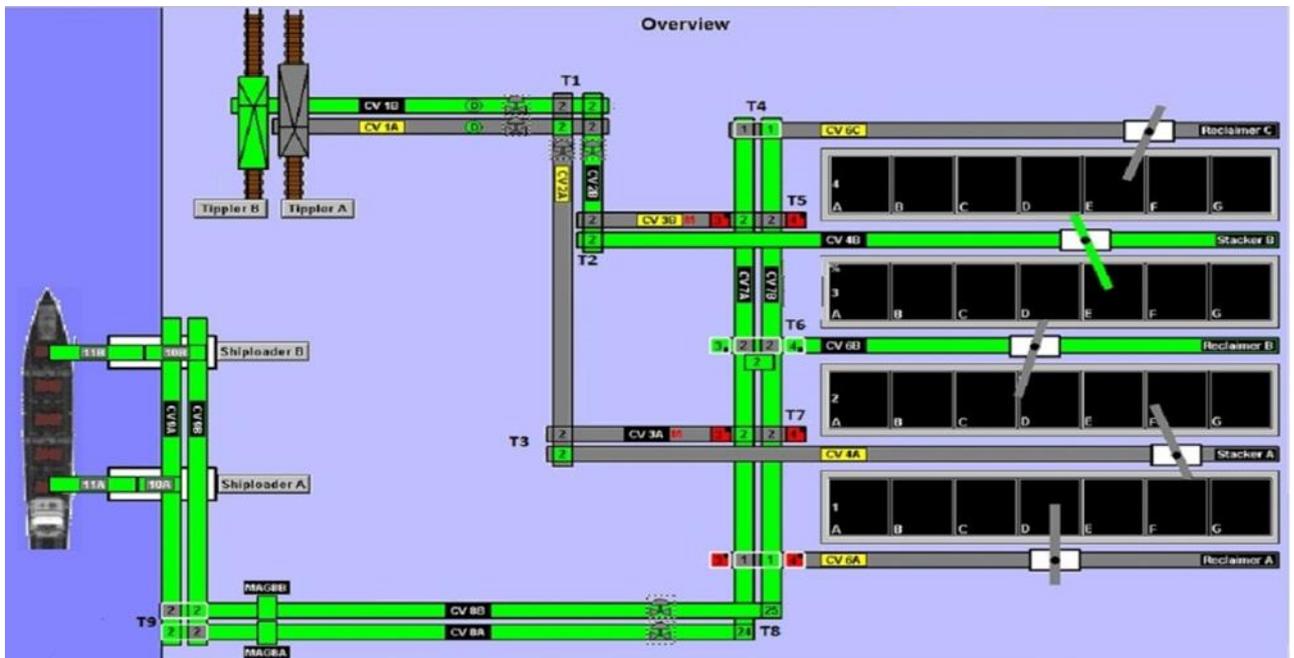


Figure 3 – Schematic Layout

1.5 PROJECT BACKGROUND INFORMATION

During the scope finalization of this refurbishment the following were taken into consideration:

- Installation of technological improvements;
- Carry out structural repairs;
- Implement large scale corrosion protection
- Renew the integrity of electrical components of the asset;
- Refurbish components or systems that are normally only exposed to maintenance services, e.g. gearboxes, to ensure life expectancy and maintain reliability;
- Replace components that have become obsolete; and
- Replace components where interchangeability with replacement parts is not possible without equipment outage.

The scope of the refurbishment in relation to the PE BOT is categorized into three engineering disciplines, namely: mechanical, structural and, electrical control and instrumentation.

- Mechanical - includes components or systems such as the open gear systems, gearboxes, hydraulic systems, and rotating and moving parts;
- Structural - includes wear liners, supporting structures (if required) and areas of possible structural damage (cracking, deformation, wear). Additionally, includes maintenance inspection (e.g. non-destructive testing for fatigue fracturing) of areas where access to certain structures that is not normally possible while equipment is in service;
- Electrical, control and instrumentation (E,C & I) - includes panels and drives that are approaching the end of their useful life, or has become obsolete or, where newer technologies can be incorporated.

The Principal Contractors scope of works for the refurbishment can be found in Annexure 1

2. SCOPE OF WORKS

The scope of services will include for the CMC Services to manage the Principle Contractor during execution including Project Management and Construction Management. The Scope of Services are listed below:

2.1 SCOPE OF SERVICES

- Project/Construction Management
- Quality Management
- Safety and Environmental Management
- Schedule Management (Planning)
- Engineering Supervision (E,C&I, Mechanical and Structural)
- Administrative support/Document control

2.2 GENERAL OBLIGATIONS TO BE PERFORMED BY THE SERVICE PROVIDER

The Service Provider is required to provide Project and Construction Management services to TPT for the delivery of the works referred to above

- The Service Provider's Management team will participate in Project Progress meetings and other stakeholder engagement meetings (as and when necessary) with TPT management to review project progress; and
- The Service Provider will provide Project & Construction Management and co-ordination of all site work services including safety and environmental supervision as well as Quality Management; and
- The Service Provider will manage the refurbishment of the BOT where the refurbishment works will be carried out by the Principal Contractor 24/7. Employer requirement is that the CMC resources for H&S officers for 24/7 operations.
- The Service Provider will issue project reports in terms of progress status, memoranda for clarification of key technical issues, etc. as and when it may be necessary; and
- All Disbursements – travel, accommodation, e-mails, communication, meeting attendance, documentation, reports etc. are to be included within the Pricing.
- The Principal Contractor will be working 24/7 during the extended Terminal shut periods.

2.3 RESOURCING/PRICE REQUIREMENTS

The service provider to price according to the below hours

- Site establishment – 8hrs per day
- Site works – 10hrs per day. Exceptions: Doc control @ 4hrs per day, H&S Officers @ 12hrs per day.
- Close out – 8 hrs per day. Planner not required
- Retention release Only PM (8 hr day), Quality (8hr day) & Doc Control (2 hr day) required

Tender to take note of the split schedule and of the durations for Site establishment, Execution Period, Close out and retention release.

2.4 PROJECT SCHEDULE

Letter of Award: Estimated 01 May 2024

The execution schedule is based on the refurbishment schedule (See Annexure 1, Section 6.6.14 & 6.6.15) and is split over 2 years:

Key Milestones*:

2024 November Execution Period

- Site access/Establish 25 October 2024
- Execution commences 01 November 2024
- Execution Complete 14 November 2024
- Sectional close out 18 November 2024
- Retention Release 18 & 19 November 2025

2025 June Execution Period

- Site access/Establish 28 May 2025
- Execution commences 01 June 2025
- Execution Complete 10 June 2025
- Sectional close out 14 June 2025

2025 August Execution Period

- Site access/Establish 29 July 2025
- Execution commences 01 August 2025
- Execution Complete 10 August 2025
- Sectional close out 14 August 2025

2025 November Execution Period

- Site access/Establish 25 October 2025
- Execution commences 01 November 2025

- Execution Complete 14 November 2025
- Project close out 18 November 2025
- Retention Release 18 & 19 November 2026

Hours of work based on Key Milestones*:

Construction Management Contractor	
Labour Resource	Hours
Project/construction Manager	816
Administrator/Document Control	504
Supervisor E, C & I	784
Supervisor Structural	784
Supervisor Mechanical	784
Safety Officer/Manager 1	880
Safety Officer/Manager 2	880
Quality Manager	816
Planner	656
TOTAL	6 904

*Milestones/hours worked subject to change

2.5 VARIATIONS

Variations will be dealt with via Compensation Events as per NEC terms of Contract.

2.6 REFERENCE SPECIFICATIONS

2.6.1 Standard Specifications

- The Service Provider must ensure that all work is prepared and conducted in line with the applicable SANS codes.

2.6.2 Employer Specifications

- The following specifications must be adhered to in the execution of the project by the Service Provider. (Note: These specifications are available upon request)

Standard TPT Specifications:

Document Name	Document Description
Belt Conveyors & Associated Equipment	EEAM-Q-001
Specification – Hydraulic Equipment	EEAM-Q-002
Steel Wire Ropes	EEAM-Q-003

Gears–Shafts–Bear–Brakelube-V Belts	EEAM-Q-004
Structural Steelwork	EEAM-Q-006
Corrosion Protection	EEAM-Q-008
Quality Management	EEAM-Q-009
Reinforced Concrete & Steel structures	EEAM-Q-010
Gen Electric Equipment	EEAM-Q-012
Commissioning & Handover	EEAM-Q-013
Electric Motors	EEAM-Q-014
General Requirements and Conditions	EEAM-Q-016
MV Switch Control	EEAM-Q-017
Lighting on Equipment	EEAM-Q-018
Cable Reel Systems	EEAM-Q-019
Tests on Electrical Equipment	EEAM-Q-020
Electronic Equipment	EEAM-Q-021
Medium Voltage Equipment	EEAM-Q-023
Supply of Electrical Equipment	EEAM-Q-030

Project Documents:

Document Name	Document Description
Health and Safety Management Plan	Z.3200041-HSMP
Health and Safety Specification	Z.3200041-HSS
Environmental Baseline Report	Z.3200041-EBR
Environmental Risk Report	Z.3200041-ERR
Engineering Report	Z.3200041-ER
Commissioning Plan	Z.3200041-CP
Quality management plan	Z.3200041-QMP
Construction Management Plan	Z.3200041-CMP
Security Management Plan	Z.3200041-SMP
Communication Management Plan	Z.3200041-CMR

2.7 ASSUMPTIONS AND EXCLUSIONS

Award of the Principal Contractor will be the responsibility of TPT.

2.8 TECHNICAL REQUIREMENTS

The Service Provider in the provision of services shall observe all relevant statutes, by-laws and associated regulations, applicable standards published by the South African Bureau of Standards, the International Organization for Standardisation or learned societies and standards of professional conduct, and "best practice", as laid down, or recommended, by their respective professional associations, if any.

2.9 OWNERSHIP OF DATA, DESIGNS AND DOCUMENTS

The Parties shall agree that copyright in the data, design and documents shall, after payments by the Employer of the services to the Service Provider, lie with the Employer subject to the Employer's indemnification against any claim from any party that may arise as a result of the Employer's use of such a document due to the Service

Provider's infringement of copyright.

2.10 FACILITIES AND EQUIPMENT TO BE PROVIDED BY THE EMPLOYER

No "Special" facilities or equipment is provided by the Employer. Site facilities will be part of the Principal Contractors Execution Contract. 6 work stations/chairs and ablution facilities are provided by the Principal Contractor. There is a canteen within the Terminal as well as meeting rooms which may be booked via the TPT Senior Project Manager. Printing and network connectivity is for the CMC to resolve.

2.11 MAN PLAN AND RESOURCING FOR SCOPE

The following resources will be required:

- Project/Construction Manager
- Document Controller
- Electrical Supervision
- Mechanical Supervision
- Structural Supervision
- Health & Safety Officers/Managers (To ensure support 24/7 within regulations.)
- Quality Manager
- Planner

Minimum Qualifications and experience for Key Personnel

Description	Minimum Qualification	Minimum Experience
Project/Construction Manager	SACPCMP – Registered as a professional Construction/Project Manager	10 years with similar type multi discipline projects. Minimum 5 years specific to Port Bulk Material Handling equipment (i.e. Tipplers, Stacker, Reclaimers, Shiploaders, Conveyor systems)
Health & Safety Officers/Managers	SACPCMP – Registered as a Health & Safety Officer/Manager	5 years in similar type multi discipline projects
Quality Manager	BTech Quality Management	5 years in similar type multi discipline projects
Mechanical Supervisor	National Certificate:N3 in the Specific Discipline	5 years' experience as a site supervisor
Electrical Supervisor	National Certificate:N3 in the Specific Discipline	5 years' experience as a site supervisor
Structural Supervisor	National Certificate:N3	5 years' experience as a site supervisor in structural related works

RESPONSIBILITIES

2.12.1. PROJECT/CONSTRUCTION MANAGER

The Project/Construction Manager's areas of responsibility shall be to achieve the following key deliverables:

- The PCM, is accountable for ensuring the efficient and effective delivery of the project. He has the overall accountability for the completion of scope, schedule and quality of the project. He provides routine and regular feedback to the TPT Senior Project Manager on Progress, issues or areas of concern. He has the delegated authority to make decisions and co-ordinate overall needs and direction in liaison with the TPT Senior Project Manager. He will review the progress of the project regularly with the TPT Senior Project Manager, and his team as necessary.
- The PCM will manage major issues, problems and policy conflicts, removes obstacles, is active in planning the scope & signs off major deliverables.
- Demonstrating personal commitment to safety and implement systems both in the office and on site to promote safety awareness and create a "safety first" culture.
- Ensure that the project is executed safely and in compliance with all regulatory requirements, company policies, standing instructions, safe working procedures and TIMS SHEQ guidelines
- Develop an appropriate organisation structure for execution of the project, identify functions necessary, select appropriately experienced and enthusiastic personnel for specific positions and delegate responsibilities.
- Establish specific policies/procedures relevant to project execution.
- Ensure that the project is executed in compliance with all regulatory requirements, company policies, standing instructions and working procedures.
- Set goals and objectives, identify priorities, clearly communicate these to team members and appropriate other parties, and provide leadership in their implementation. Motivate, ensure commitment and build a result oriented team focused on achieving the optimum outcome for the Employer.
- Direct, control and manage all aspects of the project including, refurbishment, interfaces, administration functions and all external work undertaking by contractors throughout the, supply, construction and commissioning phases of the project.
- Overview and ensure that work and progress on the project will satisfy the Employer's expectations.
- Maintain a relationship with the Employer.
- Maintain and display clear "ownership" and accountability for delivery of the project's business outcomes.
- Ensure initiation and execution of the work is such that completion of the project is achieved by the authorised completion date, within the authorised budget and equals or exceeds the expected quality.
- Ensure that all communication channels are effectively operating amongst project team members and business units and that co-ordination and co-operation between disciplines is occurring.
- Monitor and measure the work being executed regularly against schedule & milestone deliverables.
- Manage project scope and change control, escalating issues where necessary.
- Ensure that contractors are executing works according to their contractual obligations.

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- Recommend and implement corrective strategies where needed to best meet the Employers overall project objectives.
 - Ensure adherence to the project's authorised Scope of Work, monitor scope status and advise the Employer accordingly.
 - Defines and delegates the projects roles and responsibility to his Team.
 - Implement plans for commissioning / project handover.
 - Be responsible for communication with the Employer, particularly as regards requests for changes and modifications. Ensure contractual commitments regarding deliverables are met.
 - Compiling and communicating all project reports prepared for the Employer
 - Responsible for the preservation of Material and Equipment until handover to the Employer.

2.12.2 STRUCTURAL ENGINEERING SUPERVISOR

The Structural Supervisors area of responsibility shall be to achieve the following key deliverables:

- Review, familiarize and understand the proposed site including all constraints and environmental factors.
- Ensure that the appointed contractors work according to the statutory and safety regulations as well as provide the compulsory safety work plan for the execution of the construction works.
- Attend all site meetings, project meetings and relevant Employer meetings.
- Monitor the integrity of technical quality and performance aspects during the refurbishment and commissioning up to the final handover stage.
- To manage all commissioning activities relating to structural works and to ensure the provision of relevant systems manuals (If required)
- Manage the Training plan (If required)
- Prepare commissioning and handover reports alongside the PCM in preparation for handover to the Employer.
- Any other reasonable works required to successfully deliver the project to the Employer on time, on budget, at the expected quality.
- Provide Site supervision for the refurbishment works and ensure that the Contractors complete all works as per the approved structural scope of works
- The Service Provider shall adhere to all Transnet Port Terminals Engineering, project management and documentation control procedures, policies, practices and standards.

2.12.3 MECHANICAL ENGINEERING SUPERVISOR

The Mechanical Supervisors area of responsibility shall be to achieve the following key deliverables:

- Review, familiarize and understand the proposed site including all constraints and environmental factors.
- Ensure the appointed contractors work according to the statutory and safety regulations as well as provide the compulsory safety work plan for the execution of the construction works
- Attend all site meetings, project meetings and relevant Employer meetings.
- Monitor the integrity of technical, quality and performance aspects during the construction and commissioning up to the final handover stage.

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- To manage all commissioning activities relating to mechanical works and to ensure the provision of relevant systems manuals (If required)
 - Manage the Training plan (If required)
 - Prepare commissioning & handover reports alongside the PCM in preparation for handover
 - Any other reasonable works required to successfully deliver the project to the Employer on time, on budget, at the expected quality.
 - Provide Site supervision for the refurbishment phase and ensure that the Contractors complete all works as per the approved mechanical scope of works
 - The Service Provider shall adhere to all Transnet Port Terminals Engineering, project management and documentation control procedures, policies, practices and standards.

2.12.4 ELECTRICAL ENGINEERING SUPERVISOR

The Electrical Supervisors area of responsibility shall be to achieve the following key deliverables:

- Review, familiarize and understand the proposed site including all constraints and environmental factors.
- Ensure the appointed contractors work according to the statutory and safety regulations as well as provide the compulsory safety work plan for the execution of the construction works
- Attend all site meetings, project meetings and relevant Employer meetings.
- Monitor the integrity of technical, quality and performance aspects during the construction and commissioning up to the final handover stage.
- To manage all commissioning activities relating to electrical works and to ensure the provision of relevant systems manuals (If required)
- Manage the Training plan (If required)
- Prepare commissioning and handover reports alongside the PCM in preparation for handover to the Employer.
- Any other reasonable works required to successfully deliver the project to the Employer on time, on budget, at the expected quality.
- Provide Site supervision for the refurbishment phase and ensure that the Contractors complete all works as per the approved E, C&I scope of works
- The Service Provider shall adhere to all Transnet Port Terminals Engineering, project management and documentation control procedures, policies, practices and standards.

2.12.5 SAFETY AND ENVIRONMENTAL OFFICERS/MANAGERS

The Safety and Environmental Representative's area of responsibility shall be to achieve the following key deliverables:

- Responsible for managing compliance of safety and environmental activities on site. Any activities undertaken must be compliance with the existing AEL and any other permitting requirements
- Ensuring implementation of TIMS commitment policy statement
- Ensuring that contractors are executing works safely and in accordance to the Safety Plan that has been signed off with the Contractor.
- Ensuring all Contractors personnel have been inducted and are medically fit for duty.

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- Achieve the injury/incident frequency rate targets systems on site, and to promote safety awareness and create a "safety first" culture. Fulfil statutory obligations as Safety Administrator for areas of responsibility.
 - Ensure that the project is executed safely and in compliance with all regulatory requirements, company policies, standing instructions, safe working procedures and TIMS SHEQ guidelines
 - Maintain a relationship with the Employer and the Site Agent
 - Recommend and implement corrective strategies where needed in cases of risks identified on site, to best meet the Employer's overall project objectives.
 - Ensure that the Principal Contractor and subcontractors are working in accordance with their Safety Plan and adhering to the risk mitigations identified within the signed off risk assessment and safety plan.
 - Ensure contractor compliance with all Construction regulations and Environmental regulations.

2.12.6 QUALITY MANAGER

The QA/QC representative's area of responsibility, shall be to achieve the following key deliverables:

- Training all supervision personnel including those of the Principal Contractor to ensure they know, and they will be able to follow the Contract Quality requirements.
- Checking that construction activities are done in compliance with the project Quality Management Plan, project rules, procedures, and the instructions received from the PCM.
- Establishing, as a part of the Project Quality Management Plan, the Site Quality Management Plan (including audits programme).
- Ensuring that the Employer's requirements are understood by all parties including TIMS SHEQ guidelines
- Checking the Contractors QC procedures to ensure they are consistent with Project QC procedure.
- Performing audits on Principal Contractor's personnel, to ensure they are working in compliance with their approved working procedures.
- Managing the NCR process and following-up.
- Recommending and following up on corrective actions to preclude deficiencies.
- Having a clear record of authorized administrative or contractual documents, for Contractors personnel.
- Ensuring that all necessary quality construction records such as inspection and test documents are filed and maintained properly.
- Reporting to the PCM the status of Quality Management System and suggest improvements to the Quality Management System.

2.12.7 PLANNER

The Planner's areas of responsibility shall be to achieve the following key deliverables:

- Manage Project Planning in the monitoring, forecasting and planning functions on the project during execution.
- Be fully versed and functional in Microsoft Projects
- Consult, advise, direct and interface with all members of the Service Provider team with regards to project planning and schedule expertise and develop the detailed and required level of schedule

(Level 2, 3 and 4 if required) in line with scope of work as defined by the Contracting Strategy of the NEC suite of Contracts.

- Be capable of identifying Early Warnings through updates of Programs and evaluating such for any Compensation Events
- Provide insight and support to other disciplines within the Project team.
- Prepare preliminary and conceptual, presentations, on add hoc basis as and when required.
- Demonstrate Project planning principles at all times, best practise methods as well as understanding of critical path methods.
- Demonstrate analytical ability and logic in the preparation of high level schedules and in review of any schedules submitted to TPT by the Principal Contractor.
- Prepare schedules at various stages of the project at the expected levels of accuracy.
- Prepare reports at the various stages of the projects to the professional team and stakeholders.
- Attend all site Progress Meetings with the Principal Contractor.
- Any other reasonable works required to successfully deliver the project to the Employer on time, on budget, at the accepted quality.
- Analysing of time impact related to Compensation Events submitted by the Principal contractor.

2.12.8 ADMINISTRATOR/DOCUMENT CONTROLLER

The Administrator/Document controller’s area of responsibility shall be to achieve the following key deliverables:

- To manage all administrative and document control activities during the execution phase of the project.
- Provide administrative support to the project team
- Maintain, retrieve, organise and archive documents
- Liaise with the Employer document control lead to ensure all completion documents are archived according to the Employer Doc Control procedures

3. ANNEXURES

Annexure 1 – Principal Contractor Scope of Work

<p>Approved By:</p> <p>G Handley Acting Senior Manager</p>	<p>Approved By:</p> <p>A Stadler Senior Engineering Manager</p>
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