



PREPARATION, PLANNING AND SCHEDULING SPECIFICATIONS AND REQUIREMENTS

SCOPE OF WORK

DESCRIPTION OF WORK – GENERAL

Except as otherwise expressly provided herein, CONTRACTOR shall supply all labour/supervision/services/equipment (including safety equipment) tools and transport.

1. Liquid Refinery REINSTATEMENT(SHUTDOWN) preparation phase requirements

During Liquid Refinery REINSTATEMENT(SHUTDOWN) preparation phase PetroSA may require the assistance of the contractor for various activities as indicated below. PetroSA and the contractor shall agree on a list of services and a schedule of rates for these services to facilitate the service requests. The agreed schedule of rates shall become part of the Contract. Service/s will be requested per area / discipline scope of work given to this contractor by PetroSA. The prep and plan scope of work is for the following refinery units :

1.1 Onshore/GTL Refinery

- a) Refinery Units
- b) Reformer units
- c) Air and Gas Units
- d) Offsite and Utilities Units
- e) Blending and Storage

1.2 Offshore/ FA Platform

2. Scope Refinement

The contractor shall develop and refine detail scope of work from the preliminary scope of work, notifications, work orders, inspection records as well as experience gained from previous similar Liquid Refinery Reinstatement (Shutdown)

PetroSA shall ensure that competent Engineers and or Technicians are available to assist the Contractor with relevant plant walk downs, technical data, information and specifications. The availability of experienced Liquid Refinery Reinstatement (Shutdown).Planners to render this service shall be of the utmost importance for the success of the project. These Planners must be available up until the completion of preparation, planning and scheduling project.



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2.1 Detailed scope of work

2.1.1 RBI – Mechanical

A. GTL Refinery

Plant Area	No of Pressure Vessels	No of Pipelines	No of PSV	No of Tanks
Air Gas Separation	52	102	52	9
Reforming	45	85	45	6
Blending & Storage	13	40	276	69
Offsite & Utilities	180	115	222	80
Refinery	279	2664	205	1
Synthol	250	2220	185	10
Workshop	TBC	TBC	TBC	TBC
Blast & Painting Yard	TBC	TBC	TBC	TBC
GTL Re-instatement Totals	819	5226	985	175

B. FA Platform Mechanical Equipment scope of work

Description	QTY
Main Equipment	85
Pressure safety valves	43
Corrosion coupons	22
Mechanical Valves	121
Level glasses	44
ESDV's	125
Rotating Equipment	46
Total Number of Mechanical Equipment	486



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2.1.2 Fabrication Repairs

A. GTL Refinery fabrication scope of work

Plant Area	No of Pressure Vessels	No of Pipelines	No of Tanks
Air Gas Separation	20	100	3
Reforming	2	20	0
Blending & Storage	15	60	50
Offsite & Utilities	100	150	100
Refinery	150	300	1
Workshop	TBC	TBC	TBC
Blast & Painting Yard	TBC	TBC	TBC
GTL Re-instatement Totals	287	630	153

B. FA Platform fabrication scope of work

Fabrication scope of work	QTY
Structural	20
Piping	313
Level Glasses	19
Total Number of Fabrication scope of work	252

2.1.3 Refractory Work

Scope of work	Refinery REINSTATEMENT(SHUTDOWN) Areas			
	Refinery	Reformer	Air and Gas	Offsite and Utilities
Refractory	Unit 27, Unit 29, Unit 35, Unit 21, Unit 20, Unit 24, Unit 33			Unit 48

2.1.4 Civil Infrastructure

Scope of work	Refinery REINSTATEMENT(SHUTDOWN) Areas



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	Refinery	Reformer	Air and Gas	Offsite and Utilities
Civil Infrastructure	Unit 16, Unit 20/21, Unit 24, Unit 25/31, Unit 29/33, Unit 32/35	<u>Unit 06/08</u>		Unit 45, Unit 47, Unit 58, Unit 98, Unit 18, Unit 57

2.1.5 Electrical

A. GTL Refinery scope of work

Scope of work	Refinery REINSTATEMENT(SHUTDOWN) Areas			
	Refinery	Reformer	Air and Gas	Offsite and Utilities, Blending and Storage
Electrical plant equipment for shutdown, including infrastructure requirements.	Units 20, 21, 25, 27, 29, 31, 33, 35, 54	Unit 06	Units 01, 03, 50, 99, 42	Units 40, 41, 43, 45, 47, 48, 49, 56, 18, 58, 86, 51, 73, 75
Substations & Satellite building equipment.	All substations and Satellite buildings			
Replacement/Upgrades of electrical infrastructure	Obsolete systems, large repairs, major service on equipment, replacement of equipment			

B. FA Platform scope of work

Description of electrical equipment	QTY
Main Electrical	0
Motorised Valves	0
Motors	124
Electrical Pannels	19
Electrical buckets	14
Electrical breakers	0
Projects	62
Total number of electrical equipment	219



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2.1.6 Instrumentation

A. GTL Refinery Instrumentation

Plant Area	Instrumentation Scope of work					
	Sat building(QTY)	Control valves (QTY)	Analysers (QTY)	Plant instruments loops (QTY)	Vibration equipment loops	Trip testing groups (QTY)
Air Gas Separation	3	20		150	6 Racks	10
Reforming	1	10		50	2 Racks	5
Blending & Storage	2	20		50		30
Offsite & Utilities	4	360		611	4	73
Refinery	3	371		206	6	113
LAB's						
GTL Re-instatement Totals	13	781	150	1067	10	231

B. FA Platform Instrumentation Equipment detailed scope of work

Description	QTY
Control Valves	248
Transmitter	69
Switches	27
Gauges	19
Solenoid Valves	113
Dampers	3
DCS system	0
Flame detector	8
Temperature elements	6
Sub sea system	0
Total Instrumentation equipment	493



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Scoping entails Shutdown scope of work and known preservation defects, function testing of all ESD and DCS control equipment as per process design to locate unrevealed defects. Scoping of project work to be implemented.

- Testing of Fire and Gas systems for all units.
- ESD / DCS testing for all design changes for new modes.

2.2 Cost Estimation

The contractor shall assist PetroSA with cost estimation of upcoming Liquid Refinery Reinstatement (Shutdown) for budgeting purposes. Cost estimates shall be based on scope available at the time, experience and agreed assumptions and shall be +/- 20% accurate. Estimates shall be made available in time for the PetroSA budgeting process.

2.3 Work Planning

The contractor shall perform Preparation, Planning and Scheduling function for 2026 Liquid Refinery Reinstatement (Shutdown) . The availability of competent Liquid Refinery Reinstatement (Shutdown) Planners must be assured. Planners supplied to fulfil this service will work under PetroSA planning management in support of the PetroSA Liquid Refinery Reinstatement (Shutdown) planning team. Liquid Refinery Reinstatement (Shutdown) Planners will be utilizing MS Excel, SAP PM (version 4.7), Primavera (version 6) and Inspire systems

2.4 Roles and Responsibilities

This is a large Liquid Refinery Reinstatement (Shutdown) and has been declared as such by PetroSA at the start of the Liquid Refinery Reinstatement (Shutdown)planning cycle typically two years ahead of the execution, utilizing the seven phases of PetroSA Shutdown Execution Methodology.

The following are the roles and responsibilities of the Contractor.

- 2.4.1** The Contractor shall in collaboration with the PetroSA Planning Engineer walk the plant to familiarise themselves with requirements (Health, Safety, Environmental and Quality)
- 2.4.2** The Contractor shall compile, present and get project schedule approved by PetroSA Planning Engineer
- 2.4.3** The Contractor shall develop a set of Key Performance Indicators to track progress of the preparation, Planning and Scheduling project.
- 2.4.4** The Contractor shall develop in collaboration with PetroSA Roles and Responsibility Matrix for the different phases of the Preparation, Planning and Scheduling process for CONTRACTOR and PetroSA personnel.
- 2.4.5** The Contractor in collaboration with PetroSA shall provide a training schedule and or Plan Induction Programme



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- 2.4.6** The Contractor shall setup, schedule and conduct meetings to review, challenge and approve project schedule
- 2.4.7** Contractor shall identify all tasks and activities required per equipment (Task lists).
- 2.4.8** Contractor shall identify all necessary resources required per task and or activity.
- 2.4.9** Contractor shall create, capture and record all task lists on MS Excel spread sheets.
- 2.4.10** The Contractor in collaboration with PetroSA shall setup, schedule and conduct meetings to review, challenge and approve task lists
- 2.4.11** The Contractor shall comply with set start and completion dates as per project schedule
- 2.4.12** The Contractor shall create work orders (link standard revisions, Work Breakdown Structures, Activity Rates for costing)
- 2.4.13** The Contractor shall Upload Task lists from MS Excel onto SAP PM system
- 2.4.14** The Contractor shall generate network graphics links
- 2.4.15** The Contractor shall transfer Task lists onto Work Orders
- 2.4.16** The Contractor shall download Work Orders from SAP PM onto Primavera through Inspire systems
- 2.4.17** The Contractor shall link activities as per equipment on Primavera
- 2.4.18** The Contractor shall Interlink Units and Areas (Primavera)
- 2.4.19** The Contractor shall perform Resource levelling (Primavera)
- 2.4.20** The Contractor shall schedule and produce the project schedules (Bar Charts) – (Primavera)
- 2.4.21** The Contractor in collaboration with PetroSA shall setup, schedule and conduct meetings to review, challenge and approve projects schedules (Bar Charts)
- 2.4.22** The Contractor shall setup and lock the Baseline (Primavera)
- 2.4.23** The Contractor shall print the final schedules (Bar Charts), Task books per discipline and Histograms
- 2.4.24** The Contractor in collaboration with PetroSA shall setup, schedule and conduct POSTMOREM meeting to review, discuss and document lessons learnt during the Preparation, Planning and Scheduling phase

3. KEY DELIVERABLES OF PREPARATION PHASE

The key deliverables for the Contractor during this period are:

- 3.1** Task lists per equipment on MS Excel
- 3.2** Task lists per equipment on SAP PM
- 3.3** Work order management (Work orders created with Revisions, WBS and network graphics links done)
- 3.4** BOM development / BOQ
- 3.5** Area specific and Overall project schedules with links per unit and per area; costing (activity) rates, resource levelling and baseline
- 3.6** Histograms printed
- 3.7** Task books per area printed
- 3.8** Minutes of meeting captured (Post mortem, Reviews and approval)



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4. SPECIFIC FACILITY AND EQUIPMENT REQUIREMENTS

- 4.1** The Contractor shall make arrangements for all required vehicle permits
- 4.2** PetroSA shall provide utilities (Water and electricity), free of charge
- 4.3** PetroSA shall provide office accommodation, free of charge
- 4.4** The Contractor shall give at least 48 hours notice of any other requirements with respect to facilities.

5. SPECIFIC LABOUR REQUIREMENTS

5.1 General

- 5.1.1** The Contractor shall provide a competent and suitably trained workforce
- 5.1.2** The Contractor shall be in a position to supply proof of competency (certificates and/or assessments) of all personnel when required by PetroSA
- 5.1.3** The Contractor shall inform PetroSA of any resignations and recruitments during the Preparation, Planning and Scheduling project.
- 5.1.4** It is the responsibility of the Contractor to negotiate with the Department of Labour, for variation from BCEA overtime hours and related matters, if it is required to work under such conditions during the Preparation, Planning and Scheduling project
- 5.1.5** The Contractor shall provide a training schedule and material for all of the Preparation, Planning and Scheduling project work force and arrange training where required.
- 5.1.6** The Contractor shall submit an organogram of personnel who will be responsible for managing/Supervision Preparation, Planning and Scheduling project team.
- 5.1.7** The Contractor shall utilise suitable local work force, in conjunction with local labour forums, where practical.
- 5.1.8** A well developed selection and screening process for labour shall be used. PetroSA prefers the use of labour with previous experience of working on Liquid Refinery Reinstatement (Shutdown) at PetroSA where such workers received good ratings.
- 5.1.9** The Contractor shall ensure that workman compensation insurance have been procured up-front for the duration of the Liquid Refinery Reinstatement (Shutdown) for itself and all its sub-contractors
- 5.1.10** The Contractor shall comply to the following:
 - Shall be responsible for all supervision on all Work that is being executed during the contract period.
 - Shall be responsible for updating the Progress Report on a daily basis to the Planning Engineer
 - Shall attend progress and coordination meetings.
 - Shall be responsible to keep record of all changes to the Scope of Work via a Site Record Book or Scope Register



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6. MANAGEMENT OF CONTRACT

6.1 List of Services

6.1.1 Additions to the list of services shall be negotiated between PetroSA and the Contractor as and when required and then added to the contract as an addendum.

6.1.2 The list of services and rates shall be renegotiated as when the need arises

6.2 Communication, Issues & Problem Management

6.2.1 All official communication and issues must be routed through the PetroSA Liquid Refinery Reinstatement (Shutdown) Manager. *Any issues and problems threatening the successful completion of the Reinstatement (Shutdown) of the Preparation, Planning and Scheduling will be brought to the attention of the Planning Engineer within 12 hours.*

6.2.2 *Co-ordination meetings chaired by the Planning Engineer will be conducted to report progress and to discuss any issues and problems that may arise.*

6.2.3 The Contractor's performance shall be measured against the agreed expectations and milestones.

6.2.4 Preparation, Planning and Scheduling progress monitoring and reporting will be done daily.

7. PROGRESS REPORTING

The Contractor as well as PetroSA's performance shall be measured against the deliverables of the Contract.

7.1 The main areas of performance are:

7.1.1 *Compilation of scope for Reinstatement (Shutdown) (spreadsheets)*

7.1.2 Task List Management

7.1.3 *Bill of materials and quantities (BOM BOQ)*

7.1.4 Work Order Management

7.1.5 *Development of work packs / QC and acceptance*

7.1.6 Scheduling or compilation of Liquid Refinery Reinstatement (Shutdown) 2026 Bar Charts

7.1.7 Schedule Compliance (Comply to Preparation, Planning and Scheduling project schedule)

7.1.8 Cost Containment