

Annexure A

SCOPE OF WORK

THE APPOINTMENT OF A SERVICE PROVIDER FOR THE PROVISION OF HEAT TREATMENT SERVICES AT SANPC REFINERY OVER A PERIOD OF THREE (3) YEARS.

1. INTRODUCTION

- 1.1. SANPC Refinery requires a capable Contractor to undertake and provide Heat Treatment Services for process pipes, vessels, tanks and equipment.
- 1.2. The scope of work includes all heat treatment requirements required on operational, maintenance, projects or shut down work performed at the SANPC Refinery site.
- 1.3. The nature and type of works to be carried out can be assumed from the description of rates listed in the Schedule of Rates, although this list is not exhaustive.
- 1.4. It is expected from the Contractor to provide the service expertise, advanced techniques, reliable equipment, manpower, and experienced project management, including preparation and execution plan of the works in accordance with and within time frames defined by SANPC Refinery.
- 1.5. Work performed will be measured and remuneration shall be based on the Schedule of Rates.
- 1.6. The contractor shall not, without the prior written consent of SANPC Refinery make any alteration or addition to this Scope of Work.
- 1.7. All work carried out at the SANPC Refinery site shall comply with the Rules and Regulations pertaining to this activity.

2. SCOPE OF WORK – PARTICULAR

- 2.1. The scope for the required ad hoc service provision shall include but not be limited to the following:
 - Hydrogen Diffusion
 - Pre-Weld Heat Treatment
 - Post-Weld Heat Treatment
 - Heating of vessels, tanks and other fixed equipment
- 2.2. The Contractor will be expected to be familiar and have the necessary experience and knowledge of all heat treatment techniques and procedures.
- 2.3. Prior to the commencement of any heat treatment job SANPC Refinery will provide the Contractor with job specific specifications and procedures
- 2.4. SANPC Refinery shall not be responsible for the payment of additional personnel without prior written agreement.
- 2.5. The Contractor shall, supply an organogram with full details of its personnel structure including curriculum vitae of its key personnel with contact details.
- 2.6. The contractor is expected to have a standby crew to respond to call-outs after hours and weekends for emergencies. The response time from

the time of request is expected to be 1 days.

2.7. In rendering the Service, the Contractor shall provide for:

- 2.7.1. Plant & Equipment
- 2.7.2. Tools
- 2.7.3. Manpower
- 2.7.4. Supervision
- 2.7.5. Management
- 2.7.6. Office Personnel
- 2.7.7. Transport.

2.8. The contract shall have its procedure for the provision of this service drawn up in line with the following standards and codes

- 2.8.1. ANSI / ASME B31.3
- 2.8.2. ASME Sec I / Sec VIII Division 2
- 2.8.3. ASME Sec VIII Division 1 par UCS 56
- 2.8.4. ASTM A262 par E
- 2.8.5. ASTM E-44

2.9. The Contractor shall draw up Heat Treatment Procedure(s) per specific job for approval by SANPC Refinery Inspection Department.

2.10. The Contractor will at the commencement of the Agreement receive a Purchase Order against which all Contractor invoices shall be paid.

2.11. Before commencing with any job, the Contractor shall be issued with a Works Order / Job Card, and the Works Order number shall also be reflected on the Contractor invoices and the job card attached as one of the invoice supporting documents.

2.12. It will be the responsibility of the Contractor to fully acquaint itself with the conditions and environment of each job and to plan accordingly.

2.13. SANPC Refinery will have no obligation in any aspect on work performed by the Contractor without an official Works Order number.

2.14. The Contractor shall not acquire the service of any sub-contractor without the prior written approval from SANPC Refinery.

2.15. SANPC Refinery will have the right to evaluate, test and interview all personnel designated to perform the Services.

2.16. SANPC Refinery reserves the right to object to any personnel who in terms of this agreement or any of SANPC Refinery's policy is deemed incompetent, negligent, guilty of misconduct or unsuitable.

2.17. The Contractor's Quality Control Plan (QCP) shall cover all tasks identifying all witness hold points required for SANPC Refinery interventions. These QCPs will be requested by SANPC Refinery on a regular basis.

2.18. The contractor shall ensure that vehicles brought on to SANPC Refinery site are roadworthy.

2.19. Technicians shall ensure timesheets are completed with the correct hours and brief description of the work that was done. All time sheets to be signed by the designated SANPC person/s.

2.20. All safety violations or incidents to be reported within 24 hours to the SANPC Refinery designated persons including the SANPC Refinery MSFP.

2.21. Work must be performed to the required standard and using qualified

- technicians
- 2.22. The contractor shall provide HSSE management plan.
 - 2.23. The contractor representative shall meet with the SANPC Refinery designated persons to discuss any issues arising.
 - 2.24. The scope may also require power supply to the heating equipment if SANPC Refinery is unable to provide the power requirements.
 - 2.25. Diesel supply to generators must also be included if necessary.
 - 2.26. All equipment to have been inspected/tested with valid certifications available on request.
 - 2.27. Technicians to have valid training certifications which must be produced by the contractor upon request by SANPC Refinery.
 - 2.28. Temperature monitoring units to produce record cards indicating applied temperatures for the period of heat application.
 - 2.29. Heat treatment equipment shall be attended to by suitably qualified operators at all times, including automated units which shall be monitored continuously.
 - 2.30. No bare wire connections between lengths of compensating cable and between compensating cables and the thermocouple are permitted. Proper connectors designed for this purpose shall be utilised.
 - 2.31. Insulation shall be securely fastened using the appropriate strapping technique which shall be suitable for the intended temperature range.
 - 2.32. The contractor shall follow the SANPC Refinery procedure for rate of heating as well as hold points with zero deviation.

3 SCOPE OF THE WORKS - GENERAL

- 3.1 The description given below defines the general requirements particular to the scope of the works and is to be read in conjunction with the other documents forming the Tender and/or the agreement as the case may be. Procedures for job card shall follow the sequence of events as per Central the Planning Workflow and as outlined in 3.1.1 to 3.1.10 below:
 - a) SANPC Refinery normally uses individual job card numbers to apportion the works. The contractor will be required to use the job card system for call-offs (pricing) and the SANPC Refinery job card system for progress reporting of the works in conjunction with the duly authorised SANPC Refinery Zone Supervisor. SANPC Refinery will provide the level 1 schedule (overall schedule – early start and late finish) for the contractors planning and execution.
 - b) The contractor is required to provide man-hours expended to execute the work from the schedule of prices and compare against those listed in the man-hour norms for the job. The overall schedule will be compared against the initially agreed schedule.
 - c) This information will be used in the KPI measures.
- 3.1.1 The Area Engineer, Fabrication Supervisor or the duly authorised person, together with the Zone Supervisor identifies the required maintenance work, where after a priority is placed against each maintenance activity.

MAINTENANCE PRIORITISATION TABLE

PRIORITY	PRIORITY/RISK LEVEL	START DATE	INITIAL COMPLETION PERIOD
C	Routine	Request Date + 30 days	3 Months
B	Routine	Request Date + 14 days	1 Month
A	Schedule Breaker	Request Date + 1 days	1 Week
E	Emergency	Immediate	ASAP + Overtime

Priorities A, B, C & E are scoped by the respective Zone Scooper or the discipline Artisan.

A job card number is assigned to the scope and job card is issued to the contractor. Emergency Status Classification will be the 'A' and 'E' priority jobs. In such a case the Area Engineer agrees upon the staffing and general planning requirements with his execution Team (Scoper, Planner, Fabrication Supervisor and the Contractor). The Area Engineer confirms the release of the works and identifies which lower priority job(s) can be postponed to accommodate the Emergency priority job.

- a) An 'E' priority job is supposed to commence immediately and shift work is to be effected, and an 'A' priority job will require the contractor to commence within 24hrs of receiving the scoping form and order number. An 'A' priority job may require extended hours to be undertaken by the dayshift crew.
- b) In the event that the contractor resources in the Zone are insufficient for the Emergency Job, then the Area Engineer is to be consulted as he/she has overview of all resources and is in the position of suggesting what jobs across site could be postponed to accommodate the 'E' priority job.
- c) For an 'E' priority job after hours, the Planner is to immediately issue a Manual job card for the work to start. In the event the 'E' priority job occurs outside of normal working hours, the system generated job card with a valid job card number will be issued at the beginning of the next normal working day.
- d) The contractor is expected to obtain the necessary permits and proceed with the works. The workflow from here shall proceed in the same manner as for normal priority works.

3.1.2 For (A, B, C & E) priority work a scope of work package, in the form of a Contractor Work Request (CWR), is generated in SAGE by the Area Scoper. A job card is generated by the Zone Scoper and followed up with a manual scoping form to the contractor. The contractor estimates the cost and man hours for a CWR, in accordance with the Schedule of prices, and returns the estimated CWR in electronic format to the Area Engineer. The Area Engineer evaluates and awards the contractors estimated CWR.

- a) When awarded, the contractor compiles a Work Pack which includes the relevant drawings and Material Take-off's (MTO's) etc.

- b) The Contractor's supervisor is required to facilitate the generation of the Safety Certificate.
- 3.1.3 The contractor presents the compiled work pack to SANPC Refinery, which must be reviewed and verified in writing by the respective SANPC Refinery authorities. SANPC Refinery shall, at the same time, ensure that the material required is in stock or ordered. Central Planning draws up a 30-day look-a-head schedule, for review by the Area Execution Team including the contractor. From time to time, SANPC Refinery may impose a limit to contractor numbers on site.
- 3.1.4 After confirmation with all relevant parties in the Weekly planning meeting, the Planner issues a seven day look-ahead level 1 schedule. From that schedule, job cards will be issued to the relevant contractor. The seven day schedule will be extracted from the monthly schedule.
 - a) The contractor is to ensure that the relevant QCP, Work-pack is approved and that the permits are obtained at the latest by close of business of the day prior to the planned start date.
 - c) Thereafter the contractor is to get daily clearances for each activity from the respective Maintenance Services Focal Point (MSFP) before commencing with the works.
- 3.1.5 In the event of any variations to the scope of the works, SANPC Refinery Authorised person (Area Engineer, Fabrication Supervisor, the Zone Planner, the Zone Scoper) and the contractor shall identify such variation/s and this must be recorded. The contractor shall include such variations into the work pack. A variation order (VO) shall be raised and approval by the Area Engineer before the extra work commences.
Execution of works without a job cards will not be accepted.
- 3.1.6 The contractor must submit the job cards to the Planner for progress reporting. These job cards must be signed by the Discipline Supervisor as verification that the work is completed to the required standard and to process payments.
- 3.1.7 The Planner updates all progress and also closes off the work upon issue of the handover/takeover certificate from the contractor .
- 3.1.8 Quality of workmanship must be verified by duly appointed persons for all categories of work which will be on record as part of the contractor workpacks.
- 3.1.9 All material specifications must be as per SANPC Refinery /ISO standards. If at any instance the specifications are not clear then the SANPC Refinery Area Engineer is to be consulted for guidance and resolution.
- 3.1.10 SANPC Refinery may require the contractor to prepare a workpack prior to commencement of the works, which may include:
 - a) Health, Safety and Environment Action Plan;
 - b) Method Statement;
 - c) Quality Plan;
 - d) Completion of the SANPC Refinery integrated Risk Assessment Method Statement ("RAMS")

Table 1 – Recommended Preheat And Stress Relief Heat Treatment (Note1)

P-NUMBER OF MATERIAL	MATERIAL DESCRIPTION	PREHEAT (°C)	HEAT TREATMENT TEMPERATURE (°C)	HOLDING TIME
P - 1	Carbon Steel UTS 450 MPa	None (Note2)	590 to 630	1 hour
	Carbon Steel UTS >450 MPa (Note3)	80 to 200 (Note5)		
	C – Mn Steel	80 to 200		
P – 3	C – Mo Steel	(Note 4)	600 to 650	
	½ Cr - Mo		625 to 700	
P - 4	1 or 1¼ Cr - ½ Mo	150 to 300	(Note8)	
	2¼ Cr – 1 Mo	(Note7)		
P - 5	3 Cr – 1 Mo	275 minimum	700 to 750	2 hours (Note9) (Note6)
	7 Cr - ½ Mo	(Note 10)		
	9 Cr – 1 Mo			
P - 6	12 – 18 Cr Martensitic (Note11)	200 to 250 (Note10)	750 to 800	(Note9)
P – 7	12 – 18 Cr (Note12)	20 to 200	725 minimum	1 hour (Note5)
P – 8	Austenitic Stainless Steels	Usually not required	Usually not required. When performed, written approval by Purchaser to be obtained.	
P – 9B	3½ Ni - Steel	100 to 150	560 to 600	1 hour (Note5)

4 SAFETY

- 4.1 The contractor and contractor personnel must, as far as reasonably practical comply with requirements prescribed by the OHS Act and OHS Regulations- Act 85 of 1993.
- 4.2 The contractor will also comply with the SANPC/ CEF rules and regulations
- 4.3 The contractor safety officer will ensure that regular audits are done on site to identify and intervene on unsafe situations and near miss acts during work execution. Any findings to be reported and recorded in the SANPC/ CEF incident management system
- 4.4 All incidents to be reported to the relevant clearance issuers and maintenance supervisors

5. ADMINISTRATION PROCEDURES

5.1 Meetings

- 5.1.1 The following meetings are compulsory for contractor's representative to attend when any work is in progress:
 - a) Daily planning and progress meetings as directed by Area Engineer and/or the Zone Planner.
 - b) Weekly look-ahead meetings as directed by Area Engineer and/or the Zone Planner.
- 5.1.2 The following meetings are compulsory for the contractor Site Manager to attend:
 - a) Monthly KPI review meeting
 - b) Quarterly performance and safety review meetings or as directed by the CCM.

5.2 Planning and Progress

- 5.2.1 SANPC Refinery shall provide the contractor with a 30 day look-a-head schedule outlining planned windows for activities. The contractor is to manage and administer the manpower resources as such to enable him to comply with the defined service levels and meet the required works order completion dates, irrespective of absenteeism or leave. The contractor must ensure these objectives are fully understood and that management structures and procedures are in place to ensure timeous and successful execution under the above-mentioned constraints.
- 5.2.2 The contractor is responsible to plan, supply, coordinate and manage his manpower, logistics, equipment and materials resources for the works in accordance with the schedule from Central Planning as a guide. The coordination, progress monitoring and reporting is the responsibility of the contractor and shall take place at the daily progress meetings. These meetings shall be recorded (as per respective meeting's criteria) by the Zone Planner and agreed to or signed by the contractor. The contractor shall update his plan, provide progress at the daily and weekly progress meetings.
- 5.2.3 The contractor is to arrange and coordinate with the required SANPC Refinery personnel, all RAMS sessions in order to ensure that work starts timeously.
- 5.2.4 The operations of SANPC Refinery and interconnecting facilities in outlying areas will be carried out continuously during the period of this agreement, and the contractor shall allow for working in close proximity to and in liaison with other contractors in order to minimise inconvenience and shall plan for flexibility in labour resources input and any other factors in complying with these restrictions.
- 5.2.5 Restrictions may be imposed upon the contractor in his execution of the works as a result of SANPC Refinery 's operations. The contractor is to immediately notify SANPC Refinery (Area Engineer and the CCM in writing, of such an interruption. The contractor along with the Area Engineer shall re-coordinate the manpower to other available sections, areas, items of equipment in order to minimise standing time.
- 5.2.6 All priority "E" and "A" work to be clearly defined by the Area Engineer

and closely coordinated with the CCM. The Planner/Planning Manager will ensure that the necessary job cards are raised within 24 Hrs (or the next normal working shift). The contractor Supervisor and the Supervisor will both sign the Job Card for progressing purposes.

- 5.2.7 The contractor shall, at all times, demonstrate positive and proactive participation in the efficient execution of the works in order to achieve satisfactory levels of productivity.
- 5.2.8 The contractor is to note that whilst the overall scope of works must be completed in the required time, the contractor must ensure that by proper preparation and quality execution the planned man-hours are not exceeded.
- 5.2.9 The contractor's attention is drawn to the fact that the works to be executed may be in the vicinity of insulated pipework, equipment and electrical and instrument installations. The contractor shall be held responsible for any damage caused to these or any other installations by his operations. If damages are identified prior to commencing work, the Area Engineer or the Supervisor must be notified of such damages immediately.
- 5.2.10 Access to and from the worksite is by means of existing hard roads or temporary access roads and will be through such gates and by such routes as will be defined by SANPC Refinery. The contractor is to operate his own vehicles with minimum of inconvenience to other traffic at the refinery sites.
- 5.2.11 All electrical equipment brought on site for work execution must be inspected and approved by the SANPC Refinery electrical department.

5.3 Contractor Organisation and Training

- 5.3.1 All workers are to undergo training through a SETA approved Training facility. In the event that the candidate is found to be not coping with the work, SANPC Refinery reserves the right to insist on change for a more suitable candidate.

5.4 Staff Issues

- 5.4.1 As a control system the contractor is to supply a full organogram with functions and names of resources to SANPC Refinery. labour pool. SANPC Refinery reserves the right to assess all contractor supervisors before they report for work at the SANPC Refinery sites.
- 5.4.2 SANPC Refinery shall have the right to assess the contractor's core resources and performance on a continuous basis for the duration of this agreement.
- 5.4.3 Only approved resources may be used by the contractor. Changes in core resource staff shall be justified to and approved by the SANPC Refinery CCM, whose approval will not be unreasonably withheld. (This includes non-recoverable resources).

6. DIVISION OF RESPONSIBILITIES

Definitions:

E	Execute
P	Participate
A	Approve
S	Supply
M	Maintain

6.1 Division of Responsibilities - Work Descriptions

The following work descriptions define the division of responsibilities with respect to the work required and exclusions from the **agreement** scope of work:-

Work Description	By CONTRACTOR	By Others	By SANPC Refinery
Timeous Application for Work Permit	E		P
Issue of daily work permits			A/E
Gas Testing			E
Quality Checking	E		P/A

6.2 Division of Responsibilities - Provision of Construction and associated Equipment

The following defines the division of responsibility with respect to the provision of construction and associated equipment for the implementation of the **agreement** work:

Equipment Description	By CONTRACTOR	By Others	By SANPC Refinery
Transportation	S		
Site huts, ablution facilities, storage and where required services	M		S
Lighting – General			S/M
Required protective clothing and equipment include. B.A. Compressor	S/M		
Cranage		S/M	
Lifting gear, ropes, slings and shackles			S/M
Safety Equipment	S/M		
Firefighting facilities			S/M
Resuscitator			S/M
Standby B.A. set			S/M

6.3 Division of Responsibilities - Supply of Installed Equipment and Materials

The following defines the division of responsibility with respect to the supply of installed equipment and materials required for the **agreement** work:

Task Description	By CONTRACTOR	By Others	By SANPC Refinery
Identify work and raise Job card			E/A
Prepare and issue detailed scope work	S/P		A
Price	E		A
Rates for non bill items	E		A
Plan sequence of work	E		A
Carry out the work	E		
Progress reporting	E		A
Prepare V.O	P		E/A
Handover (ready to use)	E		A

The above noted items are intended to be indicative of the categories of work to be undertaken. They are not intended as a comprehensive list of the same.

7. DRAWINGS

- 7.1 Drawings/ sketches may be issued by SANPC Refinery as required to clarify written instructions given.