

## PART 3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
C3.1	<i>Employer's Service Information</i>	23
C3.2	<i>Contractor's Service Information</i>	0
	Total number of pages	24

## C3.1: EMPLOYER'S SERVICE INFORMATION

### Contents

<b>Part 3: Scope of Work .....</b>	<b>1</b>
<b>C3.1: Employer's service Information .....</b>	<b>2</b>
<b>1 Description of the service.....</b>	<b>4</b>
1.1 Executive overview .....	4
1.2 <i>Employer's</i> requirements for the <i>service</i> .....	4
1.3 Interpretation and terminology .....	6
<b>2 Management strategy and start up. ....</b>	<b>6</b>
2.1 The <i>Contractor's</i> plan for the <i>service</i> .....	6
2.2 Management meetings .....	6
2.3 <i>Contractor's</i> management, supervision and key people .....	8
2.4 Provision of bonds and guarantees .....	8
2.5 Documentation control.....	8
2.6 Invoicing and payment.....	9
2.7 Contract change management .....	9
2.8 Records of Defined Cost to be kept by the <i>Contractor</i> .....	9
2.9 Insurance provided by the <i>Employer</i> .....	9
2.10 Training workshops and technology transfer.....	9
2.11 Design and supply of Equipment.....	9
2.12 Things provided at the end of the <i>service period</i> for the <i>Employer's</i> use .....	9
2.12.1 Equipment .....	10
2.12.2 Information and other things .....	10
2.13 Management of work done by Task Order .....	10
<b>3 Health and safety, the environment and quality assurance .....</b>	<b>10</b>
3.1 Health and safety risk management .....	10
3.2 Environmental constraints and management .....	16
3.3 Quality assurance requirements .....	17
<b>4 Procurement .....</b>	<b>20</b>
4.1 People.....	20
4.1.1 Minimum requirements of people employed.....	20
4.1.2 BBBEE and preferencing scheme .....	20
4.1.3 Accelerated Shared Growth Initiative – South Africa (ASGI-SA).....	20
4.2 Subcontracting .....	21
4.2.1 Preferred subcontractors .....	21
4.2.2 Subcontract documentation, and assessment of subcontract tenders .....	21

4.2.3	Limitations on subcontracting .....	21
4.2.4	Attendance on subcontractors .....	21
4.3	Plant and Materials .....	21
4.3.1	Specifications .....	21
4.3.2	Correction of defects .....	21
4.3.3	<i>Contractor's</i> procurement of Plant and Materials .....	21
4.3.4	Tests and inspections before delivery .....	22
4.3.5	Plant & Materials provided "free issue" by the <i>Employer</i> .....	22
<b>5</b>	<b>Working on the Affected Property.....</b>	<b>22</b>
5.1	<i>Employer's</i> site entry and security control, permits, and site regulations.....	22
5.2	People restrictions, hours of work, conduct and records.....	22
5.3	Health and safety facilities on the Affected Property .....	22
5.4	Environmental controls, fauna & flora.....	22
5.5	Cooperating with and obtaining acceptance of Others.....	22
5.6	Records of <i>Contractor's</i> Equipment.....	22
5.7	Equipment provided by the <i>Employer</i> .....	23
5.8	Site services and facilities.....	22
5.8.1	Provided by the <i>Employer</i> .....	23
5.8.2	Provided by the <i>Contractor</i> .....	24
5.9	Control of noise, dust, water and waste .....	24
5.10	Hook ups to existing works .....	24
5.11	Tests and inspections .....	24
5.11.1	Description of tests and inspections .....	24
5.11.2	Materials facilities and samples for tests and inspections .....	24
<b>6</b>	<b>List of drawings.....</b>	<b>24</b>
6.1	Drawings issued by the <i>Employer</i> .....	24

# 1 Description of the service

## 1.1 Executive overview

The provision of services on H2 regeneration system dryers of units 1 – 6, to ensure that the BAC-50 Hydrogen dryer is maintained as per the original equipment manufacturer's maintenance schedule. In this process to also intend to increase the safety of the dryers and provide increased monitoring of the hydrogen dew points inside the generator for trending purposes.

## 1.2 Employer's requirements for the service

The services should include:

- Annual service and inspections to be done yearly over the 3 years of maintenance. Detail activities are as listed in the table below
- A major service is to be performed after 3 years at the conclusion of the contract.
- Maintenance spares required for the servicing are outlined in table 2 below, this is a list of spares required to maintain the plant effectively and ensure uninterrupted production.
- Maintenance reports, detailing findings, process quality plans and check sheets and a commissioning check sheet, are to be produced timeously within 2 week of completion of each service.
- There will be a performance assessment that will take place for 2 week commencing from the handover date after the service of a unit to evaluate the dryer for optimal performance. Should there still be any defects present in this period or dryer malfunction, the contractor is to repair and correct the defect as part of the service.

Monthly checks shall include but not limited to the following:

- Plant walk down on all six dryer units
- Recording of any alarms present at the time of plant walk
  - If critical alarms are active a plan shall be submitted by the contractor with regards to the scope of work and time required to clear critical alarms
- Recording of dewpoints for monitoring purposes
  - Manual recording of dewpoints from sample points on the dryer. These manual recordings must match or be within a 5-10degree allowance of the displayed dewpoints on the H2 dryer

If dewpoints are not within range the necessary adjustments with regards to temperature and flow to the dryer shall be affected by the contractor or the calibration of the probes must be looked at

	Activity	Responsibility	Quality plan sheets
3 Yearly service activities			
1	H2 dryer CO2 purging and permit issue	Contractor/ Eskom	Contractor to supply gas and purge dryer Eskom to issue Gas test and gas certificate
2	Open top and bottom header flanges tower 1 & 2	Contractor	
6	Remove desiccant tower 1 & 2	Contractor	
8	Remove motor tower 1 & 2	Contractor	
10	Remove and test heater element tower 1&2	Contractor	
12	Clean tower 1&2 vessel, top and bottom header flanges	Contractor	
14	Open oil vapour filter and remove carbon media	Contractor	
15	Flush oil vapour filter	Contractor	
16	Open dryer diaphragm valves inspect clean and test	Contractor	Include condition inspection report
17	Flush dryer pipework with high pressure cleaner	Contractor	
18	Service 4-way valve and actuator	Contractor	Ensure the valve and actuator are fully functional

	Activity	Responsibility	Quality plan sheets
19	Service and test the air supply system, pressure, filter solenoid system	Contractor	Ensure that the control air system is fully functional, has the correct air pressure, is free of air leaks and the air filter is replaced
20	Remove dryer pressure indicators	Contractor	
21	Re-install dryer pressure indicators	Contractor	
22	Remove dryer temperature indicators	Contractor	
23	Re-install dryer temperature indicators	Contractor	
24	Clean dryer externally and clean control box enclosure	Contractor	
25	Check and tighten all electrical connections and glands	Contractor	
26	CALIBRATIONS/REPAIRS OF PRESSURE indicators	Contractor	Issue certificates
27	Calibrations/repairs of temperature gauges	Contractor	Issue certificates
28	Install desiccant and heater tower 1&2	Contractor	Check heater resistance at terminal stud to ensure no short-to-ground exists
30	Re-install motor tower 1&2	Contractor	Verify motor resistance readings
32	Box up dryer system ensure all connections and joint/flanges are tight	Contractor	All flange gaskets to be replaced - tower flange, interconnecting pipes, etc.
33	Perform leak check on dryer system and repair leaks	Contractor	
34	Clean and test liquid level detector panel	Contractor	
35	Clean and test oil vapor filter panel	Contractor	
36	Test blower motors tower 1 and 2 IR bearing and resistance test	Contractor	
37	Clean and calibrate inlet and outlet dewpoint probes	Contractor	
	Commission dryer	Contractor	Confirm the setting of the reactivation flow by recording the bed outlet temperature, cooler outlet gas temp and bed temp two hours into the heating step
	Carry out Dryer 2 week performance evaluation commencing from date of commissioning certificate.		
1 Yearly service activities			
	H2 dryer CO2 purging and permit issue	Contractor/ Eskom	Contractor to supply gas and purge dryer Eskom to issue Gas test and gas certificate
	Open oil vapour filter and remove carbon media	Contractor	
	Flush oil vapour filter	Contractor	
	Open dryer diaphragm valves inspect clean and test	Contractor	Issue inspection

	Activity	Responsibility	Quality plan sheets
			report on diaphragm condition
	Flush dryer pipework with high pressure cleaner	Contractor	
	Remove dryer pressure indicators	Contractor	
	Re-install dryer pressure indicators	Contractor	
	Remove dryer temperature indicators	Contractor	
	Re-install dryer temperature indicators	Contractor	
	Clean dryer externally and clean control box enclosure	Contractor	
	Check and tighten all electrical connections and glands	Contractor	
	Calibrations/repairs of pressure gauges	Contractor	No sanas certification required
	Calibrations/repairs of temperature gauges	Contractor	
	Box up dryer system ensure all connections and joint/flanges are tight	Contractor	All flange gaskets that were opened to be replaced
	Perform leak check on dryer system and repair leaks	Contractor	Issue tightness certificates
	Clean and test liquid level detector panel	Contractor	
	Clean and test oil vapour filter panel	Contractor	
	Carry out Dryer 2 week performance evaluation commencing from date of commissioning certificate.		

### 1.3 Interpretation and terminology

The following abbreviations are used in this Service Information:

Abbreviation	Meaning given to the abbreviation
PQP	Process quality plans
SOW	Scope of work
OEM	Original equipment manufacturer
EMD	Electrical maintenance department
TSC	Term Service Contract

## 2 Management strategy and start up.

### 2.1 Management meetings

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

The *Service Manager* arranges a kick-off meeting after contract award. This can be done before the commencing of the first service. Normally, the *Service Manager* and the *Contractor* (and any other co-opted members) attend the meeting. The meeting is chaired by the *Service Manager* who is also responsible for drafting and circulation of the minutes.

Typically, the following items are discussed:

- i. Scope/Commercial
  - Scope review clarification
  - Permits for hot work
  - QCPs
  - Safety induction training arrangements for the maintenance team
- ii. Organizational structures
  - *Employer* organization
  - *Contractor* organization
  - Management of Subcontractor/s (quality and material supply)
  - Parent company involvement (define the roles and responsibilities)
  - Focal points of contact: *Employer (Service Manager)* – *Contractor* (Person to be named)
  - *Contractor* Organogram with emphasis on site bound personnel
- iii. Security
  - Access arrangements.
  - Access permits (personnel, laptops, etc.)
  - Cameras and cell phones with cameras
- iv. HR & IR
  - Working hours
  - Accommodation and meals if required
- v. Safety, Health and Environment
  - Health and Safety Plan
  - Site procedures (e.g. emergency preparedness, etc.)
  - *Employer* Safety Officer/s
  - *Contractor* Safety Officer/s
  - PPE
  - Emergency telephone numbers
- vi. Quality Management
  - Quality Management Plan
- vii. Risk Management
  - Risk meetings
- viii. Accepted Programme and Activity Schedule

The *Service Manager* is to hold a risk register meeting (Clause 16.2) as and when required. This could be used to discuss safety, compensation events, subcontracting, overall co-ordination and other matters of a general nature. Separate meetings for specialist activities such as planning and activities of a technical nature may also be warranted

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

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

## 2.2 Contractor's management, supervision and key people

This section describes an organogram that is to be put in place from the *Contractor* showing his people and their lines of authority / communication

The organogram distinguishes between the various types of labour (i.e. skilled, unskilled etc.) and the position level as well as indicate the structure and responsibilities during the different phases. As a minimum it addresses the following:

- Project management
- Documentation management
- Configuration management
- Planning and programming
- Site management
- QA / QC
- Safety
- Technical Clarification
- Design / Engineering
- Procurement
- Manufacturing
- Erection and Installation
- Commissioning
- Acceptance Tests

## 2.3 Documentation control

Before the Plant is placed in service the Contractor is to certify that it is in a suitable and safe condition.

Official contractual communication, i.e. instructions, etc. will take place only between the contractor and the project manager. The communication media of choice will be by emails addressed to the correct recipient. This may be a message in the email itself, supported by any relevant attachments. Any other recipients may be copied in communication emails.

The interface design for the added safety features is to be submitted in hard copy and electronic format. The submissions include any software simulations that were performed by the contractor to realise the design. The design is to remain property of the employer.

All drawing related to the system that will changes with the upgrade of the safety features are to be updated by the contractor to reflect any changes.

PQP documentation, including any updates and signatures will remain the responsibility of the contractor to ensure that hold points are adhered to.

Operation manuals, maintenance manuals, spares list, and all other related documentation will be submitted to the employer by the contractor with each installation that is completed.



## 2.4 Invoicing and payment

Within one week of receiving a payment certificate from the *Service Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Service Manager's* payment certificate.

The *Contractor* shall address the tax invoice to [invoices@eskom.co.za](mailto:invoices@eskom.co.za)

and include on each invoice the following information:

Name and address of the *Contractor* and the *Service Manager*;

The contract number and title;

*Contractor's* VAT registration number;

The *Employer's* VAT registration number 4740101508;

Description of service provided for each item invoiced based on the Price List;

Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;

Banking details( Bank, Branch, Branch code, Account No )

## 2.5 Contract change management

To ensure a standard implementation methodology on the safety features to be installed on the units and that continuous improvements from subsequent units are back fitted to units already commissioned, the *Contractor* is responsible for the management of change of equipment until Completion of the whole of the works.

The *Contractor* develops implements and maintains a DCR (design change request) procedure. The DCR process is submitted to the Project Manager for acceptance, prior to the *Contractor* implementing it

## 2.6 Insurance provided by the *Employer*

The *Employer's* Insurance Policies can be viewed on the following website:

<http://www.eskom.co.za/c/101/insurance-policies-procedures/>.

The *Employer's* Insurance Policies is reviewed and may be revised annually on the annual insurance policy maturity date at the end of March each year when the *Contractor* is advised to inform himself of such updates on the above website. Claims procedures and claim forms are also available from this website. If Marine insurance is applicable, the procedure for initiation of this insurance cover is also available from this website.

## 2.7 Training workshops and technology transfer

The *Contractor* provides training for the *Employer's* personnel on the new safety systems that will be installed in the plant as part of the contract directly applicable to the works. Training for Operating, Maintenance and Engineering staff is to take place on site.

Practical hands-on training during the whole contract implementation forms an integral part of the training process. This includes training of the maintenance personnel on how to carry out maintenance on the plant. The *Contractor*, together with the employee shall develop a training schedule with the consideration of staff constraints and shows these dates in the Accepted Programme.

## 2.8 Things provided at the end of the service period for the *Employer's* use

**2.8.1 Equipment**

None

**2.8.2 Information and other things**

None

**2.9 Management of work done by Task Order**

A task order includes:

A detailed description of the work in the task order

A priced list of items of work in the Task in which items taken from the Price List are identical

The starting and completion dates for the Task

The amount of the delay damages for the late completion of the Task and

The total of the Prices for the Task

**3 Health and safety, the environment and quality assurance****3.1 Health and safety risk management**Health and Safety requirements that the *Contractor* shall comply with include:**3.1.1 Detailed costing for Health and Safety**

- Based on the overall scope of work/ service to be performed – compulsory.
- Demonstration of an adequate health and safety management system that the Service Provider has:
  - Does the service provider have a documented health and safety management system?
  - provide proof
- Examples of the above include (but are not limited to), where applicable:

- Notification to Commence Construction Work

The Principal *Contractor* shall, on receipt of the letter of appointment from the *Client*, before commencement of on-site activities, notify the Provincial Director of the Department of Labour of commencement of construction work as defined in Construction Regulations of the Occupational Health & Safety Act.85 of 1993

A copy of the notification letter acknowledged by the DOL shall be forwarded to the Agent and *Client* and a copy also kept on the H&S file on site.

- Compensation for Occupational Injuries and Diseases

The Principal *Contractor* shall submit a letter of good standing with the Compensation Commissioner or Insurer at tender stage. The letter of good standing shall be valid throughout the project period. The *Client* shall at regular intervals of time carry out inspections to ensure that the letter of good standing remains valid throughout the project period.

- Appointments

The Principal *Contractor* shall after consideration of the risks involved in the work, make relevant Occupational Health and Safety appointments as stipulated in the OHSA, before commencement of site operations and submit to the *Client* as part of the H&S Plan.

- Competency for Principal *Contractor's* responsible persons

The Principal *Contractor* shall compile and maintain a current register/inventory of all supervisory and management personnel appointed to the construction Site. The inventory shall include H&S and professional competencies for each person appointed. The inventory shall be submitted to the *Client* for approval at tender stage as part of the H&S plan.

- Organogram

A site organogram clearly defining the reporting structure and legal appointment structure shall be drawn up and submitted by the Principal *Contractor* to the *Client* as part of the H&S plan at tender stage.

- Hazard Identification and Risk Assessment (HIRA)

Using the scope of works provided as part of the tender enquiry documents, the *Contractor* shall compile and submit a HIRA at tender stage with proposed control measures. The HIRA shall indicate in general the type of H&S hazards and risks anticipated in the project and shall in broad terms indicate the proposed control measures to eliminate or minimise the identified risks.

The *Contractor* shall ensure that a detailed HIRA is performed by a competent person before commencement of construction work and it shall form part of the H&S plan to be submitted to the *Client* for approval.

The HIRA is an on-going process and a review shall be submitted whenever there are changes in the scope and/or process. The Health and Safety Representative(s), the Health and Safety Committee members and *Contractor's* Representative shall be members of the HIRA team and shall ensure that all the identified hazards and risks are appropriately controlled and reviewed.

The *Contractor* shall be responsible for making sure that all employees under his control are conversant with the content of the HIRA, as well as putting in place appropriate measures to either eliminate or reduce the risks.

The HIRA must take into consideration the baseline risk assessment that will have provided by the *Client*.

- Health and Safety (H&S) Plan

The Principal *Contractor* shall develop, compile and submit, at tender stage for approval by the *Client*, a composite H&S Plan as per the *Client's* specifications.

- Health and Safety Training

The Principal *Contractor* shall conduct a training needs analysis on receipt of the letter of appointment from the *Client*. The training needs analysis shall be updated before every major work change and every six months for the duration of the contract. The training conducted on each project shall be three fold, namely:

Induction – the Principal *Contractor* shall ensure that all his employees undergo H&S induction based on the legislative requirements, *Client's* specification and his H&S Plan before starting work on site.

Awareness – the Principal *Contractor* shall continuously conduct on site toolbox talks, display posters and contract statistics regularly and before any hazardous work takes place.

Competency – the Principal *Contractor* shall, based on his HIRA and training needs analysis nominate relevant persons to be sent on appropriate courses. The Principal *Contractor* shall make available at the *Client's* request copies of certificates of training.

All records of training attendance, contents of training and training certificates shall be kept in the site H&S file.

- Documentation

The Principal *Contractor* shall keep and maintain H&S records to demonstrate compliance to legal requirements, the H&S specification, as well as any other Eskom requirements. All documents shall be available for inspection by the *Client*, Agent and the DOL.

- Monitoring and Evaluation

Inspections - The Principal *Contractor* shall carry out inspections as prescribed by legislation, the H&S Plan and the *Client* H&S specification. The Principal *Contractor* shall keep records of all inspections.

Internal Audits - the Principal *Contractor* shall conduct regular H&S audits at least once a month to ensure compliance to OHSA and H&S specification. Records of audits shall be kept on site and non-conformances reported.

External Audits - the Principal *Contractor* shall ensure that regular external H&S audits are conducted to ensure compliance to H&S legislation. External audits shall be carried out by competent persons or company. All documentation held by the Principal *Contractor* shall be available for inspection by the *Client*.

- Reporting, Recording and Investigation of Accidents and Incidents

All accidents and incidents must be reported, recorded and investigated in accordance with the OHSA and Eskom procedure 32-95. The Principal *Contractor* shall report all accidents and incidents to the *Client* within 24 hours. The Principal *Contractor* shall allow the *Client* to participate in any investigation linked to any activity within the scope of the construction project. The Principal *Contractor* shall keep an on-site record of all incidents reported in the form of OHSA GAR Annexure 1. In the case of accidents/incidents, Eskom may conduct an independent investigation. The *Client* will provide the Principal *Contractor* with 32-95 procedure

- Emergency Preparedness

The Principal *Contractor* shall, in consultation with the *Client*, develop and submit to the *Client* an emergency response plan from a review of potential emergency scenarios before commencement on site which will include, but not be limited to:

- Escape procedures and routes
- Employee accounting systems after emergency
- Rescue and medical duties
- Means and procedures for reporting emergencies
- Persons to be contacted for information
- Emergency alert systems
- Contact list of emergency service providers

The emergency plan shall include training of employees to deal with such emergencies and shall form part of the H&S plan. The Principal *Contractor* shall advise the *Client* or his agent within 24 hours of any site emergency occurring together with the action taken.

### 3.1.2 *Client's* Considerations and Management Requirements

#### 3.1.2.1 Injury Statistics

The Principal *Contractor* shall report monthly injury statistics to SRM on the first of every month and in the case where the first is on the weekend then it must be reported on the first working day of the month

### 3.1.2.2 Client's audits

The *Client* will from time to time conduct audits of the Principal *Contractor's* activities to ensure compliance with *Client's* requirements and specification.

### 3.1.2.3 Permits and Authorizations

The Principal *Contractor* shall ensure that a written work permit and/or authorisation are obtained from the *Client* prior to commencement of any work to be done on the plant. When completing the application for a permit to work, the responsible person shall ensure that any special requirements, such as hot work, or working in a confined space, is stated in the application.

All work permit requests must be accompanied by a method statement stating:

- The scope of work to be undertaken
- Identification of hazards and risk assessment of the proposed work
- Mitigation strategies to control, reduce or eliminate the identified hazards
- Safe Working procedure
- Training strategies for employees
- Equipment to be used
- Process for evaluation of employees' physical and psychological fitness
- Other information deemed necessary, as stipulated in the Plant Safety Regulations and Operating Regulations for High Voltage Systems.

### 3.1.2.4 Public Health and Safety Information

The Principal *Contractor* shall ensure that each person visiting a site shall be made aware of the dangers likely to arise from on-site activities and the precautions to be taken to avoid or minimise those dangers. Appropriate health and safety signage shall be posted at all times.

### 3.1.2.5 Medical Surveillance Program

Where Principal *Contractor* employees are exposed to occupational health hazards and risks that may have adverse effects to their health and/or lead to occupational diseases e.g. inhalation of dusts, exposure to noise, etc., the Principal *Contractor* shall establish a medical surveillance program. The program shall include all high risk occupations as specified in the Construction regulations i.e. crane operators, construction vehicles, mobile plant operators,

Medical screening shall be conducted by an Occupational Health Practitioner with either the SA Health Profession's Council or SA Nursing council. Medical screening shall be conducted as per the following frequencies:

- Pre-employment
- Periodic medical screening
- Post-employment and
- When the scope of work or individual's medical condition (which has the potential to affect their ability to perform their duties) changes.

### 3.1.2.6 Non-compliance and Penalties

Eskom will view the following at-risk behaviour in a very serious light:

- Disregarding any requirements contained in OHSA, this document, site specific health and safety requirements and plan.
- Performing an unsafe act or creating an unsafe condition that could pose a danger to themselves or to others.

- A Principal *Contractor* allowing any of their employees or subcontractor's employees (including casual labourers, or labour broker employees) to work on any site without ensuring that each employee has received proper training.

If any of the above (inclusive but not limited to) are noted, it may result in cancellation of the contract.

### SAFETY NOTIFICATION ARNOT POWER STATION GMR 2.1

The following services as a compliance and notification instruction with reference to the OSHACT, Act 85 of 1993 and any amendments thereto; BCEA and LRA of South Africa.

All safety related incidents (Category A, B&C, Fire incidents; Usage of Fire Extinguishers and Near misses) shall be immediately reported to Arnot Power Station Safety Risk Management Personnel.

All Category C Incidents shall be immediately notified to the Outage Manager, either telephonically or in person.

All personnel are allowed to wear Safety Harnesses while walking in the plant if they are secured properly onto the person and no loose sections of the Harnesses drags on the floors, gratings, etc. where it can get caught and restrict a person's movement. Harnesses are not allowed in any lift.

During working on elevated positions all personnel shall wear Safety Harnesses attached to lifelines or secured as per Contractors Fall Protection Plan, Which each Contractor shall have written and available on site for perusal, as and when required.

All Safety Harnesses shall comply with SABS EN 362:1992; 363:1992; 365:1992; 364:1992 Codes of Practice.

In terms of Section 16.1 of the OSHACT, "Every chief executive officer shall as far as is reasonably practicable ensure that the duties of his Employer as contemplated in the Act, are properly discharged." Basically every employee, permanently/temporary/part-time/sub-contracted onto the ARNOT site shall be treated as an "employee" in terms of the Act whilst under your "direct supervision and care".

All Employees as stated above in 5 have a right to "free issue" of safety equipment, which shall be supplied to them prior to commencement of the work. The equipment shall comply to the relevant SABS standards and shall be in proper working condition, clean and undamaged whilst working on the ARNOT Site.

In terms of the BCEA and LRA all employees shall be afforded a fair minimum wage, including allowances for meals and transport, if not provided, which has been agreed and set by the relevant Bargaining Councils, which form part of the Acts.

All employees shall be granted 3 breaks during the 12 hour shift (1x15 minute break in the morning; 1x30 minute lunch break midday; and 1x15 minute break in the afternoon). Refreshments or meals shall be provided or be the responsibility of the Contractor (Employer). Employees cannot be allowed to work without having proper meals or refreshments.

All Contractor employees entering the Arnot Power Station site shall be medically fit. A certificate shall be issued by a Registered Occupational Health Worker who carried out the full medical examination. Basically a full evaluation (Red Ticket) shall be done and those that pass these examinations shall be allowed to work on Arnot Power Station.

In terms of Section 8.2 & 18.3 of the OSHACT, Employers shall ensure employees working at Arnot Power Station are trained in the hazards associated with the tasks and the precautionary measures are taken in the interest of health and safety. The responsibility shall include compliance and adherence to the Eskom Plant Safety Regulation, Permit to work system and Emergency Care.

All Contractors to ensure that the Arnot Power Station Emergency Alarm is activated for serious injuries and the injured shall not be moved by the Contractors staff unless in a condition which threatens the injured or other parties life. Movement of injured persons (employees) shall be done by a trained First Aider, who shall be at the site at all times during the work phase.

All Contractors shall send a Safety Officer/ Representative to all Safety Meetings arranged by the Power Station.

Safety Officers shall be at site or as reasonably practical to ensure that all hazards risks are identified and corrective actions is taken.

All Employers shall ensure that all employees disregarding a safety instruction is not allowed to be a risk to the contractor, Arnot Power Station or other parties whilst on this site. The appropriate disciplinary action shall be taken against these employees.

The Contractor shall have daily toolbox talks, periodic site inspections, job observations, risk assessments, safety equipment checks and safety talks with all employees.

Safety induction will be done by the Power Station on prior arrangements but is not the minimum requirement. Induction and hazards training shall be done by the Contractor.

In terms of section 37.2 of the OSHACT, you the Contractor will ensure compliance with all requirements of the OSHACT and any instruction/ notification that enhances those requirements.

All Contractors to ensure that a Safety Manual is completed prior to working on site and the relevant appointees are fully conversant with their responsibilities are trained /competent in these requirements, training proof is available and appropriate re- training is done.

Contractors to ensure that all staff, whether permanent/non-permanent/ supplied by Labour Broker are competent in their relevant disciplines that that they are employed/contracted in and all proof of training, experience, etc. is available and is current. Appropriate re-training shall have been done.

Due to all staff being under the "direct supervision and control" of yourself, they shall and will be treated as an 'employee', as defined in the OSHACT, Act 85 of 1993.

All equipment, welding panels, compressors, pneumatic tools, electrical equipment shall comply with a relevant SABS Code of practice and all documentation related to this shall be made available as and when required, except for welding panels which shall only be connected by Arnot Electrical Department with a certificate of Compliance submitted prior to request. All pneumatic tools shall have had an inspection covering condition of pressure components, including piping, spring loaded bolts, safety devices and controls. A certificate must be issued by the hire company to the Main/Sub-Contractor confirming the tool is in a good and acceptable working condition. Proof of inspection must be issued by the Hire Company to lesser prior to bringing onto Arnot Power Station Site.

#### COMPLIANCE TO 5 IDENTIFIED LIFE SAVING RULES (CARDINAL RULES)

##### RULE 1: OPEN, ISOLATE, TEST, EARTH, BOND, AND/OR INSULATE BEFORE TOUCH

(This is any plant operating above 1000v)

No person may work on any electrical network unless:

He/she is trained and authorised as competent for the task to be done;

A pre-task risk assessment to identify all risks and hazards has to be conducted prior to any work Commencing;

An equipotential zone is created for each worker on the job site by earthing, bonding, and/or insulating according to approved procedures;

all conducting material is connected together, all staff on site wear electrical safety shoes, and insulating techniques are applied according to standards; and

the authorised person (team leader) has certified and shown all team members the apparatus is safe to work on.

##### RULE 2: HOOK UP AT HEIGHTS

Working at heights is defined as any work performed above a stable work surface or where a person puts himself/herself in a position where he/she exposes himself/herself to fall from or into.

No person may work at height where there is a risk of falling unless:  
A pre-task risk assessment to identify all risks and hazards has to be conducted prior to commencing any work at height;  
he/she is appropriately trained;  
he/she is appropriately secured during ascending and descending; and  
he/she is using an approved fall arrest system where applicable.

### RULE 3: BUCKLE UP

No person may drive any vehicle on Eskom business and/or on Eskom premises:  
unless the driver and all passengers are wearing seat belts.

### RULE 4: BE SOBER

No person is allowed to work under the influence of drugs and alcohol.  
"Under the influence" means the use of alcohol, drugs, and/or a controlled substance to the extent that;  
the individual's faculties are in any way impaired by the consumption or use of the substances; or the  
individual is unable to perform in a safe, productive manner; or  
the individual has a level of such substances in his/her body that corresponds to or exceeds accepted  
medical/legal standards; or  
the individual has a level of alcohol in his/her body that is greater than 0.02% blood alcohol concentration.  
This includes any level of an illegal substance in the body, irrespective of when the substance was used.

### RULE 5: ENSURE THAT YOU HAVE A PERMIT TO WORK

Where an authorisation limitation exists, no person shall work without the required Permit to Work (PTW)  
which is governed by the Plant Safety Regulations, Operating Regulations for High Voltage Systems  
(ORHVS) etc.

No plant is to be returned to service without the cancelation of all permits on that plant in accordance with  
procedures.

NB: In the case of live work, a "live work declaration form" is to be completed by the authorised person who  
is the person responsible for the safe execution of the work according to relevant standards and procedures.

Please ensure that these rules are understood and communicated with the urgency that they deserve. If any  
Of these rules are unclear or the consequences not understood, please do not hesitate to discuss it with  
Eskom.

We would like to continue our current partnership and therefore urge your support in the implementation and  
upholding of these rules.

## **3.2 Environmental constraints and management**

The management and staff at Arnot Power Station are committed to generate low cost power without  
compromising its responsibility towards the natural environment. Arnot Power Station management has  
decided to implement and align its environmental management system in compliance with SABS ISO  
14001:1996 as a means of managing impacts to and ensuring continual improvement of the environment in  
which it operates.

The Contractor need to comply with ISO 14001 on environmental management.

### **The environmental policy for Arnot Power Station is set out below:**

- We are committed to sustainable development and will actively work to reduce the impact on the  
natural environment resulting from the power generation process.
- We commit to continual improvement in our performance and aspire to minimum harm to people  
and the environment



**Whenever we conduct our business, we will:**

- Develop, implement and maintain an environmental management system that is consistent with internationally recognised standards.
- Effectively and efficiently manage the natural resources required to generate electrical power
- Comply with the requirements of environmental legislation and adhere to Eskom's corporate policies and procedures on environmental management;
- Set and achieve targets, that include preventing pollution, to address our environmental aspects and impacts
- Develop our people and provide resources to meet our targets
- Communicate and engage with our employees, clients, regulatory authorities and suppliers to build relationships based on integrity, honesty, openness and involvement to meet the requirements of this policy
- Increase environmental sensitivity and awareness among station management, employees and the community and achieve active involvement of all parties, with respect to environmental matters

**And promote Arnot Power Station and Eskom as environmentally responsible organisations to outside parties**

We will review and report our progress regularly and ensure this policy remains relevant to the needs of our stakeholders. We will be satisfied when we achieve our targets toward minimum harm to people and the environment, and are valued by our clients and the communities in which we work

**Refuse Disposal**

The Contractor is responsible to keep the work area clean of any rubble.

All waste introduced and/or produce on the Employers premises by the Contractor for this contract, is handled in accordance with the minimum requirements for the Handling and Disposal of Hazardous Waste in terms of Government Legislation as proclaimed by the Department of Water Affairs and Forestry Act 1994 Ref: ISBN0621 – 16296-5.

The Employer provides colour coded bins for the refuse disposal.

The Employer empties these bins.

Contractor keeps the work area clean of any rubble, and places all refuse into bins provided.

The Contractor ensures that all workers under his control strictly adheres to the correct use of refuse bins:

- |              |   |
|--------------|---|
| Maroon bins: | - Scrap metal only                      |
| White bins:  | - Lagging and general household rubbish |
| Yellow bins: | - Ash, dust, coal dust and sand         |

**3.3 Quality assurance requirements**

The contractor shall comply with the quality procedures and codes relevant for each task Order. Also, a PQP is to be submitted by the contractor for each SOW for a particular outage based on the task order issued. The PQP documentation is to be discussed and accepted by the employer 2 weeks before any work commences for a particular outage.

As a minimum, the PQP for the contractor should include hold points on all safety related clearances, i.e HV permit issued before work commences.

### 3.3.1 Quality management system

The Contractor provides the complete QA&QC documentation including that of his Subcontractor(s), for all Plant, Material and Equipment, in compliance with SANS 9001:2008 Edition 4, "Quality Management Systems - Requirements", and the *Employer's* standard GGS 0462 Rev 1 "Quality Requirements for Engineering and Construction Works in Generation"

The *Contractor* further ensures that the Subcontractor(s) programmes comply with the requirements of the Works Information

The *Contractor* notifies the *Service Manager* of any changes to the Quality System and obtains agreement prior to implementation on existing orders and contracts, or sub orders and sub contracts

### 3.3.2 Quality documents submitted after the contract date

The *Contractor* submits a fully detailed Quality Assurance Programme (QAP) for acceptance by the *Project Manager* within four weeks of the *Contract Date*.

The documents submitted by the *Contractor* shall include the following:

- Copy of the Quality Manual
- Copy of the Quality System Procedure
- Copy of the Contract Quality Management Plan
- Copy of Quality Control Plans
- Copy of the proposed index of the QA/QC, inspection and test records

The *Contractor* will further submit the following documents during the course of the contract:

- Non-conformance reports (NCR's) raised by the *Contractor*
- Notification of any planned changes to the *Contractor's* quality manual, quality system procedures, contract quality management plan or quality plan for acceptance by the *Service Manager* prior to implementation
- Concession/production permit applications and supporting documentation
- Data books and/or data packages

### 3.3.3 Contract quality management plan requirement

The *Contractor* prepares a contract quality management plan that, where appropriate, indicates the following:

- Indicates the interface with the *Contractors* quality system and applicable documents such as procedures and work instructions
- Establishes communication channels between the *Contractor* and the *Service Manager* in respect of quality and the integration of such with the prescribed contract communication channels
- Indicates how specific subcontractors will be monitored
- Identifies items or activities for which quality control plans will be prepared
- Identifies the specifications, drawings and acceptance criteria for material for which quality control plans are not required
- Identifies the areas or processes requiring special controls
- Identifies the *Contractor's* Management Representative and personnel responsible for the control of quality activities and their relationship to the *Contractor's* management structure
- Identifies the documents which are to be submitted to the *Service Manager*
- Indicates the *Contractor's* quality monitoring programme

The *Contractor* periodically updates the contract quality management plan to reflect changes in any of the above details. The frequency of such updates is determined by the *Service Manager* but will not be greater than one year.

### 3.3.4 Quality control plan

The *Contractor* quality control plans cover inspection and test proposals for items or activities to be supplied as part of the *works*.

The quality control plan indicates the following as appropriate:

- The identification of the item
- The material
- A list of the sequence of operations including inspections and tests
- The identification of the specification, drawings or procedures for each operation
- The acceptance criteria with reference to the appropriate technical specification, in-house, national or international standard and relevant clause number
- The inspections and tests the *Contractor* has nominated for hold and witness points and it is shown in the Accepted Programme.
- During contract execution no actions to provide the *Works* are implemented at any of the *working areas* before the relevant quality control plans and procedures are accepted by the *Service Manager*.
- Proof of the *Contractor's* personnel competence in terms of Reg 18 (5 and 6) of the OHS Act is submitted to the *Service Manager* for acceptance prior to the commencement of any work on Site and is shown in the Accepted Programme.

Quality control plans with hold and witness points are supplied to the *Service Manager* for his review and acceptance 15 days before the start of each of the following phases and or stages and it is shown in the Accepted Programme:

- i. Investigation phase
- ii. Design and engineering phase
  - Technical clarification stage.
  - Design freeze stage
- iii. Production engineering phase
  - Procurement, fabrication and delivery stage.
- iv. Construction and erection phase.
- v. Commissioning phase
  - Commissioning stage.
- vi. Operational test phase.

### 3.3.5 Access to the *Contractor's* and subcontractor(s) premises and facilities

The *Contractor* and/or its subcontractor gives access to the *Supervisor* and/or the Authority/Agency and the Regulator where appropriate to their premises and facilities at reasonable times to conduct quality assessments, audits, surveillances and inspections to establish compliance with the contractual requirements.

### 3.3.6 Inspection and testing

The *Contractor* gives at least 72 hours advance notification to the *Supervisor* or the Authority for inspection/test and hold or witness points, which require their attendance. The *Contractor* confirms readiness for inspection at least 24 hours prior to the test.

The *Contractor* ensures that all work has been fully inspected, accepted and documented prior to requesting any inspection by the *Supervisor*.

**3.3.7 Quality records**

The *Contractor* prepares and submits to the *Service Manager* an Index of QA/QC and inspection and test records prior to the commencement of work.

The *Service Manager* determines which documents are to be submitted during the performance of work and reviews the index and request changes if required. The *Contractor* conforms to the Index approved by the *Service Manager*

The *Contractor* ensures all records identify the items, equipment and/or activities to which they pertain and collates indexes and securely stores the records in such a manner that they are readily retrievable.

The *Contractor* implements appropriate administrative controls to limit access to prevent inadvertent loss of or damage to records.

The *Contractor* stores all quality records. The *Contractor* only destroys or discards quality records with the approval of the *Service Manager*.

The *Contractor* presents on completion of the works all quality records in the form of a data package. The package is indexed and shows the entire contents.

**3.3.8 Standard Specifications**

- The *Contractor* will abide by the SHE requirements of Arnot Power Station. The risk is the responsibility of the contractor and will be managed by the *Service Manager* in conjunction with the contractor.

The OHASA, Eskom's current safety standards, ISO14001, health and environmental procedures and policies shall be adhered to at all times.

**4 Procurement****4.1 People****4.1.1 Minimum requirements of people employed**

As required to complete the *works*

**4.1.2 BBBEE and referencing scheme**

Please refer to section 4.2 of this Works Information

**4.1.3 Accelerated Shared Growth Initiative – South Africa (ASGI-SA) currently known as Supplier Development, Localisation and Industrialisation**

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Accelerated and Shared Growth Initiative - South Africa known as Supplier Development, Localisation and Industrialisation in accordance with and as provided for in the *Contractor's* ASGI-SA currently known as Supplier Development, Localisation and Industrialisation Compliance Schedule stated below

**4.1.3.1. Job Creation**

Tenderers are encouraged to propose the number of jobs to be created and retained as a result of this Contract

Description	Amount/Number
Number of Jobs to be created	0

Number of Jobs to be retained	4 (Locally employed)
-------------------------------	----------------------

#### 4.1.3.3. Corporate Social Investment

Employer's target	Contractor Proposed Target
2% of the contract value	2% of the contract value

NB: In the event that the contractor fails to achieve his/her SDL&I committed targets a penalty clause of 2.5% shall apply.

The *Contractor* shall keep accurate records and provide the *Service Manager* with reports on the Contractor's actual delivery against the above stated ASGI-SA currently known as Supplier Development, Localisation and Industrialisation criteria.

The *Contractor's* failure to comply with his ASGI-SA currently known as Supplier Development, Localisation and Industrialisation obligations constitutes substantial failure on the part of the Contractor to comply with his obligations under this contract.

## 4.2 Subcontracting

### 4.2.1 Preferred subcontractors

Not applicable.

### 4.2.2 Subcontract documentation, and assessment of subcontract tenders

The *Contractor* will provide the *works* as if he had not subcontracted and are liable and accountable for all actions of his subcontractors

### 4.2.3 Limitations on subcontracting

- a) The *Contractor* under no circumstances recruits labourer(s) at Arnot Power Station's security gates.
- b) The *Contractor* may be requested by the *Employer* to submit details of the qualifications and experience for each category of personnel and specialists for which a rate is submitted

### 4.2.4 Attendance on subcontractors

Not applicable.

## 4.3 Plant and Materials

### 4.3.1 Specifications

No new Plant and Materials will be free issued by the *Employer*, except the re-use of existing plant and materials (if the *Contractor* envisages using it).

### 4.3.2 Correction of defects

The *Contractor* is to provide the complete list of spares with all documents to be handed over; in addition the spares list that forms part of the maintenance contract are to be provided by the contractor as and when required as part of the works.

### 4.3.3 Contractor's procurement of Plant and Materials

The *Employer* requires warranties from suppliers to be in favour of the *Employer*. Also includes requirements for vendor data which the *Employer* may need after Completion of the whole of the *works*

#### **4.3.4 Tests and inspections before delivery**

Not applicable. All tests to be performed on site.

#### **4.3.5 Plant & Materials provided "free issue" by the *Employer***

Not applicable.

## **5 Working on the Affected Property**

### **5.1 *Employer's* site entry and security control, permits, and site regulations**

All site access is controlled through the designated access gate.

The Contractor is informed of the access procedure through Site regulations and that such procedures may change depending on the prevailing security situation.

The Contractor shall provide and install barricades and warning devices to ensure that that equipment and persons are not exposed to danger or to prevent access to dangerous areas.

All welding, flame cutting and grinding work shall be properly screened to protect persons from arc flashes or eye injuries.

All grating shall be covered with an adequate protection screening when welding or flame cutting in the vicinity is undertaken strictly with the Employer's Directive SP SER 003.

All vehicles must be driven with due consideration for personnel and property. A maximum speed limit of 40 km/h will be adhered to on the premises at all times.

The Employer follows an accident prevention policy that includes the investigation of all accidents involving personnel and property. This is done with the intention of introducing control measures to prevent a recurrence of the same incident. The Contractor is expected to co-operate fully to achieve this objective. The Service Manager must be informed within 24 hours of any injuries or damage to property or equipment. This report does not relieve the Contractor of his legal obligation to report certain incidents to the Department of Labour, or to keep records in terms of the Occupational Health and Safety Act, and Compensation for Occupational Injuries and Diseases Act.

### **5.2 People restrictions, hours of work, conduct and records**

Restrictions and hours of work may apply on some Sites. It is very important that the *Contractor* keeps records of his people on Site, including those of his Subcontractors which the *Service Manager* or *Supervisor* have access to at any time. These records may be needed when assessing compensation events

### **5.3 Cooperating with and obtaining acceptance of Others**

Not applicable

### **5.4 Records of *Contractor's* Equipment**

Records are to be kept of Equipment on Site including whether it is owned or hired. Should the Contractor requires to use mobile crane, fork lift and scaffold to notify the Service Manager 24 hours in advance

### **5.5 Site services and facilities**

### **5.5.1 Provided by the *Employer***

#### **Contractor's Yard**

A site for the Contractor's yard is provided by the Employer. A written request, indicating the Contractors requirements in locality and area of storage, office and Work Shop sites is submitted to the Service Manager as soon as possible after the Contract Date.

#### **Potable water**

Potable water for construction purposes is also available free of charge. Any installation is for the Contractors account.

#### **Meals**

Meals on site for the Contractors personnel are not available.

#### **Sunitary Facilities**

Sanitary facilities are provided by the Employer.

#### **General**

The Contractor is to comply with all Site requirements and instructions. The onus is on the Contractor to ensure his familiar with the Employers Site regulations and Inspections.

#### **Fire Protection**

The Contractor is to comply with requirements of Eskom Standard NWS 1494 Revision 4 "Fire prevention and protection of Contractors premises on Engineering Sites" and of Site Regulations pertaining fire protection. (NWS 1494 Revision 4).

#### **Fire Precautions**

Any tampering with the Employers fire equipment is strictly forbidden. All exit doors, fire escape routes, walkways, stairways, and stair landings must be kept free of obstruction, and not to be used for work or storage at any time. Fire fighting equipment must remain accessible at all times.

#### **Plant Safety Regulation**

The Employer shall on request from the Contractor isolate required plant from all sources of danger as described in the Plant Safety Regulation. The *Contractor* shall conform to all rules and regulations applicable to plant safety and shall ensure their names are entered into the worker register prior to working on the plant.

#### **Induction training to employees**

No person will be issued with an access permit without proof that the person did attend the local Arnot Power Station induction course.

A one-day access permit will be issued for persons attending the induction course. It is the Contractors responsibility to arrange with the *Service Manager* one week in advance for the course booking.

#### **Supply of the construction power**

##### **Conditions of the supply for Erection**

In order to comply with the Electrical Installation Regulations under the Occupational Health and Safety Act, no 85 of 1993 the following requirements are to be met before electricity is supplied it is expected that the Contractor is in possession of a valid certificate of compliance. Your electrical installation is inspected and tested by an accredited person to ensure that it complies with the requirements of the Occupational Health and Safety Act, no 85 of 1993 and the code of Practice for wiring of premises, SABS 0142. After you have obtained the certificate of compliance, the Employer is to inspect your electrical installation and if satisfied, it is connected and supplied from the construction supply.

The *Contractor* provides at his own expense all temporary wiring and cabling to lead power from the Employers supply points, to where it is required, maintain same and remove on completion. These points of supply are the points designated by the Project Manager.

**Warning:**

Phase rotation may change during power breaks. Contractors are responsible to check rotation of their equipment before recommencing work.

**Application for supply**

A standard "Application for Power" form is completed and submitted to the Project Manager at least two weeks before a power supply is required. The Employer guarantees the continuity of power supply for a minimum 26 out of 30 days.

**Cost of supply**

There is no charge for electricity used for construction purposes and no connection fee is levied for the point of supply.

**5.5.2 Provided by the *Contractor***

The Contractor provides, erects and maintains for own use, adequate size office accommodation and stores together with such drainage, lighting, heating and hot and cold water services as may require in the area designated by the *Service Manager*.

The Contractor is to dismantle and clear off site all such temporary structures and associated foundations and infra-structure.

**5.6 Tests and inspections****5.6.1 Description of tests and inspections**

All tests and inspections to be as per the commissioning procedure agreed upon by the *Service Manager* and the *Contractor*. This also included checks defined in the process quality plans.

**5.6.2 Materials facilities and samples for tests and inspections**

All materials and facilities required for tests and inspections to be made available by the contractor.

**6 List of drawings****6.1 Drawings issued by the *Employer***

N/A