

PART 3: SCOPE OF WORK

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C3.1: EMPLOYER'S SCOPE

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1 Description of the Services

Multidisciplinary engineering disciplinary service providers with experience in Power Station Bulk Material Handling and/or construction activities is required for an on-the-job training academy to build competence in one or more of the following categories:

- 1) **Bulk Material Handling Project Management;**
- 2) **Bulk Material Handling Technical Areas (Coal, Ash, Dust Handling Plants and Auxiliary Systems);**
- 3) **FGD Plant and**
- 4) **Slurry Plant**

Primary objective is to introduce highly skilled Technician's and Artisans to apply **TRANSFER OF KNOWLEDGE** within ERI BMS Maintenance Multi-Disciplinary Engineering activities at numerous coal power station within ESKOM Holding (SOC) Ltd.

This Training Academy will aim to reduce human errors, delays and rework which impact on timelines, increase costs and quality of work. Equally important is to increase the capabilities of the human resources to understand on the job knowledge spanning from planning, plant inspections, first-line fault finding, supervisory and management aspects of the operations.

The envisaged training academy will drive the up-skilling and re-skilling of the employees for enhanced performance in the medium to long term. The operations / business units require this training approach to increase the quality of work. This is expected to be reflected in –among others- the customer satisfaction survey and feedback on performance.

1.1 Executive Overview

The need for the on-job training was triggered by some of the plant failures that have been experienced at various sites which pointed to the lack of knowledge and skill. Over the years, the business has lost a number of skills due to natural attrition whilst taking on a number of additional activities.

The academy will support improved plant availability, decrease load losses, compliance to asset management principles, increase the mean time between failures taking a proactive approach to plant maintenance and reduce risks affiliated with poor quality work at the power stations.

1.2 Interpretation and Terminology

The following abbreviations are used in this Scope:

Abbreviation	Meaning given to the abbreviation
ASAQS	The Association of South African Quantity Surveyors
BMS	Bulk Material Services
CS	Construction Services
SA DoL	SOUTH AFRICAN Department of Labour
ECSA	Engineering Council of South Africa
ISO	International Standards Organisation
SACPCMP	South African Council for Project and Construction Management Professionals
OHS	Occupational Health and Safety
PCM	Process Control Manual
PLCM	Project Life Cycle Model
PMBOK	Project Management Body Of Knowledge
PMSA	Project Management South Africa

2 Specification and Description of the Services

The entity will provide their required and competent personnel in the category (or categories) they choose to bid for, either at Lephalale, Mpumalanga – Greater Emahleni area.

The personnel will be based on site (either at Lephalale, Mpumalanga – Greater Emahleni area) and will act as on-the-job trainers for the duration of the program. The various levels on exposure and strictly confined to Multi-Disciplinary Engineering Technicians and Artisans to enable knowledge transfer.

The categories, and the personnel required per category and per site are listed in the table below.

2. Category of Expertise Required for Knowledge Transfer

2.1 Engineering Technician

Engineering Technician holds a recognized or accredited academic qualification, which is a National Diploma (NDip) in Engineering obtained at a SOUTH AFRICAN University of Technology OR previously called Technikon. [CERTIFIED QUALIFICATIONS are required as part of submission]

2.2 Artisan

Individuals would have completed a four (4) OR five (5) year period of apprenticeship training as supported and approval by the **SOUTH AFRICAN Department of Labour [DoL]**.

- **“Apprenticeship”** – means a learnership in respect of a listed trade, and includes a trade-test in a respect of that trade deemed as RED SEAL; [Definition of “apprenticeship” inserted by s. 1 of Act 37/2008];
- **“Artisan”** – means a person that has been certified as competent to perform a listed trade in accordance with the Act; [Definition of “artisan by s. 1 of Act 37/2008];
- **“SOUTH AFRICAN Department of Labour”** - [Definition of “Department” substitute by s. 4 of Act 26/2010];

2.3 Non – Qualified experienced person

Person with recognized prior learning or extensive experience who is able to supervise Artisan's or Technician's on site

2.4 Definition Table

Category	Site 1	Site 2	Site 3
1. Bulk Material Handling			
Project Management			
Project Managers (Technicians only)	2	2	
2. Bulk Material Handling			
Technical			
Coal and Ash Handling Site/Area Managers (Technicians only)	1	1	
Ash Conveyor Site/Area Managers (Technicians only)	1	1	

Coal Plant Site/Area Managers (Technicians only)	1	1
DHP and Silos Site / Area Managers (Technicians only)	1	1
Technical Supervisors (Technicians OR Artisans)	2	2
Maintenance Planners (Technicians OR Artisans)	1	1
3. Auxiliary Plant and FGD		
Site/Area Managers (Technicians only)	1	1
4. Auxiliary Plant and FGD		
Slurry Plant Operations Manager (Technicians only)		1
Slurry Plant Maintenance Manager (Technicians only)		1

Internal employees will shadow the Entity (Experience Resources at Technician and Artisan levels Only) to note down critical training aspects and a knowledge repository and technical skills transfer can be built for sustainability of this academy in the long term. The documentation of the training content can be designed for later use and reference.

Critical skills gaps at ERI BMS and CS to be addressed for each of the categories in the table above, and for Slurry Plant are listed in sections 2.1 to 2.3 below.

2.5 Bulk Material Handling Project Management Gaps

- Document management, knowledge management, information systems, data, integrity, licensing, activity planning and managing critical paths, permitting and project reporting

effort throughout the project life cycle. Run Projects aligned to our Policies and Procedures (e.g. PMBOK).

- Direct and Manage the Integration of the Project Services within the project.
- Report on deliverables of the project services function.
- Manage the project services team performance.
- Prioritize the project services function compliance to financial management principles.
- Evaluate project deliverables against the original stakeholder requirements
- Management communication and relationships with all key stakeholders.
- Manage compliance with all Eskom and Site related governance and safety, health environment, risk and quality requirements.

2.6 Bulk Material Handling Technical Gaps –

Coal Plant, Ash, Dust Handling Plants; Auxiliary Systems; FGD Plant and Slurry Plant.

- Understanding of seasonal implications and management thereof for both maintenance and operations
- Maintenance activities such as (Multi-Disciplinary Coverage) Mechanical, Electrical and Control & Instrumentation Maintenance on Planned Maintenance (PM) as well as Corrective/Breakdown Maintenance (CM)
- Operating activities such as walking the plant for plant checks, report defects as and when identified, reset plant after tripping, communicate with control room in case there are issues in the plant, high level fault finding and root cause identification.
- The service provider shall assist with the compilation of necessary training materials to be able to train both maintenance and operating staff including assessment tools for competency. The following areas requires the necessary interventions:
 - Pneumatic conveying plants;
 - Conveyor systems, belt training, maintenance and engineering;
 - Pump refurbishment and maintenance;
 - Flue Gas De-Sulphurisation;
 - Slurry Plants.
 - The service provider shall offer on-going support where required that includes on site response, telephonic support and buddy training of key operations staff in similar plants referenced above.

- Assist with the development of safe working procedures for the various activities including quality control plans.
- Guide the general overhaul (GO) works and ensures that all quality deliverables are met and exceeded.
- Conduct post GO work review to identify improvement areas in conjunction with site teams.
- Develop maintenance key performance indicators for use to track effectiveness of both maintenance and operating activities.
- Develop a recovery program as and when required for projects to be completed on time and, to improve plant reliability to 95% at any given time within the first 3 months of being involved.
- The scope involves supervisory training on the job training on planning, leading and organizing operation
- The service provider to conduct gap analysis and develop an intervention plan to address the gaps.

2.7 Gaps applicable to all the listed categories

2.3.1 Time Management

- Planning (Meeting of target dates and deadlines, link resources JIT principle, Procurement – have materials and services on Site at the right time)
- Integration of all project services. Weekly scheduled meetings to confirm plan
- Monitoring and Control

2.3.2 SHEQ Management (internal training supported by real time on the job application):

- Quality inspections by quality personnel
- Completion of Data Books and ITP's
- Mandatory and Statutory (OHS Act and Legal) compliance training.
- Incident/Accident Investigating and Reporting

2.3.3 Procurement Management (internal training supported by real time on the job application):

- Procurement plans.
- Needs to be treated as a live document with constant follow ups timeously before the service and or materials are required)
- Management of Orders and Contracts (DCF) in SAP

2.3.4 Risk Management

- Management and maintenance of identified and documented risks

- Constant identification and documenting new risks.
- Issue Logs needs to be maintained till close out

2.3.5 Human Resource Management (internal training supported by real time on the job application):

- Resourcing of project with correct skills on the JIT principle
- Competencies and Mandatory training.
- Planning
- Performance management

2.3.6 Contract/Commercial Management (internal training supported by real time on the job application):

- Contractual communications (NE
- Manage service/commodities providers in SAP. DCF
- Governance and Compliance

2.3.7 Cost Control

- Allowable vs Cost
- Reviewing and reporting on Earned Value Management to determine early warnings for corrective action

2.3.8 Project Close Out

- Lessons learnt
- Evaluating the final product against the original user requirement specification (URS)
- Retainers – Hand over documentation
- Close project in SAP

2.3.9 Soft Skills

- Communication and presentation skills – Verbal and Written
- Report writing
- Time management (Meeting target dates)
- Negotiation Skills
- Conflict Management
- Team management
- Stakeholder Management - Communities/SD&L
- Communication

- Planning
- Organizing

3 Constraints on how the *Entity* Provides the Services.

3.1 Management Meetings

The Parties will hold regular meetings to pro-actively and jointly manage the administration of the contract with the objective of minimising risks. Regular meetings of a general nature may be convened and chaired by the *Employer's Agent* as follows:

Title and Purpose	Approximate Time & Interval	Location	Attendance by:
Risk register and compensation events	Weekly or as agreed by the Parties	• On Site, (as per Employer' requirement)	<i>Employer's Agent, Entity and Others</i>
Overall contract progress and feedback	Monthly or as agreed by the Parties	• On Site, (as per Employer' requirement)	<i>Employer's Agent, Entity and Others</i>

Meetings of a specialist nature may be convened as specified elsewhere in this Scope or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *services*. Records of these meetings shall be submitted to the *Employer's Agent* by the person convening the meeting within five [5] 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.

3.2 Entity's Key Persons

The entity will provide details of Key Personnel (**Technicians & Artisans only**), Contact Details, Qualifications and other information the Entity deem necessary in the provision of the services. The Entity will provide the Organogram of the staff that will be assigned to provide the services.

3.3 Provision of Bonds and Guarantees

The form in which a bond or guarantee required by the *conditions of contract* (if any) is to be provided by the *entity* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

The *Employer* may withhold payment of amounts due to the *Entity* until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the *Entity* by the *Employer's Agent* to receive and accept such bond or guarantee. Such withholding of payment due to the *Entity* does not affect the *Employer's* right to termination stated in this contract.

3.4 Documentation Control and Retention

3.4.1 Identification and Communication

All Communication will be managed as per the requirement of the Contract.

3.5 Invoicing and Payment

The following details shall be shown on or attached to each Invoice to show how the amount due has been assessed:

The *Entity* shall address the tax invoice to **Accounts Payable** and include on it the following information:

- Name and address of the *Entity* and the *Employer's Agent*;
- The contract number and title;
- *Entity's* VAT registration number;
- The *Employer's* VAT registration number 4740101508;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
- (add other as required)

3.6 Management of work done by Task Order

To be advised.

3.7 Health and Safety

The *Entity* at all times complies with the health and safety requirements of the Employer. The *Entity* complies with the all conditions as prescribed by law as they may apply to the *services*. The *Entity* complies with the health and safety requirements of the specific project site.

3.8 Working on the *Employer's* property

The *Entity* works on the Employer's property and comply with the requirements of the Employer. The Employer makes all the necessary arrangements for the *Entity* to provide the services while working at the Employer's property.

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

The *Entity* complies with the entry requirements to the Employer's property. The Employer provides the *Entity* with the entry requirements for any particular project site.

3.8.2 People restrictions, hours of work, conduct and records

The *Entity* keeps records of working hours on the site. The *Employer's Agent* shall have access to these records at any time

3.9 Things provided by the *Employer*

The Employer makes all the arrangements and provides the facilities for the Entity to prove the services.

4 Information Relating to Providing the Services

4.1 The Approved Tenderer

Once the successful Tenderer has been approved each individual as deemed Technician [verbal test by ESKOM GX Specialists] and Artisan's [will be expected to complete a simple practical task by ESKOM GX Specialists] before they will be assessed and accepted to be competent to distribute knowledge as part of the training programme.

4.2 Assessment of Competence – Post Training

The assessment of competence has been explored in the skills audit conducted prior to the project inception. Each employee in the roles of listed in Section 1.2 will be trained for a month and thereafter will be assess on the key skills required to optimally function in the job. The Line Manager of the delegate will be enabled with the tools to continuously monitor the competence of the employee. In an event where there are noted skills gaps post training on the job, the employee will be engaged and re-sent for refresher training.

The Performance Compacts will be aligned to work outputs required and monitored in an ongoing manner. The Individual Development Plan (IDP) will address further training interventions if and where required. A constant focus on performance will build an efficient and high performing organization.

NOTE:

After six [6] months independent evaluation of training applied to ERI BMS will be conducted.

4.3 Logistics

An on-the-job training real time facility will be set-up at Medupi and Kusile for BMS and CS, as well as Matla Slurry Plant for ERI BMS. The technical experts will be located on these sites to upskill and reskill employees from Medupi and Kusile then other sites will send delegates through. This can cover two hundred & forty [240] employees per year in ERI BMS. The Entity (or Highly Experienced – Technician & Artisans) who do not reside in the surrounding geography of the power stations will be accommodated by ERI BMS for the duration of the training.

4.4 Key Performance Areas / Indicators

The project key performance indicators will be reviewed at length on a yearly basis

4.5 Documents Issued by the Employer

This is the list of documents issued by the Employer at or before the Contract Date and which apply to this contract.

Document Number	Revision	Title
240-46315120		On Job Training
240-46315190		Operator Safety during Training on Equipment in Operation
240-46314619		Operator Assessment Authorization and Moderation
240-46315160		Training and Development of Power Plant Operating Staff
240-46315224		Practitioner Development & Authorisation Procedure

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