

Title: Tender Technical Evaluation Strategy for Drakensberg Pumped Storage Scheme Brake Pad Replacement

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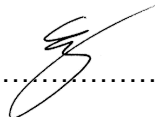
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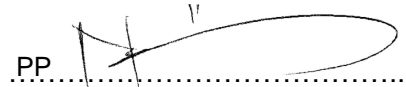
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1. INTRODUCTION

Drakensberg Pumped Storage Scheme consists of four pumped storage units. Each unit has a main unit shaft as one of the major components. The shaft rotates by means of water flowing through a runner of the turbine, which turns the rotor of the generator and generate electricity to the national grid of South Africa. A braking system is used to brake the unit from 30rpm to 0rpm when the unit is required to go to standstill, should the pony-motor fail. The braking system of each unit consists of 10 brake pads, which will have to be replaced in conjunction with their backing plates.

The following will be considered for the replacement of the brake pads, which can be described as follows:

The Contractor supplies 4 sets of brake pads with backing plates. Each set consists of 10 new non-asbestos brake pads, which are doweled and glued onto new steel backing plates. The Contractor delivers the new backing plates with new brake pads doweled and glued to them in a good condition to the Employer's site (Eskom Drakensberg Pumped Storage Scheme).

This document discusses the tender technical evaluation strategy for the supply and delivery of new non-asbestos brake pads doweled and glued to new backing plates.

2. SUPPORTING CLAUSES

2.1 SCOPE

The works include the following:

- The *Contractor* supplies 4 sets of 10 new steel backing plates, dowels and glues 10 new non-asbestos brake pads (Material: ZA Gold) to the new backing plates.
- The *Contractor* delivers the new backing plates with new non-asbestos brake pads doweled and glued to them in a good condition to the *Employer's* site (Eskom Drakensberg Pumped Storage Scheme).
- The *Contractor* repairs all defects.

The *Works* are thoroughly discussed in the Scope of Work & Technical Specification Document 31A/100361-G.

2.1.1 Purpose

The purpose of this tender technical evaluation strategy is to define the Mandatory Evaluation Criteria, Qualitative Evaluation Criteria and TET member responsibilities for tender technical evaluation. The technical evaluation strategy serves as basis for the tender technical evaluation process.

2.1.2 Applicability

This document applies to the Drakensberg Pumped Storage Scheme Braking and Jacking System. The project applies to the Turbine Engineering Department, Drakensberg Mechanical Maintenance Department, Procurement Department and Drakensberg Pumped Storage Scheme.

2.2 NORMATIVE/INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

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2.2.1 Normative

- [1] 240-48929482: Tender Technical Evaluation Procedure
- [2] Doc. No. 31A/100361-G - Scope of Work & Technical Specification – DRP – Brake Pad Replacement

2.2.2 Informative

- [3] Drawing 18.48/6448 Sheet 1 Rev. 0 - Assembly Drawing – Generator Brake Pad and Brake Pad Backing Plate
- [4] Drawing 18.48/6448 Sheet 2 Rev. 0 - Detail Drawing – Generator Brake Pad
- [5] Drawing 18.48/6448 Sheet 3 Rev. 0 - Detail Drawing – Generator Brake Pad Backing Plate
- [6] Drawing 18.48/6448 Sheet 4 Rev. 0 - Detail Drawing – Generator Brake Pad Dowel Pins

2.3 DEFINITIONS

2.3.1 Classification

Controlled Disclosure: Controlled Disclosure to external parties (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

Abbreviation	Description
Do. No.	Document Number
PSS	Pumped Storage Scheme
QCP	Quality Control Plan
Rev.	Revision

2.5 ROLES AND RESPONSIBILITIES

N/A as per 240-48929482: Tender Technical Evaluation Procedure

2.6 PROCESS FOR MONITORING

N/A

2.7 RELATED/SUPPORTING DOCUMENTS

All referenced documents as per Section 2.2.

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3. TENDER TECHNCIAL EVALUATION STRATEGY

3.1 TECHNICAL EVALUATION THRESHOLD

The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 70%.

3.2 TET MEMBERS

Table 1: TET Members

TET number	TET Member Name	Designation
TET 1	Jaco van Zyl Pr. Eng.	System Engineer – Turbine Engineering
TET 2	Edmond Dumema Pr. Eng.	Senior Engineer – Turbine Engineering
TET 3	Isak Meyer Pr. Eng.	Senior Engineer – Turbine Engineering

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3.3 MANADATORY TECHNICAL EVALUATION CRITERIA

Table 2: Mandatory Technical Evaluation Criteria

	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Motivation for use of Criteria
1.	Brake pad material.	<p>The brake pad material specification is: ZA Gold (non-asbestos).</p> <p>The <i>Contractor</i> submits written confirmation of ZA Gold availability to the <i>Employer</i> for acceptance as part of the tender returnable documents. The submission of the ZA Gold material availability is mandatory.</p> <p>A detailed quote stating the brake pad material as ZA Gold will also be accepted by the <i>Employer</i>.</p>	<p>Drakensberg Unit 2 is equipped with ZA Gold (non-asbestos) brake pads, as an equivalent to the original Ferodo MR41 (asbestos) brake pads.</p> <p>ZA Gold will be mandatory to promote standardisation of the Drakensberg PSS operating units' braking and jacking systems.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>
2.	Brake pad size.	<p>The brake pad size specification is: 480mm (length) x 360mm (width) x 19mm (thickness)</p> <p>The <i>Contractor</i> submits written confirmation that the brake pads size can be supplied to the <i>Employer</i> for acceptance as part of the tender returnable documents. The size specification is 480mm x 360mm x 19mm. The submission of this written confirmation is mandatory.</p> <p>A detailed quote stating the brake pad size as 480mm x 360mm x 19mm will also be accepted by the <i>Employer</i>.</p>	<p>The brake pad size design base will not be changed. The size requirements is exactly as per the original design and therefore a mandatory technical evaluation criteria.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>
3.	Brake pad backing plate/ brake shoe size.	<p>The <i>Contractor</i> submits written confirmation that the brake pad backing plate/ brake shoe size (as per Drawing 18.48/6448 Sheet 3) can be supplied to the <i>Employer</i> for acceptance as part of the tender returnable documents. The exact size specification is indicated in the brake pad backing plate drawing – Drawing 18.48/6448 Sheet 3. The submission of this written confirmation is mandatory.</p>	<p>The brake pad backing plate/ brake shoe size design base will not be changed. The size requirements is exactly as per the original design and therefore a mandatory technical evaluation criteria.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>

3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Table 3: Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)										
1.	<p>Brake pad backing plate/ brake shoe material.</p> <p>The material specification for the brake pad backing plate/ brake shoe is tabled below:</p> <table border="1"> <tr> <td>Standard</td><td>BS 970</td><td>BS 970:1955</td><td>Werkstoff No.</td><td>SAE/AISI</td></tr> <tr> <td>ID</td><td>070 M 20 (070)</td><td>EN3A</td><td>1.0402</td><td>1020</td></tr> </table> <p>Acceptable and unacceptable risks for this qualitative technical criteria can be found in Section 3.6.1.</p>	Standard	BS 970	BS 970:1955	Werkstoff No.	SAE/AISI	ID	070 M 20 (070)	EN3A	1.0402	1020	<p>The <i>Contractor</i> provides written confirmation of the specified brake pad backing plate/ brake shoe material availability to the <i>Employer</i> for acceptance as part of the tender returnable documents.</p> <p>A detailed quote stating the specified brake pad backing plate/ brake shoe material will also be accepted by the <i>Employer</i>.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>	20%	N/A
Standard	BS 970	BS 970:1955	Werkstoff No.	SAE/AISI										
ID	070 M 20 (070)	EN3A	1.0402	1020										
2.	<p>Proof of similar work executed and capabilities.</p>		40%	N/A										
2.1	<p>Proof of similar services provided – brake pads.</p> <p>The <i>Contractor</i> supplies a list of services provided, similar to supplying of brake pads, as evidence. The similar services provided should cover at least 50% of the specified brake pad size of 480mm x 360mm x 19mm. Therefore, a brake pad size of 240mm x 180mm x 10mm or larger. The brake pad information can be found in Drawing 18.48/6448 Sheet 2.</p> <p>Acceptable and unacceptable risks for this qualitative technical criteria can be found in Section 3.6.1.</p>	<p>The <i>Contractor</i> supplies a list of brake pads supplied to the <i>Employer</i> (or other companies), as part of the tender returnable documents, to the <i>Employer</i> for acceptance.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>		30%										

	Qualitative Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
2.2	<p>Proof of similar work executed – brake pad backing plates.</p> <p>The <i>Contractor</i> supplies a list of machining and manufacturing work executed, similar to the brake pad backing plates/ brake shoes, as evidence. The submission must include photo evidence.</p> <p>The brake pad backing plate/ brake shoe information can be found in Drawing 18.48/6448 Sheet 3.</p> <p>Acceptable risks, unacceptable risks and acceptable exceptions for this qualitative technical criteria can be found in Section 3.6.1 and 3.6.2.</p>	<p>The <i>Contractor</i> supplies a list of similar manufacturing work done for the <i>Employer</i> (or other companies), as part of the tender returnable documents, to the <i>Employer</i> for acceptance. The submission must include photo evidence.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>		40%
2.3	<p>Capabilities.</p> <p>The <i>Contractor</i> supply a company profile stipulating their capabilities as a company, including photos of the <i>Contractor's</i> workshop to indicate the company's capabilities which is in line with the scope of work.</p> <p>The <i>Employer</i> reserves the right to visit the <i>Contractor's</i> premises (including the premises of possible subcontractors) for evaluating purposes.</p> <p>Acceptable and unacceptable exceptions for this qualitative technical criteria can be found in Section 3.6.2.</p>	<p>The <i>Contractor</i> submit a company profile, including photos of their workshop to indicate their capabilities as a company, as part of the tender returnable documents to the <i>Employer</i> for acceptance.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>		30%
3.	<p>Proof of technical services company.</p> <p>The <i>Contractor</i> provides proof that the Engineering manufacturing and machining, as well as the gluing and doweling is provided by the company internally and not sourced out by a labour broker.</p> <p>Acceptable and unacceptable risks for this qualitative technical criteria can be found in Section 3.6.1.</p> <p>The <i>Employer</i> reserves the right to visit the <i>Contractor's</i> premises (including the premises of possible subcontractors) for evaluating purposes.</p>	<p>The <i>Contractor</i> provides the proof to the <i>Employer</i> for acceptance, as part of the tender returnable documents.</p> <p>Motivation: A labour broker must not be used for this specialized service that is required. The <i>Contractor</i> must provide the technical services themselves.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>	20%	

	Qualitative Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
4.	Quality control plan.		20%	N/A
4.1	Detailed quality control plan The <i>Contractor</i> submits a detailed Quality Control Plan (QCP) as part of the tender returnable documents to the <i>Employer</i> for acceptance. The <i>Employer</i> reserves the right to revise the QCP after purchase order placement. Acceptable and unacceptable risks for this qualitative technical criteria can be found in Section 3.6.1.	The <i>Contractor</i> submits a detailed Quality Control Plan (QCP) as part of the tender returnable documents to the <i>Employer</i> for acceptance. The QCP must include the high level scope as per the Technical Specification & Scope of Work (Document 31A/100361-G): A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i> , without any exceptions, except if an exception is clearly stated.		30%
4.2	Method statement The method statement must include the works as per the Technical Specification and Scope of Work (Document 31A/100361-G). The high level works as described below are included in the Technical Specification & Scope of Work (Document 31A/100361-G): <ul style="list-style-type: none"> The Contractor supplies 4 sets of 10 new steel backing plates, dowels and glues 10 new non-asbestos brake pads (Material: ZA Gold) to the new backing plates. The Contractor delivers the new backing plates with new non-asbestos brake pads doweled and glued to them in a good condition to the Employer's site (Eskom Drakensberg Pumped Storage Scheme). The Contractor repairs all defects. Acceptable risks for this qualitative technical criteria can be found in Section 3.6.1.	The <i>Contractor</i> submits a method statement to the <i>Employer</i> for acceptance as part of the tender returnable documents. A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i> , without any exceptions, except if an exception is clearly stated.		50%

	Qualitative Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
4.3	<p>Intervention points</p> <p>The QCP must include intervention points (including hold and witness points) indicating the quality control planned for this project.</p> <p>A hold point is a predetermined stage beyond which work may not proceed without the attendance of the relevant personnel, as indicated on the QCP. Further work may not be carried out until the inspection or event has been completed and signed off by the relevant personnel, as indicated on the QCP.</p> <p>A witness point is a predetermined stage beyond which work may continue, provided that the relevant personnel, as indicated in the QCP, has been notified in writing of the witness point.</p>	<p>The <i>Contractor</i> submits intervention points (within the QCP) as part of the tender returnable documents to the <i>Employer</i> for acceptance.</p> <p>A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i>, without any exceptions, except if an exception is clearly stated.</p>		20%
			TOTAL: 100	N/A

3.5 TET MEMBER RESPONSIBILITIES

Table 4: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3
1	X	X	X
2	X	X	X
3	X	X	X
Qualitative Criteria Number	TET 1	TET 2	TET 3
1	X	X	X
2	X	X	X
3	X	X	X
4	X	X	X

3.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.6.1 Risks

Table 5: Acceptable Technical Risks

Risk	Description
1.	Refer to qualitative technical criteria number 1 – Brake pad backing plate/ brake shoe material. The risk of a material submitted by the tenderer which is not exactly as requested, but similar to the requested material, will be accepted. The technical/ physical properties of the materials will be used for similarity comparison purposes.
2.	Refer to qualitative technical criteria number 2.1 – Proof of similar services provided – brake pads. The <i>Contractor</i> supplies a list of services provided, similar to supplying of brake pads, as evidence. The similar services provided should cover at least 30% of the specified brake pad size of 480mm x 360mm x 19mm. Therefore, a brake pad size of 144mm x 108mm x 6mm or larger. It will be an acceptable risk if the proof of previous brake pads supplied has sizes of between 30% and 50% of the specified brake pad size requirement.
3.	Refer to qualitative technical criteria number 2.2 – Proof of similar work executed – brake pad backing plates. The <i>Contractor</i> provides photo evidence of similar work executed, similar to the brake pad backing plates, as evidence for the <i>Employer's</i> acceptance.
4.	Refer to qualitative technical criteria number 3 – Proof of technical services company. The <i>Contractor</i> can be a technical services company (with a company profile as evidence for the <i>Employer's</i> acceptance), but sub-contracts the entire scope of work to a technically acceptable company as per the evaluation. A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i> , without any exceptions, except if an exception is clearly stated.
5.	Refer to qualitative technical criteria number 4.1 – Detailed quality control plan. The risk if the <i>Contractor</i> submit a basic QCP (Quality Control Plan) including the high level scope of work as described in qualitative technical criteria 4.2 will be acceptable.
6.	Refer to qualitative technical criteria number 4.2 – Method statement. The risk if the <i>Contractor</i> submit a detailed QCP (Quality Control Plan) including the entire method statement as per the scope of work in the Technical Specification & Scope of Work (Document 31A/100361-G).

Table 6: Unacceptable Technical Risks

Risk	Description
1.	Refer to qualitative technical criteria number 1 – Brake pad backing plate/ brake shoe material. The risk of a material submitted by the tenderer which is not similar or superior to the requested material is unacceptable. The technical/ physical properties of the materials will be used for similarity comparison purposes.
2.	Refer to qualitative technical criteria number 2.1 – Proof of similar services provided – brake pads. The <i>Contractor</i> supplies a list of services provided, similar to supplying of brake pads, as evidence. The similar services provided should cover at least 30% of the specified brake pad size of 480mm x 360mm x 19mm. Therefore, a brake pad size of 144mm x 108mm x 6mm or larger. It will be an unacceptable risk if the proof of previous brake pads supplied has sizes of less than 30% of the specified brake pad size requirement.
3.	Refer to qualitative technical criteria number 2.2 – Proof of similar work executed – brake pad backing plates. The risk of the tenderer submitting proof of work executed which is not similar to the brake pad backing plates is unacceptable.
4.	Refer to qualitative technical criteria number 3 – Proof of technical services company. The <i>Contractor</i> is not a technical services company, but sub-contracts the entire scope of work to a technically acceptable company as per the evaluation. A potential sub-contractor will be scored as per the evaluation criteria stipulated for the <i>Contractor</i> , without any exceptions, except if an exception is clearly stated.
5.	Refer to qualitative technical criteria number 4.1 – Detailed quality control plan The risk if the <i>Contractor</i> submit a QCP (Quality Control Plan) with a complete different scope of work will be unacceptable.

3.6.2 Exceptions / Conditions

Table 7: Acceptable Technical Exceptions / Conditions




Risk	Description
1.	Refer to qualitative technical criteria number 2.2 – Proof of similar work executed – brake pad backing plates. The <i>Contractor</i> supplies a list of machining and manufacturing work executed, similar to the brake pad backing plates, as evidence, without photo evidence of the specific project/s. This exception will be acceptable.
2.	Refer to qualitative technical criteria number 2.3 – Capabilities. It will be an acceptable exception if the tenderer supply a company profile as evidence of their capabilities, which is in line with the scope of work, without sending photos of their workshop.

Table 8: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	Refer to qualitative technical criteria number 2.3 – Capabilities. It will be an unacceptable exception if the tenderer supply photos of their workshop and/or a company profile as evidence of their capabilities, which is not in line with the scope of work.

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation	Signature
Jaco van Zyl	System Engineer – Turbine Engineering	
Edmond Dumema	Senior Engineer – Turbine Engineering	
Isak Meyer	Senior Engineer – Turbine Engineering	

5. REVISIONS

Date	Rev.	Compiler	Remarks
June 2021	1	JH van Zyl	Document registered as official document.

6. DEVELOPMENT TEAM

Edmond Dumema – Senior Engineer – Turbine Engineering

Isak Meyer – Senior Engineer – Turbine Engineering

Jaco van Zyl – System Engineer – Turbine Engineering

7. ACKNOWLEDGEMENTS

N/A

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