

## 1. INTRODUCTION

Lethabo Power Station has 6 x 618MW steam turbines (MAN) in operation which were built between 1985 and 1990. The station suffered several turbine trips because of low control oil pressure during pump change overs. The control oil is used for control and protection purposes on the turbine centreline, IP/LP bypass system and bled steam NRV's. These trips occur when the in-service pump motor is tripped and the standby pump cuts-in but is not capable of restoring the system pressure in time. There is a weekly pump change over PM in place which further increases the probability of having trips. Cut-in tests proved that the standby pumps do cut-in timeous but in some instances the turbines still tripped on low control oil pressure before the standby pumps could recover the system pressure.

The purpose of the project is to eliminate these trips by ensuring the control oil pressure is sustained above the trip value and the IP control valves don't start to close whenever there is a pump changeover. Accumulators are typically used in cases where there's reserve energy required during the changeover of pumps or when there is a sudden increase in demand and the system pressure must be sustained.

## 2. SUPPORTING CLAUSES

### 2.1 SCOPE

The supply, installation and commissioning of the following on each of the six (6) units:

- 1 x Accumulator (56 litre) and associated bracketing and ancillaries for mounting purposes
- 1 x Safety block
- 1 x union coupling to connect safety block to NB32 stainless steel pipe
- 1 x union coupling/banjo fitting to connect safety block to NB15 stainless steel pipe
- 5m x NB32 schedule 40 stainless steel piping (as per the unit specific isometric drawings)
- 4 x 90° NB32 schedule 40 stainless steel bends
- 1 x NB32 schedule 40 stainless steel nozzle/stub
- 6m x NB15 schedule 40 stainless steel piping (as per the unit specific isometric drawings)
- 3 x 90° NB15 schedule 40 stainless steel bends
- 1 x NB15 schedule 40 stainless steel nozzle/stub

## TECHNICAL EVALUATION THRESHOLD

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

## 2.2 MANADATORY TECHNICAL EVALUATION CRITERIA

Table 2: Mandatory Technical Evaluation Criteria

	Mandatory Technical Criteria Description	Reference to Technical Specification / TenderReturnable	Motivation for use of Criteria
1.	The tenderer to provide proof of relevant experience (at least 3 verifiable references)	Section 3.14.1	Mitigation of design integrity risks and to ensuresufficient design experience

## 2.3 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Table 3: Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Criteria Weightin g(%)	Criteria Sub Weighting (%)
1.	Mechanical			100	
	1.1	The Tenderer must provide the accumulator specifications	Section 3.13.1		15
	1.2	The Tenderer must provide the safety block specifications	Section 3.13.2		15

	1.3	<p>The Tenderer must submit a method statement for the following activities</p> <ul style="list-style-type: none"> <li>• Pipework installation</li> <li>• Accumulator installation</li> <li>• Safety block installation</li> <li>• Commissioning and testing</li> </ul>	Section 3.14.2		15
	1.4	The tenderer to confirm and provide evidence that allspares are supported locally and readily available.	Section 3.14.2		15
	1.5	The tenderer to confirm that the relevant PER certificatesand material certificates for the accumulators and safety blocks shall be provided	Section 3.10.2		15
	1.6	The tenderer to provide CV's of the individuals that will beinvolved in the installation and commissioning	Section 3.14.2		10
	1.7	<p>The tenderer to provide the project schedule</p> <ul style="list-style-type: none"> <li>• Lead time on components (from order placed untillarrival onsite)</li> <li>• Installation of components</li> <li>• Commissioning</li> <li>• Testing</li> </ul>	Section 3.14.2		15
				<b>TOTAL: 100</b>	

**Table 4: Qualitative Technical Evaluation Criteria Score Sheet**

					Level of compliance			
	Qualitative Technical Criteria Description		Criteria Weighting (%)	Criteria Sub Weighting (%)	0	2	4	5
<b>2.</b>	Mechanical		<b>100</b>					
	1.1	The Tenderer must provide the accumulators specifications		15	Non-compliant or non-responsive			Compliant
	1.2	The Tenderer must provide the safety blocks specifications		15	Non-compliant or non-responsive			Compliant
	1.3	The Tenderer must submit a method statement for the following activities: <ul style="list-style-type: none"> <li>Pipework installation</li> <li>Accumulator installation</li> <li>Safety block installation</li> <li>Commissioning and testing</li> </ul>		15	Non-responsive	2 points provided	3 points provided	4 points provided
	1.4	The tenderer to confirm and provide evidence that all spares are supported locally and readily available.		15	No confirmation given			Confirmation given
	1.5	The tenderer to confirm that the relevant PER certificates and material certificates for the accumulators and safety blocks shall be provided		15	No confirmation given			Confirmation given

	1.6	The tenderer to provide CV's of the individuals that will be involved in the installation and commissioning		10	Non-compliant or non-responsive			Compliant
	1.7	The tenderer to provide the project schedule		15	Non-responsive	2 points provided	3 points provided	4 points provided
			<b>Total: 100</b>					