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1	Utilities Services	11		21	
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4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	

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	<i>REVISION NO.</i> 02
	Page 2 of 5
Necsa Coal Specification	


Contents

1. PURPOSE	3
2. INTRODUCTION.....	3
3. NECSA's REQUIREMENTS	3
3.1 Physical specifications	3
3.2 Sampling and analytical certificates	4
3.3 Deliveries and Weighing	4
3.4 Waste/unburnt Coal.....	4
4. COAL SPECIFICATION	4
4.1 Specification for coal required	5

REVISIONS

This document has been revised in accordance with the following schedule:

Rev. No.	Date approved	Nature of Revision	Prepared
00	See title page	First Issue	Booyesen DJ
01	See title page	Content revision	Modipane I
02	See title page	Content revision (Section 4.1 indicated Grade C but the boilers require Grade B or minimum Calorific value of 26.5 not 25.5 as per previous revision)	Murovhi A

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	REVISION NO. 02
	Page 3 of 5
Necsa Coal Specification	

1. PURPOSE

This document is the specification of the coal that is required at Necsa for the production of steam.

2. INTRODUCTION

Necsa needs coal to produce steam and for that reason coal must be supplied to following boilers:

- V12 boiler plant situated at Pelindaba East; and
- BH4 boiler plant situated at Pelindaba Beva Site.

These two facilities are situated on the Pelindaba site in the North West province; 25 kilometres west of Pretoria.

3. NECSA's REQUIREMENTS


3.1 Physical specifications

It is important to meet the physical specifications for coal because:

- If coal is too dry, too high temperatures will occur in the boiler which may cause damage;
- Coal dust in the boiler house and surrounding areas;
- If it is too wet, it will block the air passages through the stoker chain belt, which will lead to poor air flow, poor combustion and inefficiency;
- Stack outlet gasses may not comply with environmental requirements;
- Incomplete combustion that can lead to explosions downstream; and
- Increased ash to be disposed (higher removal cost and environmental issues).

If there is too much of nuts in the coal it will lead to:

- Inability for the coal to be on the stoker chain conveyer for enough time to burn; thus unburnt coal (incomplete combustion).
- The water trough of the ash conveyer belt may start to boil because of hot discharged coal pieces; thereby affecting the strength of the ash conveyer belt.
- Large quantities of ash (higher disposal cost and environmental issues); and
- Possible ash conveyer belt dysfunction

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	REVISION NO. 02
Page 4 of 5	
Necsa Coal Specification	

3.2 Sampling and analytical certificates

- Samples must be taken by a competent person, with agreed sampling techniques and equipment to ensure representativeness to the batch or loads delivered.
- Both physical and chemical properties need to be analysed.
- Analyses must be performed by accredited laboratories.
- The sample frequency will be revised by Necsa, depending on the performance of the coal supplied, in Necsa's boilers.
- Should the performance of the coal deem it out of specification, the supplier will sample coal again at Necsa and uplift the coal if it confirmed to be out of specification.

3.3 Deliveries and Weighing


- Supply weigh bridge certificates with the applicable batch or load numbers that can be traced/linked to the analytical certificates;
- Trucks must be weighed upon arrival and after delivery at Necsa;
- Delivery should take place from Monday to Friday between 8h00 to 14h30, unless if arranged in advance;
- Full delivery must be effected by the supplier within a week after an order/request has been placed by Necsa.
- Delivery shall take place in accordance with a program and schedule which Necsa shall determine in consultation with the supplier to ensure continuous delivery.

3.4 Waste/unburnt Coal

If there is a problem with the quality of the coal delivered, then the supplier will be held responsible for the cost to remove unburnt coal or excess waste from site as well as the estimated loss in production cost as determined by Necsa.

4. COAL SPECIFICATION

The boilers are designed to burn coal Peas. As far as the chemical properties are concerned the boilers are designed for Grade B. Therefore Grade A or B of coal must be supplied to Necsa consistently in accordance with the following Grade B specification and in such quantities and quality as Necsa requires.

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	REVISION NO. 02
	Page 5 of 5
Necsa Coal Specification	

4.1 Specification for coal required

Below is the specification as required.

Grade A/B Coal	Peas: Pelindaba East & Beva	Necsa Specification
		Required Analysis
Inherent moisture	Max	3.00%
Total moisture	Max	4.00%
Ash content	Max	18.00%
Volatile matter	Min	23.00%
Fixed carbon	Min	58.00%
Gross Calorific Value	Min	26.5 MJ/kg
Phosphorus	Max	0.01%
Sulphur	Max	0.20%
Ash fusion temperature	Min	1400 °C
SIZE GRADING		
<25mm	Max	3.50%
25mm to + 12mm	Min	86.00%
12mm to + 6mm	Min	6.00%
6mm to + 3mm	Max	4.00%
3mm	Max	0.50%
Current Consumption	Average	500 ton /month
	Minimum	300 ton /month
	Maximum	900 ton /month

NB: All prices shall be exclusive of VAT and inclusive of transport costs & toll fees.