



Generation

Gert Sibande District Municipality
Corner of Joubert & Oosthuise Streets
Ermelo
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AND

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GROOTVLEI POWER STATION

Atmospheric Emission License GPS/0015/2015/F02

BOILER ENGINEERING MANAGER

2024/01/04

DATE

ENGINEERING MANAGER

04/01/2024

DATE

ENVIRONMENTAL MANAGER

2024/01/04

DATE

GROOTVLEI POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License GPS/0015/2015/F02



1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption	Consumption Rate Dec-2023
	Coal	Tons	650 000	19 627.0
Fuel Oil	Tons	20 000	419.05	
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Indicative Production Rate Dec-2023
	Energy	GWh	833.28	30.27
	Ash	Tons	300 000	5 007
	RE PM	kg/MWh	not specified	0.13

Note: Maximum energy production is calculated as: $(190\text{MW} \times 4 \text{ Units} + 180\text{MW} \times 2 \text{ Units}) \times 24\text{hrs} \times \text{Days in month} / 1000 = \text{GWh}$.

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	18-24	20.13
Sulphur Content	%	0.6 to < 1.2	0.59
Ash Content	%	27 to < 32	25.51

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO
North	100	3500	1100
South	50	3500	1100

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	100.000%
Unit 3	Fabric Filter Plant (FFP)	100.000%
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	Unit Off-line
Unit 6	Fabric Filter Plant (FFP)	Unit Off-line

Note: Abatement plant does not have bypass mode operation, hence plant 100% Utilised.

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
North	100.0	0.0	0.0	0.0
South				

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO₂

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of December-2023

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	0.00	0.0	0.0
Unit 2	0.09	128.9	55.0
Unit 3	3.76	135.5	57.9
Unit 4	0.00	0.0	0.0
Unit 5	0.00	0.0	0.0
Unit 6	0.00	0.0	0.0
SUM	3.85	264.4	112.9

Table 6.2: Operating days in compliance to PM AEL Limit - December 2023

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average PM (mg/Nm ³)
North	8	0	0	0	23.0
South	0	0	0	0	
SUM	8	0	0	0	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - December 2023





Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average SO ₂ (mg/Nm ³)
North	9	0	0	0	1 608.1
South	0	0	0	0	
SUM	9	0	0	0	

Table 6.4: Operating days in compliance to NO_x AEL Limit - December 2023

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average NO _x (mg/Nm ³)
North	9	0	0	0	686.7
South	0	0	0	0	
SUM	9	0	0	0	

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

Table 6.5: Legend Description

Condition	Colour	Description
Normal		Emissions below Emission Limit Value (ELV)
Grace		Emissions above the ELV during grace period
Section 30		Emissions above ELV during a NEMA S30 incident
Contravention		

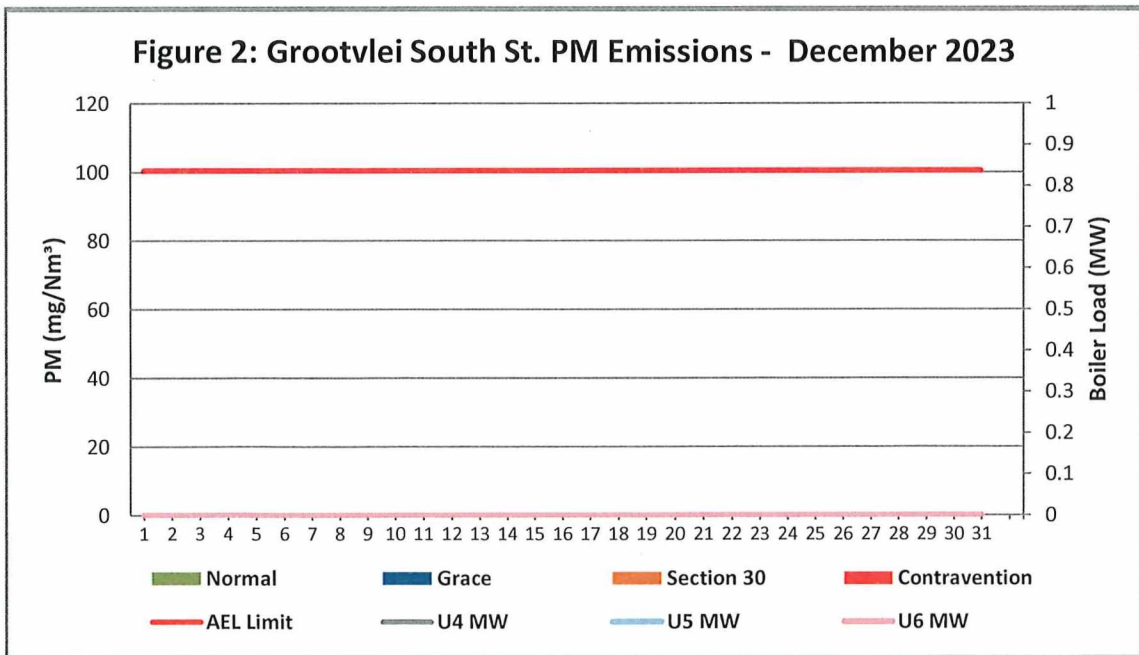
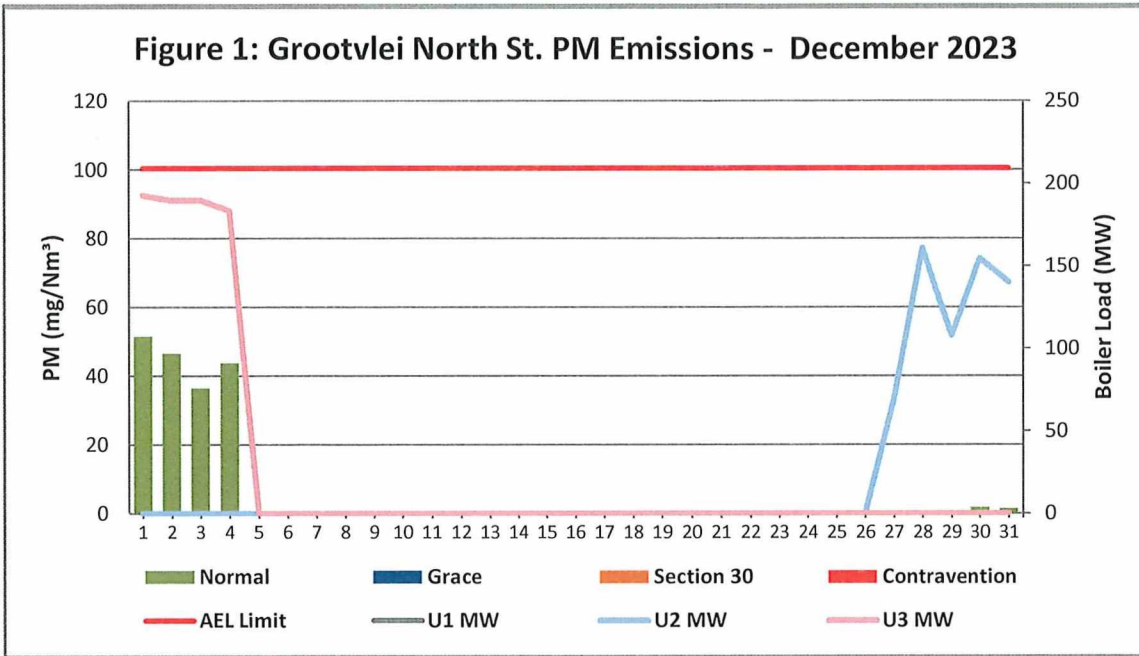


Figure 3: Grootvlei North St. SO₂ Emissions - December 2023

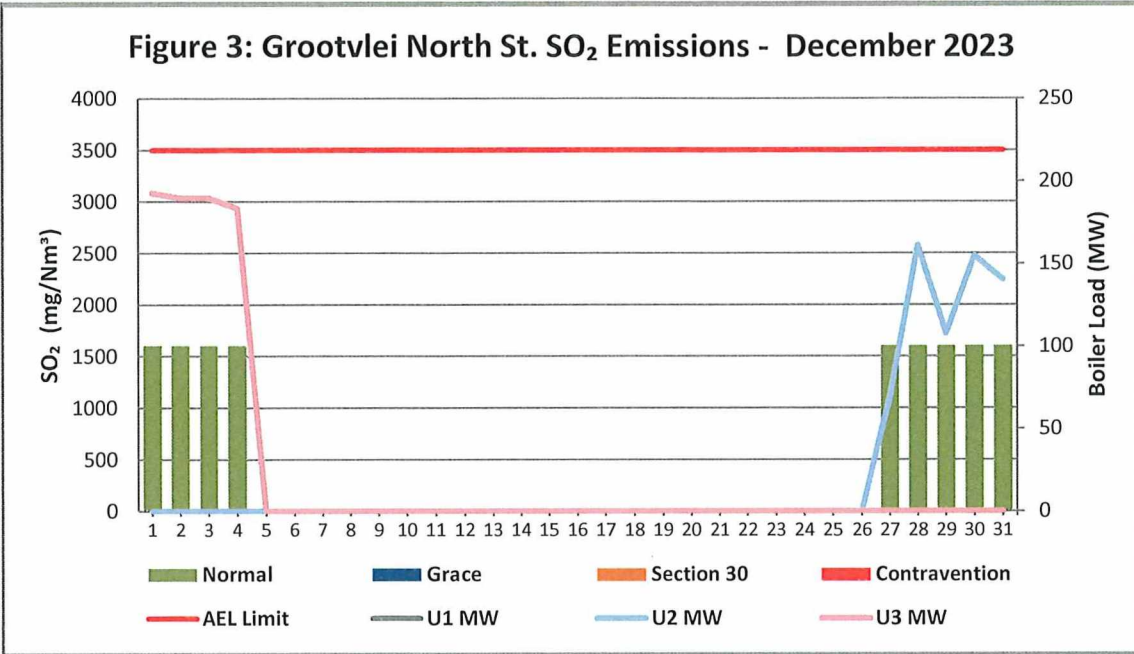


Figure 4: Grootvlei South St. SO₂ Emissions - December 2023

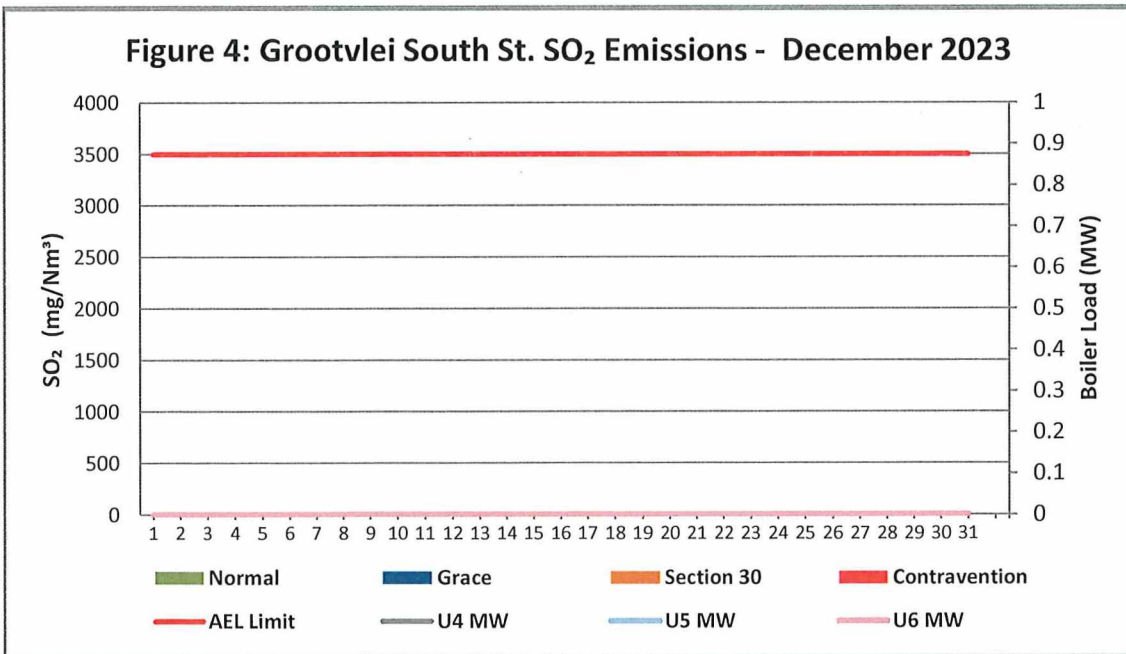


Figure 5: Grootvlei North St. NOx Emissions - December 2023

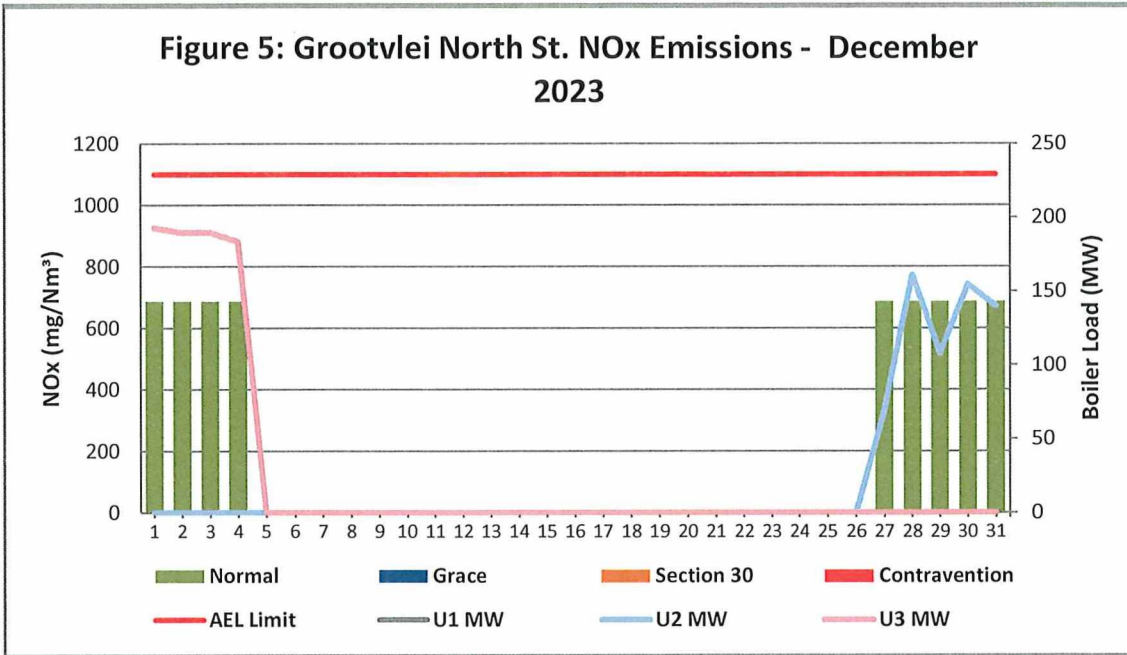
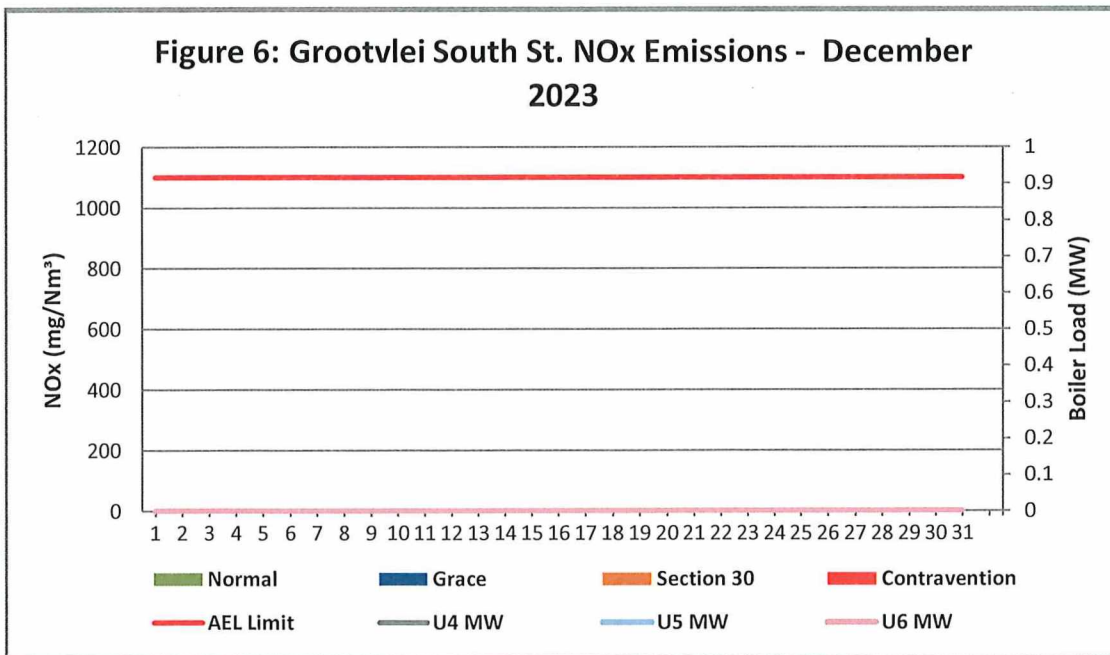


Figure 6: Grootvlei South St. NOx Emissions - December 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of December-2023

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>Unit 3</i>		<i>no event</i>		<i>Unit 2</i>		<i>no event</i>	
Breaker Open (BO)	<i>10:50 pm</i>	<i>2023/12/04</i>			<i>11:50 pm</i>	<i>2023/12/31</i>		
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>			<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>		
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:M M		DD:HH:M M		DD:HH:M M		DD:HH:MM

North Stack ...Cont.	<i>Event 5</i>		<i>Event 6</i>		<i>Event 7</i>		<i>Event 8</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:M M		DD:HH:M M		DD:HH:M M		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:M M		DD:HH:M M		DD:HH:M M		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:M M		DD:HH:M M		DD:HH:M M		DD:HH:MM

South Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:M M		DD:HH:M M		DD:HH:M M		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM M		DD:HH:MM M		DD:HH:MM M		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:M M		DD:HH:M M		DD:HH:M M		DD:HH:MM

South Stack ...Cont.	<i>Event 5</i>		<i>Event 6</i>		<i>Event 7</i>		<i>Event 8</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:M M		DD:HH:M M		DD:HH:M M		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM M		DD:HH:MM M		DD:HH:MM M		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:M M		DD:HH:M M		DD:HH:M M		DD:HH:MM

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of December-2023 in mg/Nm³

[Include reference to once off test showing typical emissions rates during fires in and SD]



ADDENDUM TO MONTHLY EMISSIONS REPORT

8 EMERGENCY GENERATION

Emergency Generation *[This is only required for stations that are requested to report on this information]*

Table 8. Emergency Generation per unit for the month of December-2023

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control						
Emergency Hours declared including hours after stand down						
Hours over the Limit during Emergency Generation						

9 COMPLAINTS REGISTER

Table 9. Complaints for the month of December-2023

Source Code / Name	Root Cause Analysis	Calculation of Impacts / emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent recurrence	Date measure will be implemented
<i>(Insert name of affected person/source)</i>	<i>(Insert root cause for incident)</i>	<i>(Insert emissions associated with incident)</i>	<i>(Insert dispersion model information where applicable)</i>	<i>(Insert mitigation measures taken)</i>	<i>(Insert date of implementation of mitigation method)</i>

10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

To be completed in the case of a S30 incident or a legal contravention:


Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	Date S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledgment	Date DEA Acceptable	Comments / Reference No.

11 General

South Stack off. The dust probe lacks correlation due to units unavailability. For gaseous reporting surrogate values are utilized. Parallel testing is suspended due to the unavailability of a units. The service provider is currently troubleshooting the gas analyzer, which has lost its signals.

 2024/01/04
Environmental Department Date

 2024/01/04
Boiler Engineering Date

 2024/01/04
General Manager Date

Compiled by: Boiler Engineering Department

FFP System Engineer

For: Department of Environmental Affairs and Touri: Chief Air Pollution Control Officer

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Group Technology Engineering

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Grootvlie Power Station:

Engineering Manager
Operating Manager
Maintenance Manager
Unit Production Manager
Boiler Engineering Manager
System Engineer
Environmental Officer
Performance and Test
Production Manager