



Generation

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Date: 2023/07/27

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MATLA POWER STATION

Atmospheric Emission License 17/4/AEL/MP312/11/14



BOILER ENGINEERING MANAGER


ENVIRONMENTAL MANAGER


ENGINEERING MANAGER

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MATLA POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License 17/4/AEL/MP312/11/14



1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max Permitted Consumption Rate	Consumption Rate Jun-2023
	Coal	Tons	1 475 000	878 249
	Fuel Oil	Tons	3 500	574
Production Rates	Product / By-Product Name	Units	Max Production Capacity Permitted	Production Rate Jun-2023
	Energy	GWh	2 657	1 338
	Ash	Tons	471 000	242 572
	RE PM	kg/MWh	not specified	4.319

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.8-1.1	1.00
Ash Content	%	21-40	27.62

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO
South	200	3500	1200
Unit 4	200	3500	1200
Unit 5	100	3500	1200
Unit 6	100	3500	1200

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

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jun-2023
South	<i>Electro Static Precipators (ESP)</i>	<i>98.205%</i>
Unit 4	<i>Electro Static Precipators (ESP)</i>	<i>99.131%</i>
Unit 5	<i>Electro Static Precipators (ESP)</i>	<i>94.890%</i>
Unit 6	<i>Electro Static Precipators (ESP)</i>	<i>95.596%</i>

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

5 DATA RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
South	<i>27.1</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Unit 4	<i>84.6</i>	<i>98.9</i>	<i>98.9</i>	<i>98.9</i>
Unit 5	<i>18.8</i>	<i>99.6</i>	<i>99.8</i>	<i>100.0</i>
Unit 6	<i>27.8</i>	<i>78.3</i>	<i>98.2</i>	<i>100.0</i>

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM	SOx	NOx
Unit 1	590.4	2 653.3	636.3
Unit 2	746.1	3 501.8	839.7
Unit 3	564.9	2 618.0	627.8
Unit 4	326.0	1 972.4	525.0
Unit 5	1 823.2	2 322.4	952.1
Unit 6	1 727.4	2 983.4	1 003.9
SUM	5 777.9	16 051.4	4 584.8

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
South	0	0	0	30	30	539.0
Unit 4	9	5	0	6	11	341.0
Unit 5	0	0	0	28	28	1 548.5
Unit 6	0	0	0	30	30	1 230.1
SUM	9	5	0	94	99	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
South	30	0	0	0	0	2 422.6
Unit 4	21	0	0	0	0	1 893.5
Unit 5	28	0	0	0	0	1 976.2
Unit 6	30	0	0	0	0	2 128.3
SUM	109	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
South	30	0	0	0	0	580.9
Unit 4	21	0	0	0	0	504.0
Unit 5	28	0	0	0	0	800.6
Unit 6	30	0	0	0	0	701.5
SUM	109	0	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		Emissions above ELV but outside grace or S30 incident conditions

Figure 1: Matla South Stack PM Emissions - June 2023

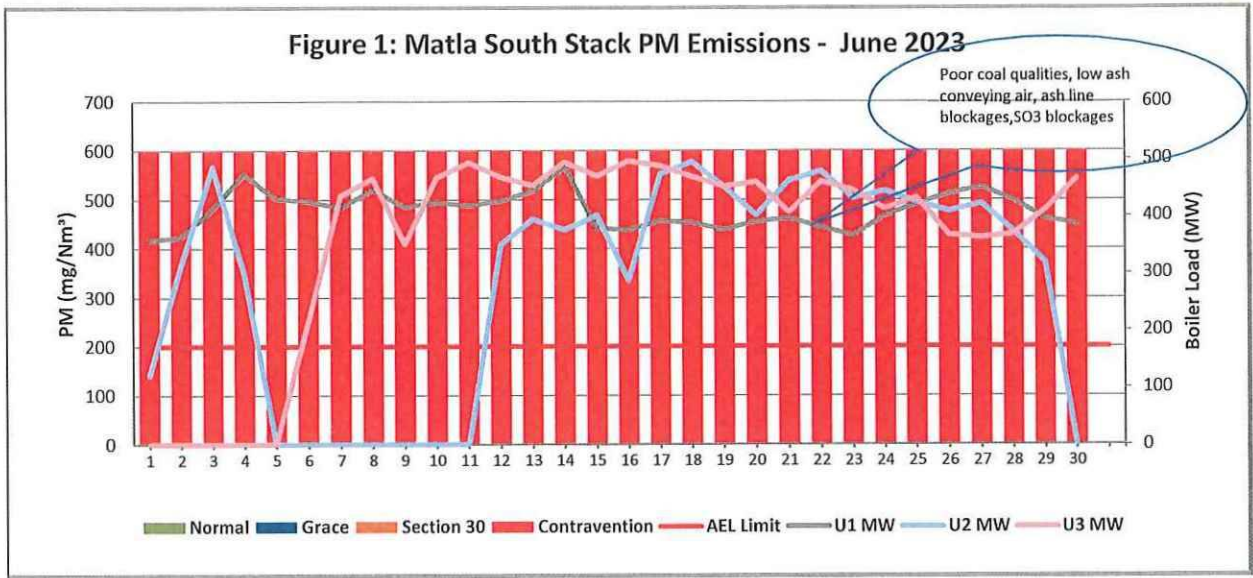


Figure 2: Matla Unit 4 PM Emissions - June 2023

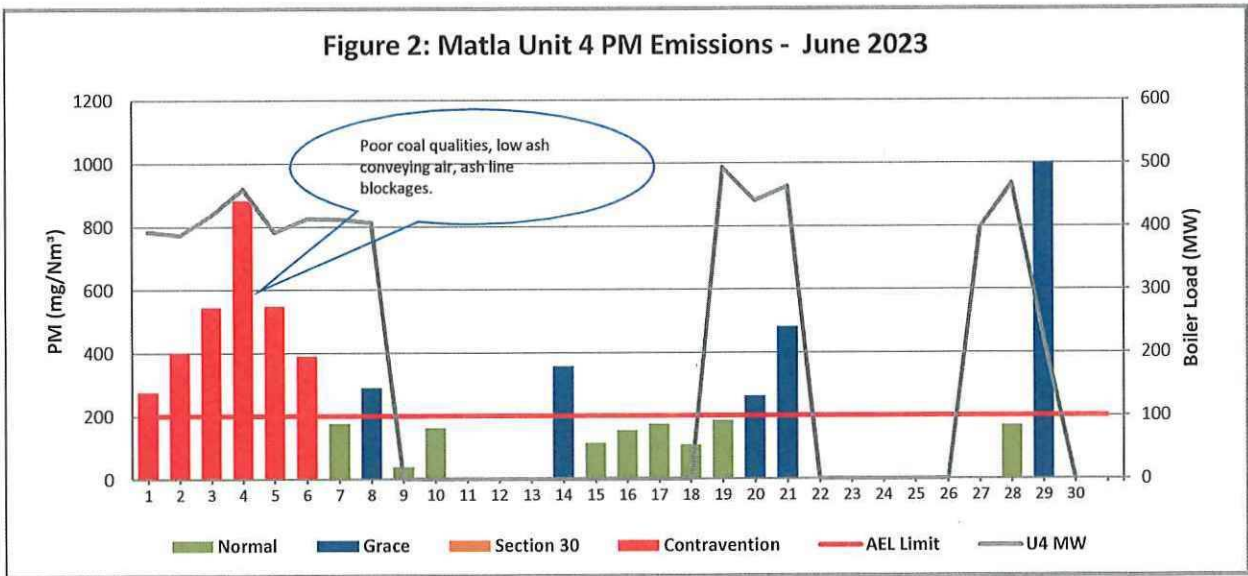


Figure 3: Matla Unit 5 PM Emissions - June 2023

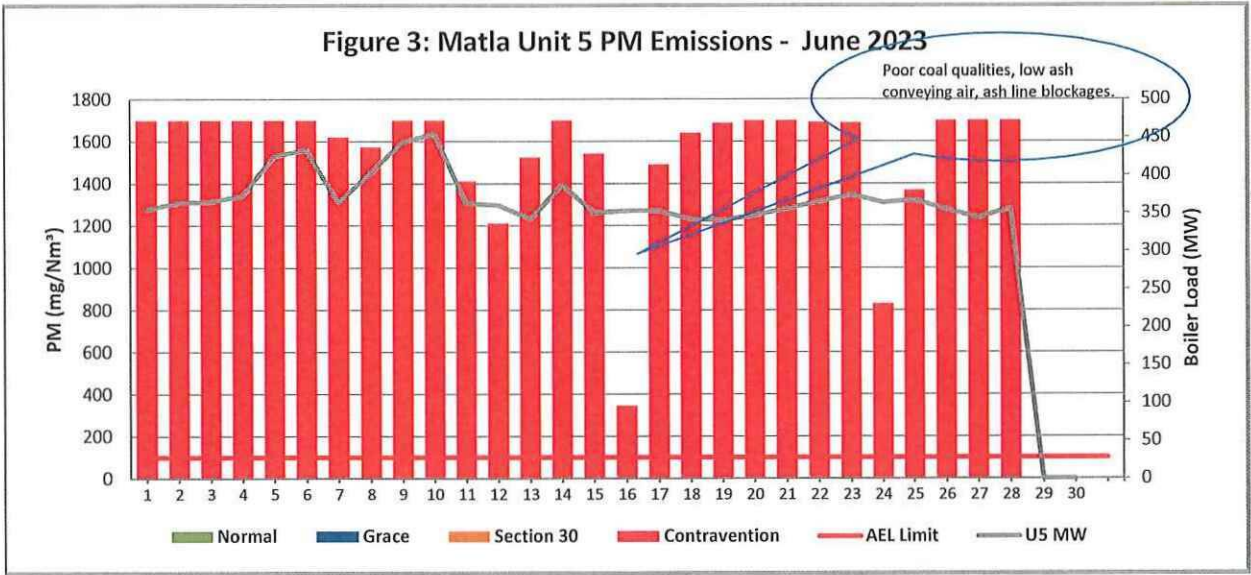


Figure 4: Matla Unit 6 PM Emissions - June 2023

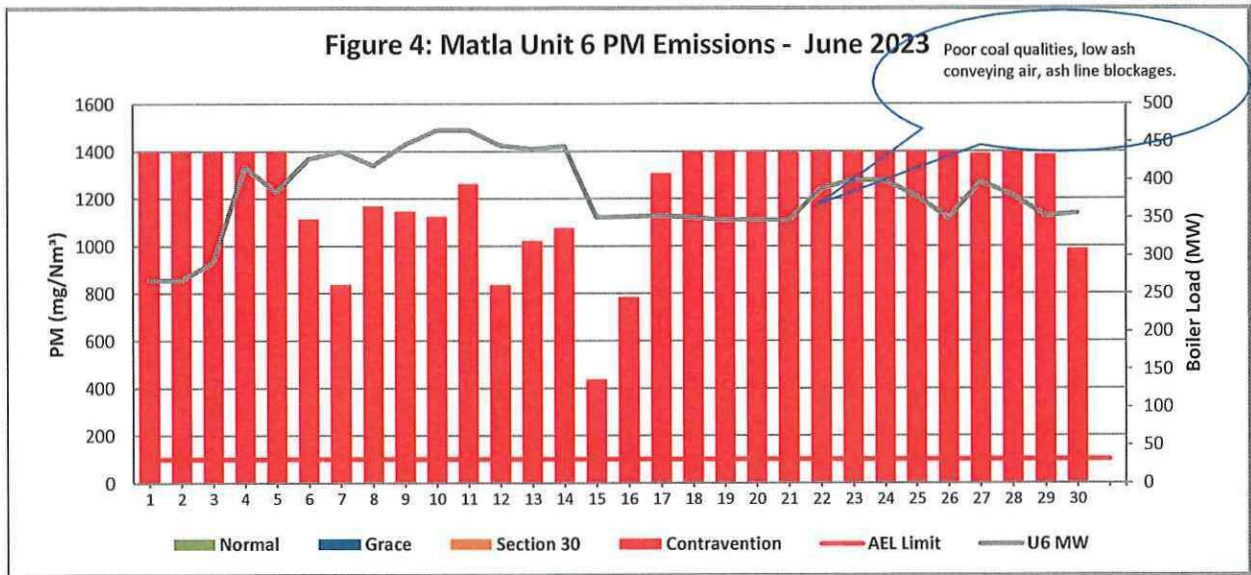


Figure 5: Matla South Stack SO₂ Emissions - June 2023

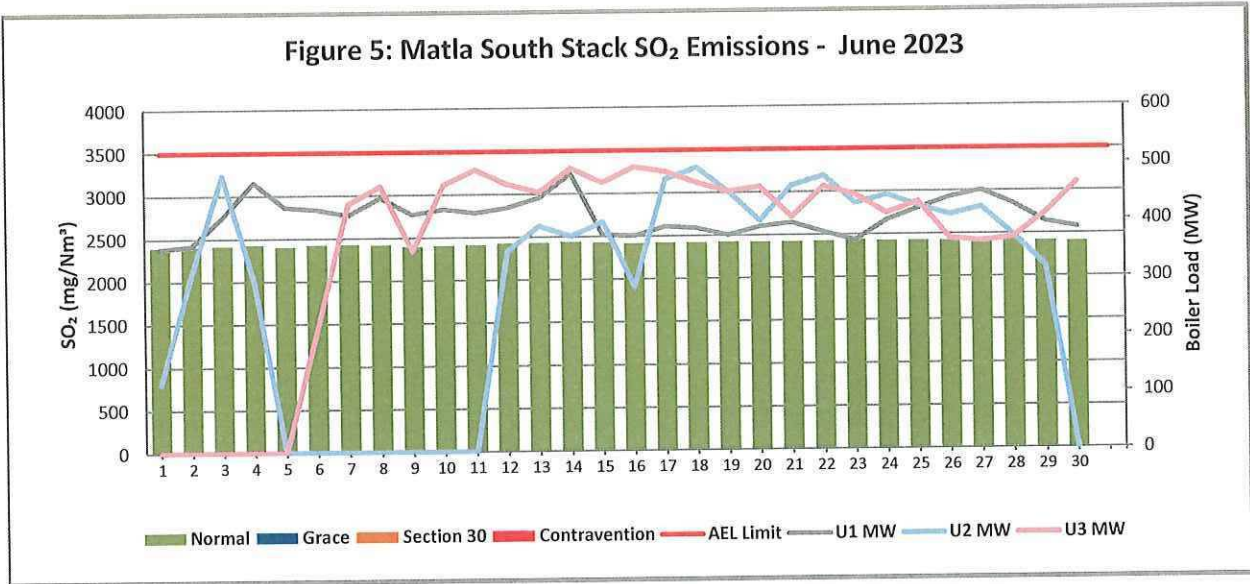


Figure 6: Matla Unit 4 SO₂ Emissions - June 2023

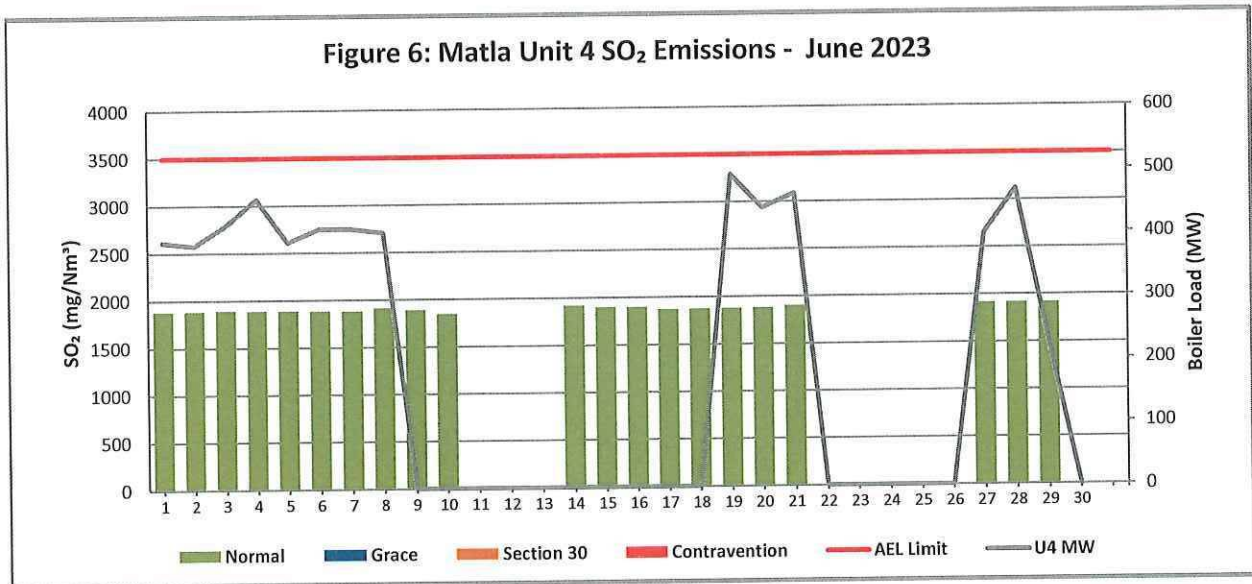


Figure 7: Matla Unit 5 SO₂ Emissions - June 2023

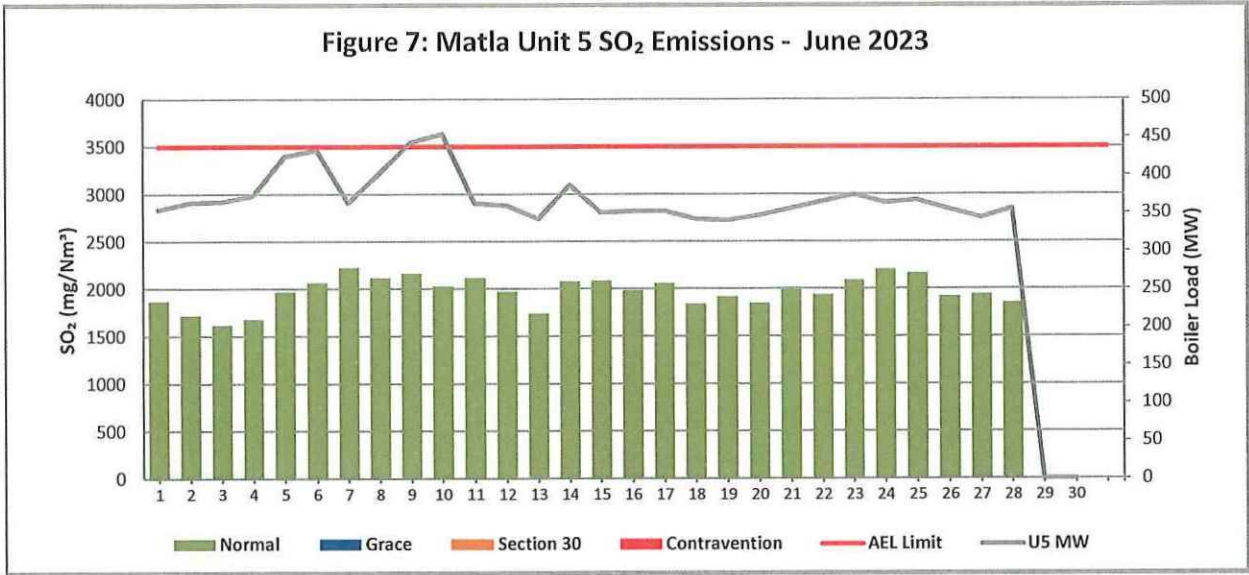


Figure 8: Matla Unit 6 SO₂ Emissions - June 2023

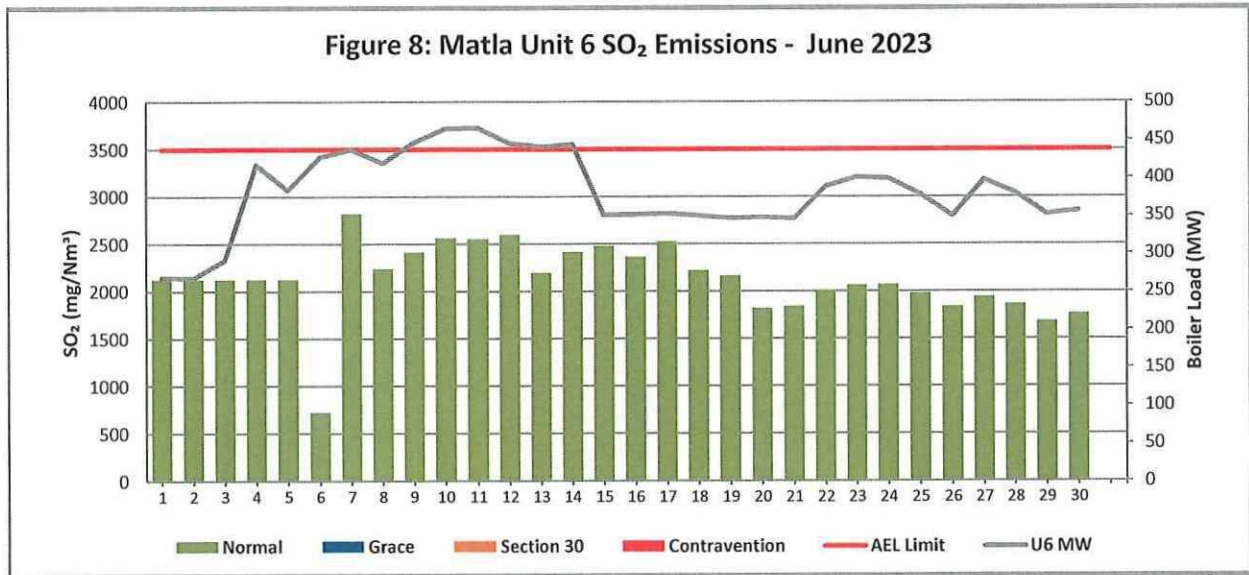


Figure 9: Matla South Stack NOx Emissions - June 2023

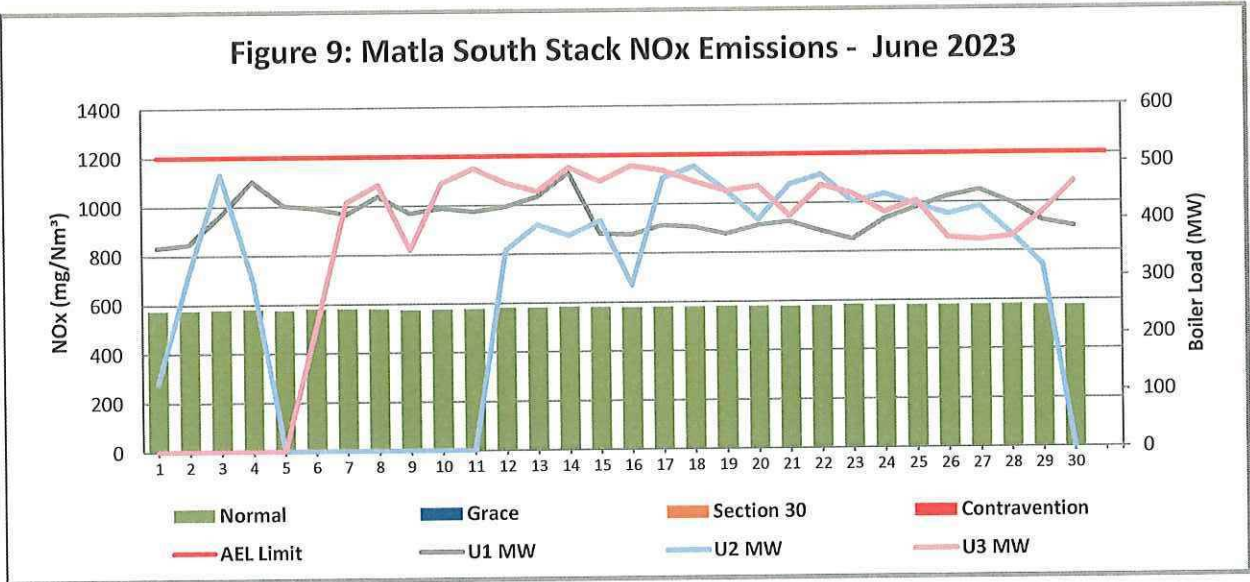


Figure 10: Matla Unit 4 NOx Emissions - June 2023

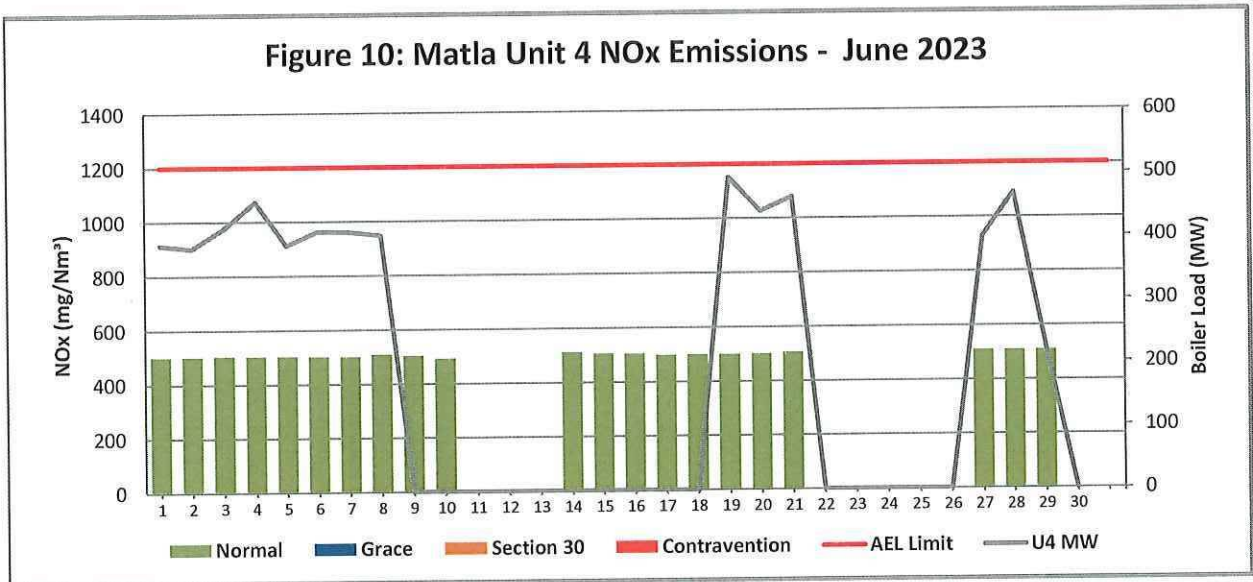


Figure 11: Matla Unit 5 NOx Emissions - June 2023

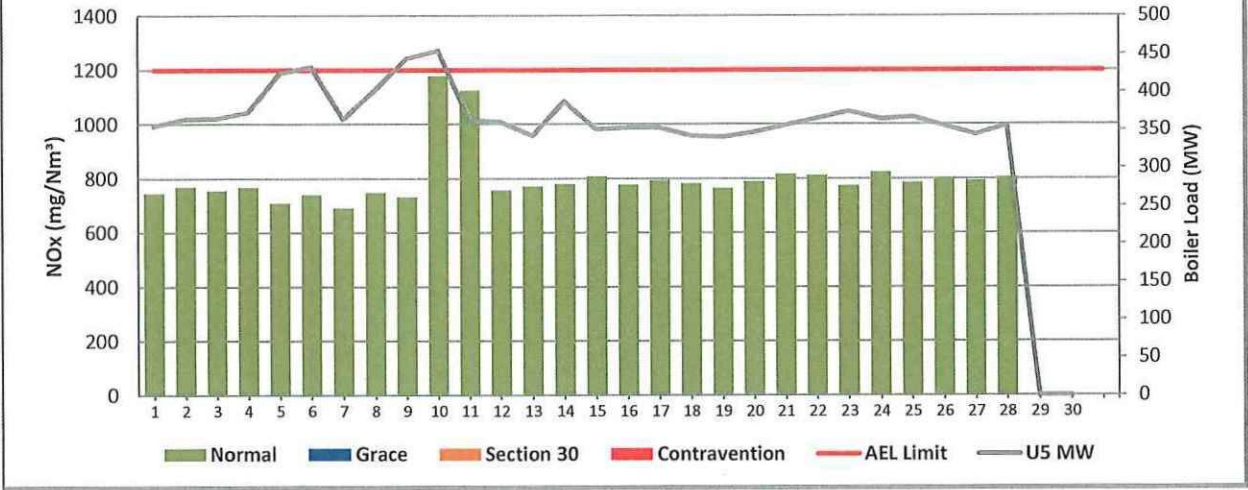
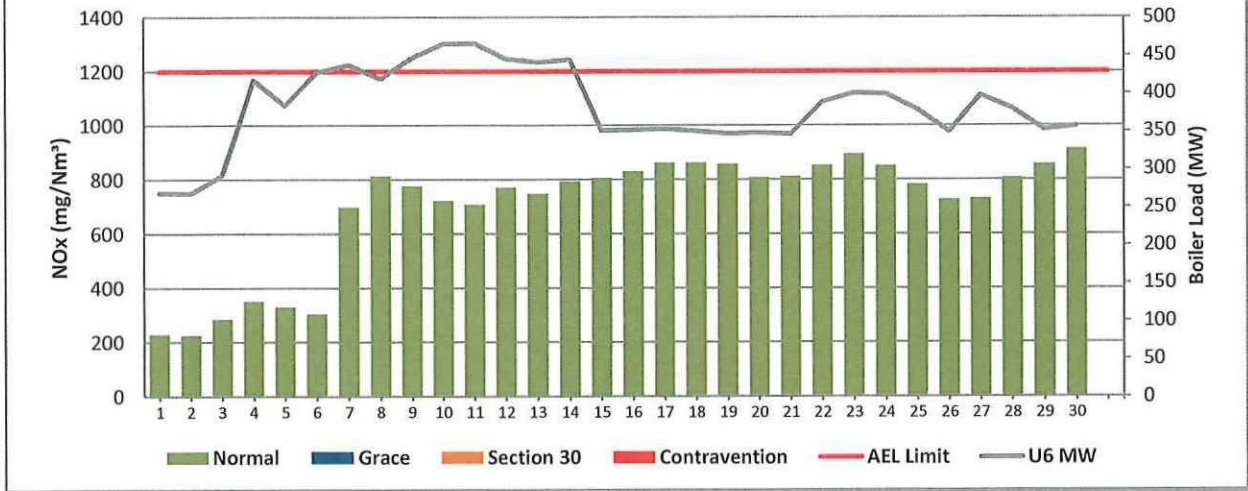


Figure 12: Matla Unit 6 NOx Emissions - June 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

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)			2:30 PM	2023/06/04	8:50 PM	2023/06/29		
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)		DD:HH:MM	<i>n/a</i>	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:MM		DD:HH:MM		DD:HH:MM		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:MM		DD:HH:MM		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:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No. 4	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		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:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No. 5	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	5:55 PM	2023/06/06	2:00 PM	2023/06/28				
Draught Group (DG) Shut Down (SD)	5:55 PM	2023/06/06	8:10 AM	2023/06/30				
BO to DG SD (duration)	00:00:00	DD:HH:MM	01:18:10	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	5:55 PM	2023/06/06						
Synch. to Grid (or BC)	3:55 AM	2023/06/07						
Fires in to BC (duration)	00:09:59	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit						
Emissions below limit from BC (duration)	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM


Unit No. 6	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		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:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

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

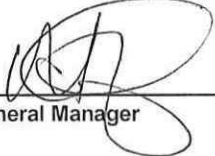
[Include reference to once off test showing typical emissions rates during fires in and SD]

11 General

PM reliability on South stack, unit 5, and unit 6 below 80% due emissions at maximum.
Unit 4 servers malfunctioned and data lost. some values on load are manual inputs and preliminary values that may be updated.
Unit 6 PM curve expired and postponed to August due to plant breakdown.
Gases are reported using QAL 2 averages.
South stack and unit 6 QAL 2 curves expired. South stack gas monitor faulty and repairs in progress.
Unit 6 testing completed and awaiting for a report to be issued on the 10 August 2023


27-07-2023
Boiler Engineering Date


27/07/2023
Environmental Department Date


28/07/2023
General Manager Date

Compiled by: Boiler Engineering Department

ESP & SO₃ System Engineer

For: Department of Environmental Affairs and Tourism

Chief Air Pollution Control Officer

Copies: Eskom Environmental Management

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B Mccourt

Group Technology Engineering

R Rampiar
E. Patel

Matla Power Station:

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