



Generation

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Date: 2023/10/31

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MATLA POWER STATION

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

p-p

BOILER ENGINEERING MANAGER

31/10/2023

DATE

ENVIRONMENTAL MANAGER

31/10/2023

DATE

ENGINEERING MANAGER

31/10/2023

DATE

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 Sep-2023
	Coal	Tons	1 475 000	646 265
	Fuel Oil	Tons	3 500	2 562
Production Rates	Product / By-Product Name	Units	Max Production Capacity Permitted	Production Rate Sep-2023
	Energy	GWh	2 657	1 096
	Ash	Tons	471 000	188 322
	RE PM	kg/MWh	not specified	1.147

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.8-1.1	1.00
Ash Content	%	21-40	29.14

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 Sep-2023
South	<i>Electro Static Precipators (ESP)</i>	<i>99.279%</i>
Unit 4	<i>Electro Static Precipators (ESP)</i>	<i>98.980%</i>
Unit 5	<i>Electro Static Precipators (ESP)</i>	<i>99.440%</i>
Unit 6	<i>Electro Static Precipators (ESP)</i>	<i>99.384%</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>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Unit 4	<i>89.5</i>	<i>99.5</i>	<i>99.5</i>	<i>99.5</i>
Unit 5	<i>99.7</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Unit 6	<i>72.3</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM	SOx	NOx
Unit 1	92.3	1 322.4	317.1
Unit 2	297.9	3 027.6	726.0
Unit 3	204.9	2 511.7	602.3
Unit 4	347.4	3 079.3	1 095.1
Unit 5	117.8	1 212.1	426.8
Unit 6	196.6	2 341.6	644.7
SUM	1 256.9	13 494.6	3 812.0

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
South	15	4	0	8	12	194.0
Unit 4	14	6	0	5	11	271.7
Unit 5	4	5	0	4	9	205.0
Unit 6	15	6	0	3	9	311.4
SUM	48	21	0	20	41	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
South	28	0	0	0	0	2 407.1
Unit 4	26	0	0	0	0	2 309.8
Unit 5	14	0	0	0	0	2 015.3
Unit 6	26	0	0	0	0	2 402.2
SUM	94	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
South	28	0	0	0	0	577.2
Unit 4	26	0	0	0	0	821.5
Unit 5	16	0	0	0	0	765.1
Unit 6	26	0	0	0	0	661.4
SUM	96	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 - September 2023

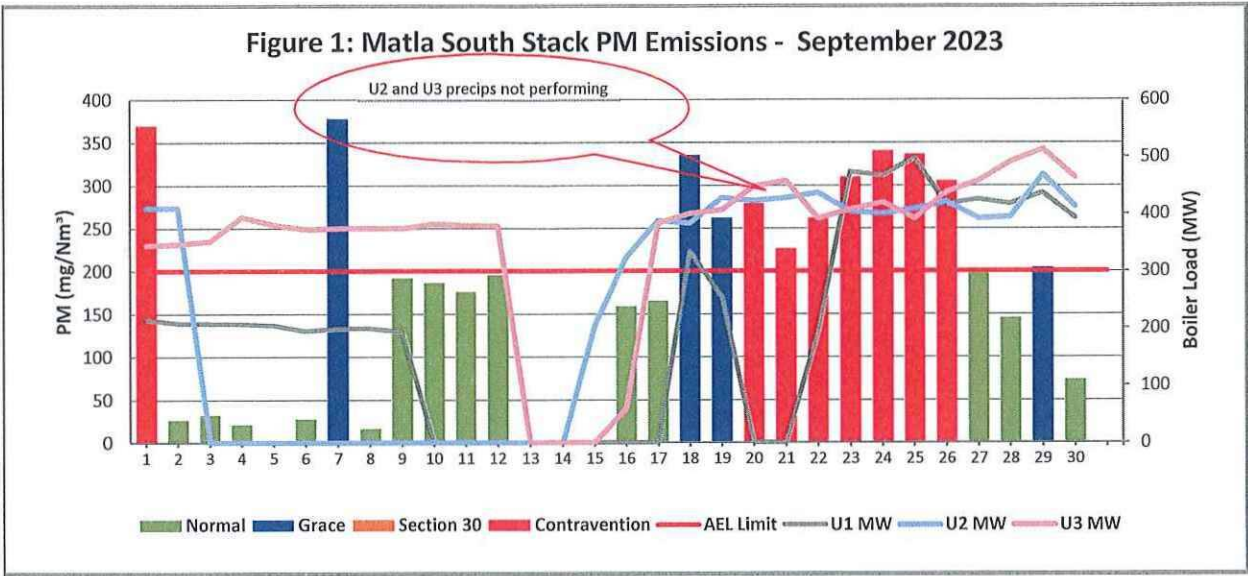


Figure 2: Matla Unit 4 PM Emissions - September 2023

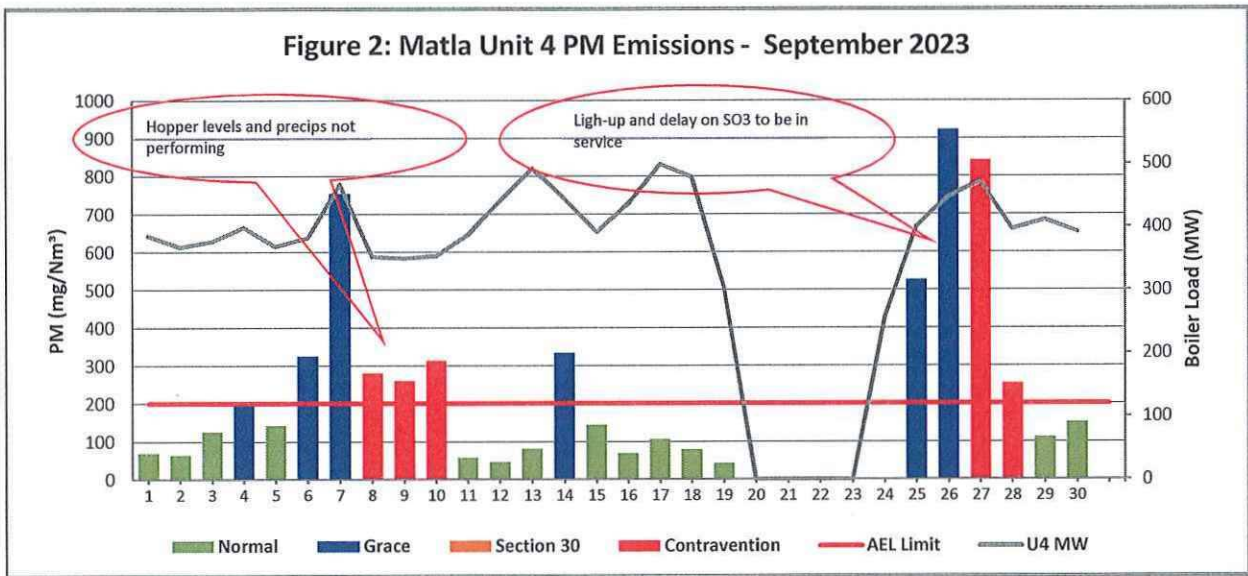


Figure 3: Matla Unit 5 PM Emissions - September 2023

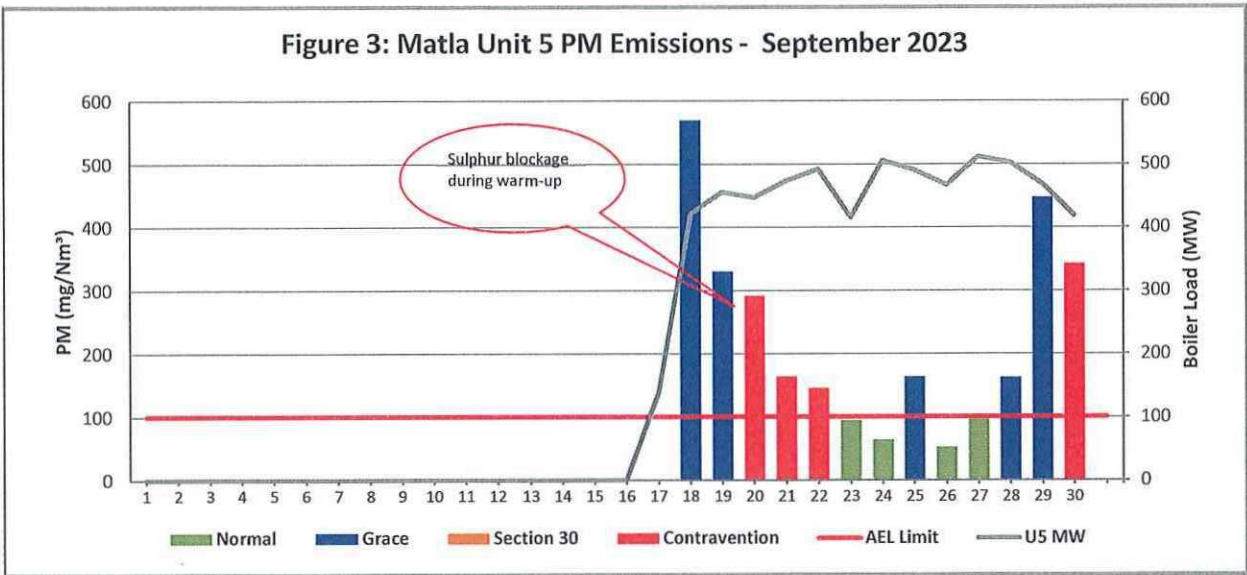


Figure 4: Matla Unit 6 PM Emissions - September 2023

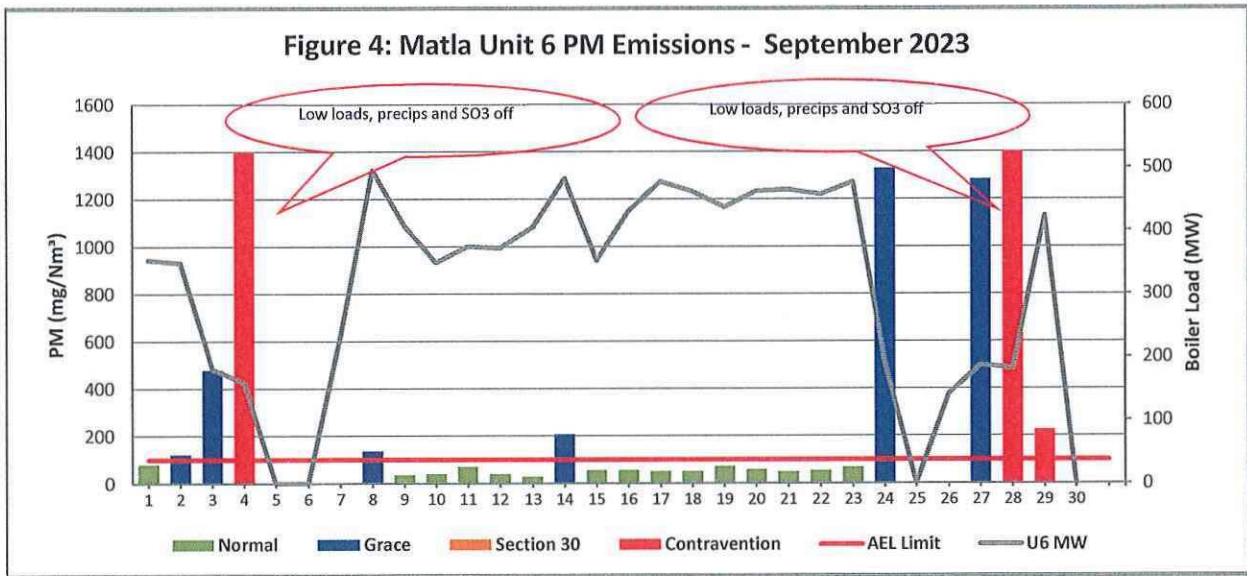


Figure 5: Matla South Stack SO₂ Emissions - September 2023

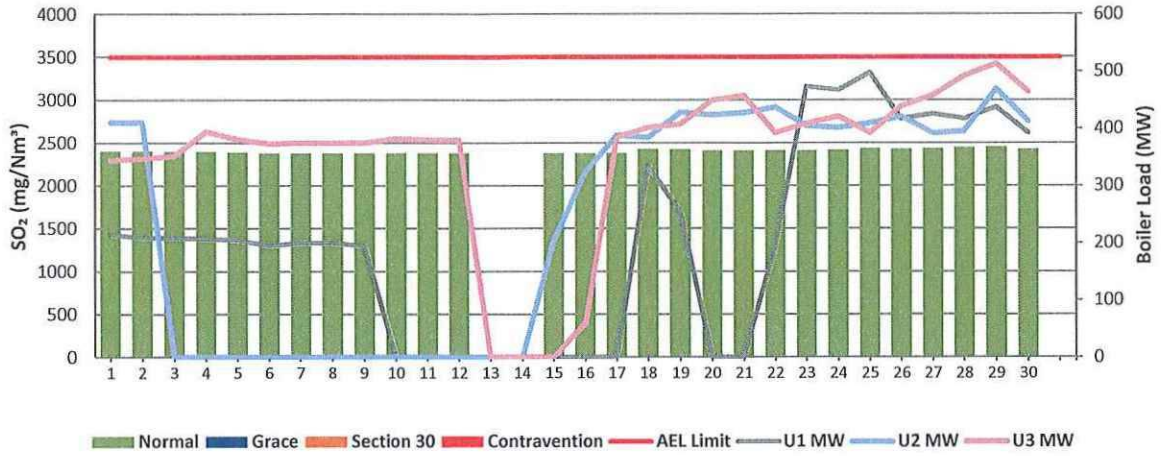


Figure 6: Matla Unit 4 SO₂ Emissions - September 2023

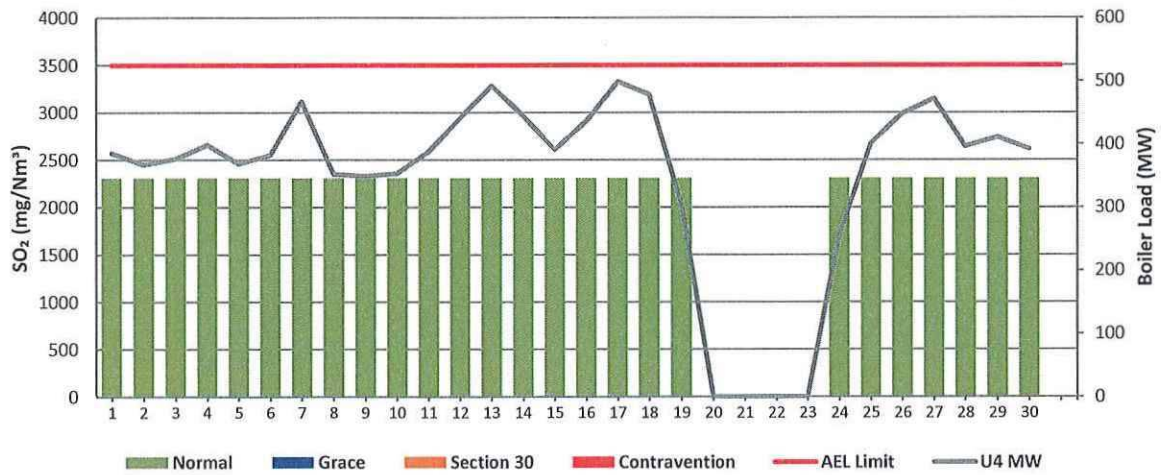


Figure 7: Matla Unit 5 SO₂ Emissions - September 2023

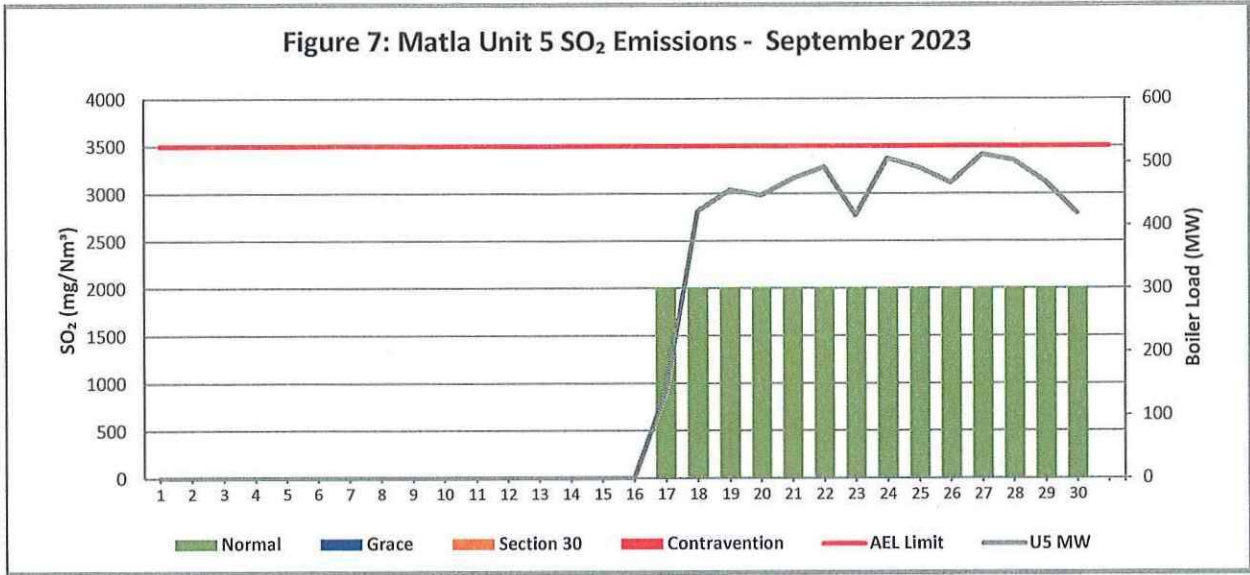


Figure 8: Matla Unit 6 SO₂ Emissions - September 2023

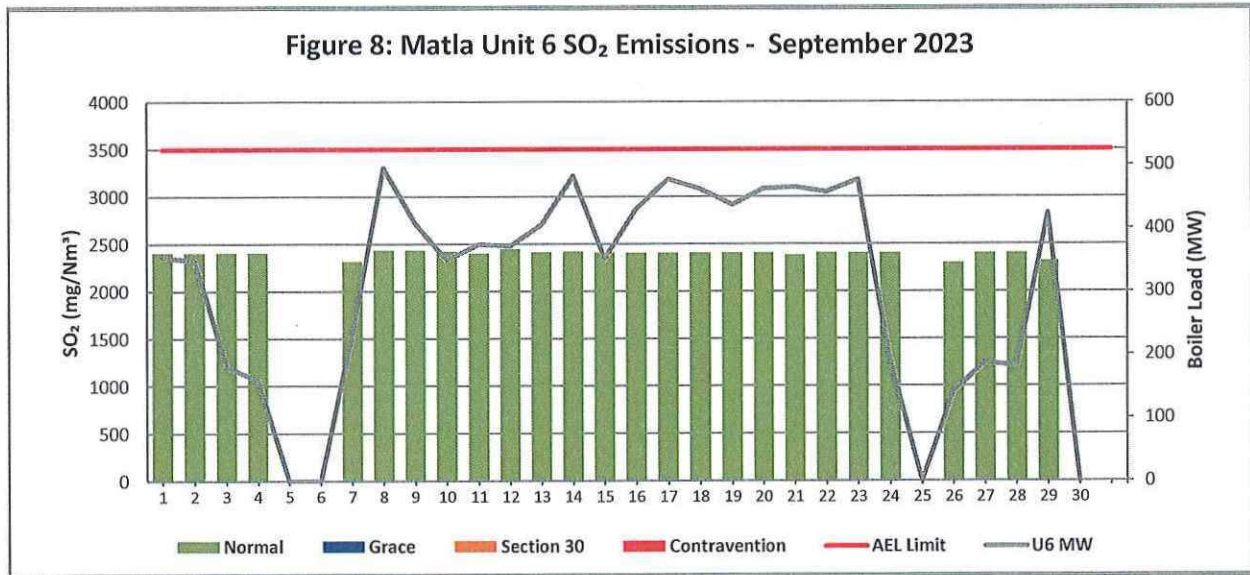


Figure 9: Matla South Stack NOx Emissions - September 2023

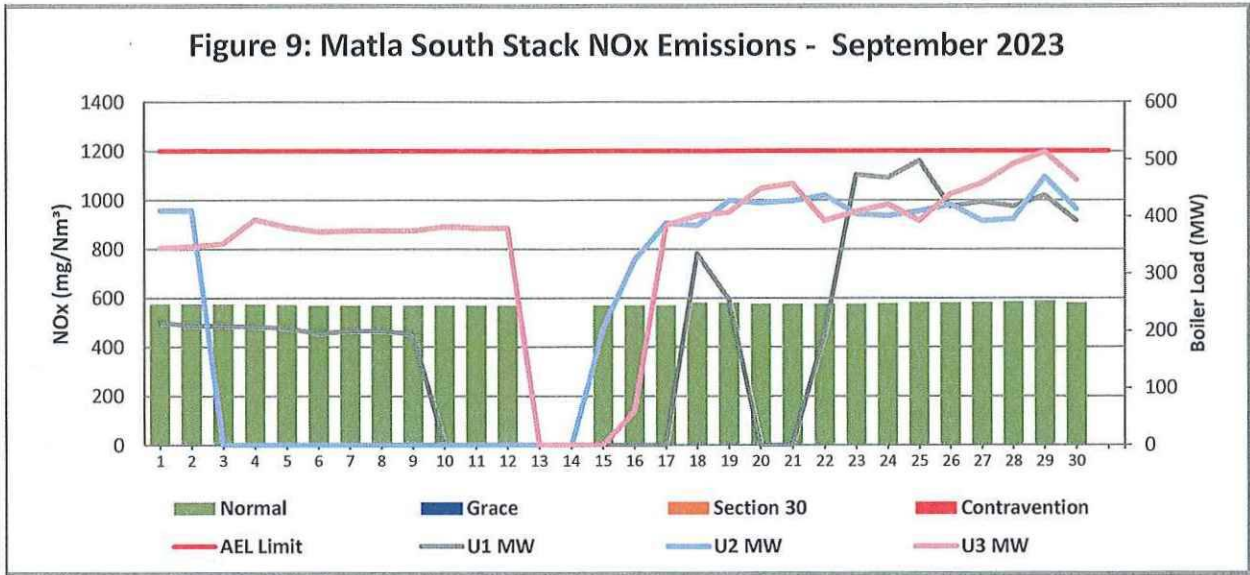


Figure 10: Matla Unit 4 NOx Emissions - September 2023

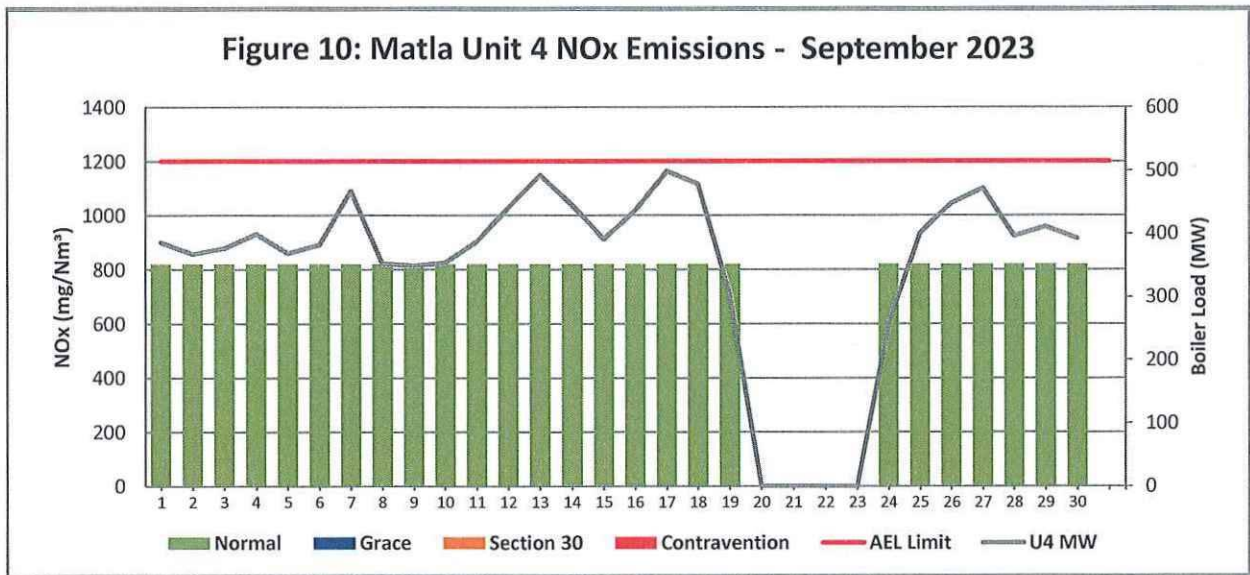


Figure 11: Matla Unit 5 NOx Emissions - September 2023

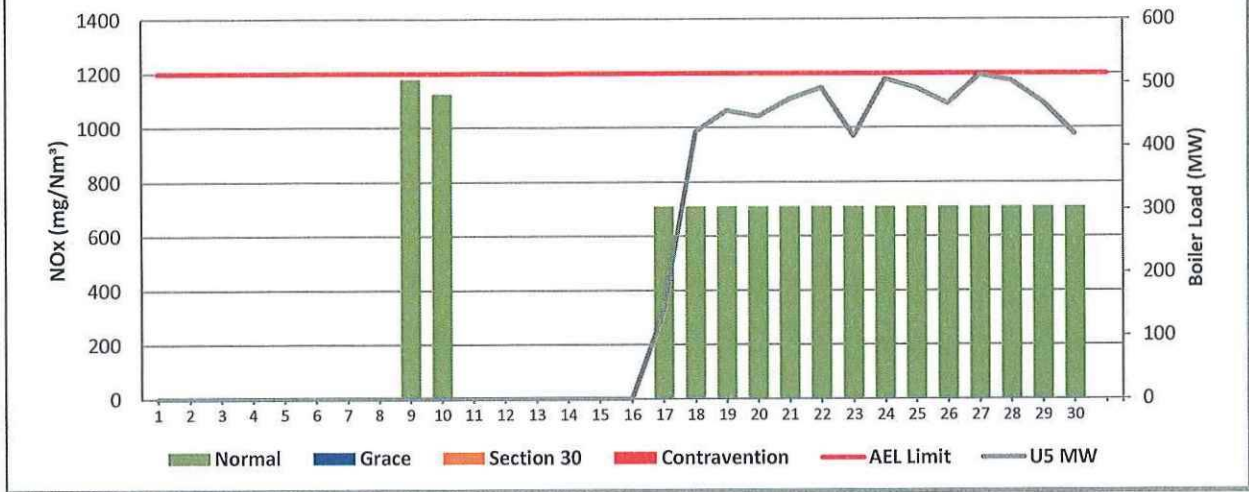
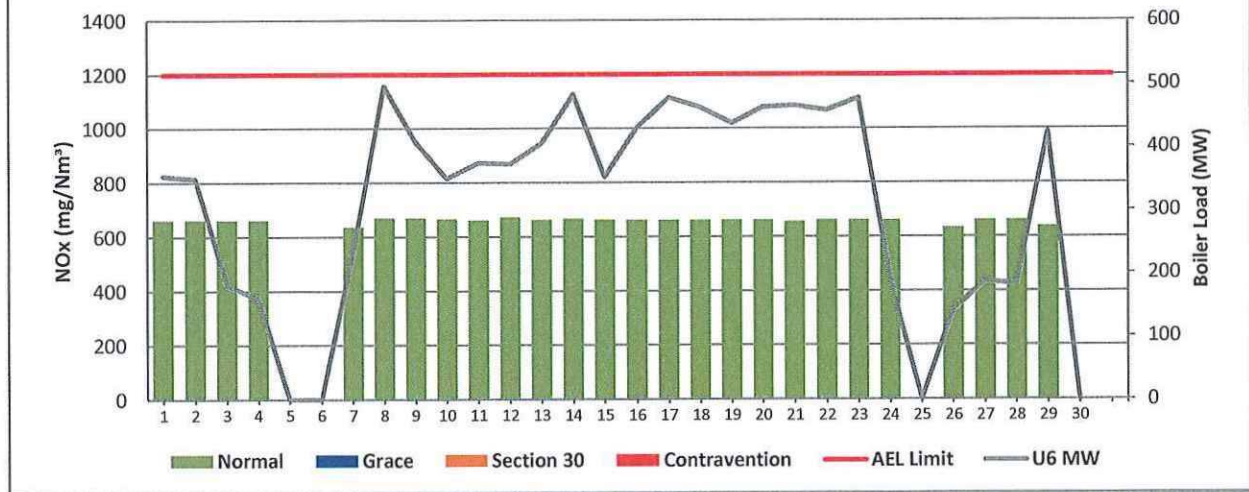


Figure 12: Matla Unit 6 NOx Emissions - September 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		no event		Unit 2		Unit 3	
Breaker Open (BO)	2:55 AM	2023/09/09			12:00 AM	2023/09/03	1:40 AM	2023/09/12
Draught Group (DG) Shut Down (SD)	6:10 AM	2023/09/10			12:00 AM	2023/09/03	3:15 PM	2023/09/12
BO to DG SD (duration)	01:03:15	DD:HH:MM		DD:HH:MM	00:00:00	DD:HH:MM	00:13:35	DD:HH:MM
Fires in time	12:10 PM	2023/09/22			1:45 AM	2023/09/15	2:10 PM	2023/09/16
Synch. to Grid (or BC)	8:30 PM	2023/09/22			2:05 PM	2023/09/15	11:15 PM	2023/09/16
Fires in to BC (duration)	00:08:20	DD:HH:MM		DD:HH:MM	00:12:20	DD:HH:MM	00:09:05	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit			not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH:MM		DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

South Stack ...cont.	Event 5		Event 6		Event 7		Event 8	
Unit No.	no event		no event		no event		no event	
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)	2:00 AM	2023/09/19						
Draught Group (DG) Shut Down (SD)	12:10 AM	2023/09/20						
BO to DG SD (duration)	00:22:10	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	9:45 AM	2023/09/24						
Synch. to Grid (or BC)	6:05 PM	2023/09/24						
Fires in to BC (duration)	00:08:20	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. 5	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	BO previously	BO previously						
Draught Group (DG) Shut Down (SD)	n/a	n/a						
BO to DG SD (duration)	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	9:30 AM	2023/09/17						
Synch. to Grid (or BC)	10:00 PM	2023/09/17						
Fires in to BC (duration)	00:12:30	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)	11:35 PM	2023/09/04	2:15 PM	2023/09/24	6:35 PM	2023/09/29		
Draught Group (DG) Shut Down (SD)	3:55 AM	2023/09/06	2:15 PM	2023/09/24	6:35 PM	2023/09/29		
BO to DG SD (duration)	01:04:20	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	7:00 AM	2023/09/07	8:15 PM	2023/09/24	6:35 PM	2023/09/29		
Synch. to Grid (or BC)	5:05 PM	2023/09/07	8:10 PM	2023/09/26	9:15 AM	2023/10/01		
Fires in to BC (duration)	00:10:05	DD:HH:MM	01:23:55	DD:HH:MM	01:14:40	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit		
Emissions below limit from BC (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM

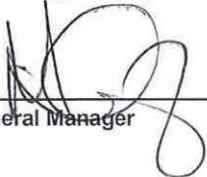
7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of September-2023 in mg/Nm³

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

11 General

Gas are reported using parallel tests averages.
Unit 6 reliability is affected by high emissions.
Unit 6 curve expired, Testing completed and awaiting for report.
South stack QAL 2 curve expired and testing in progress.

 p.p
31/10/2023
Boiler Engineering Date


General Manager Date
31/10/2023


31.10.2023
Environmental Department Date

Compiled by: Boiler Engineering Department

For: Department of Environmental Affairs and Tourism

Copies: Eskom Environmental Management

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Matla Power Station:

ESP & SO₂ System Engineer

Chief Air Pollution Control Officer

D Herbst
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R Rampiar
E. Patel

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