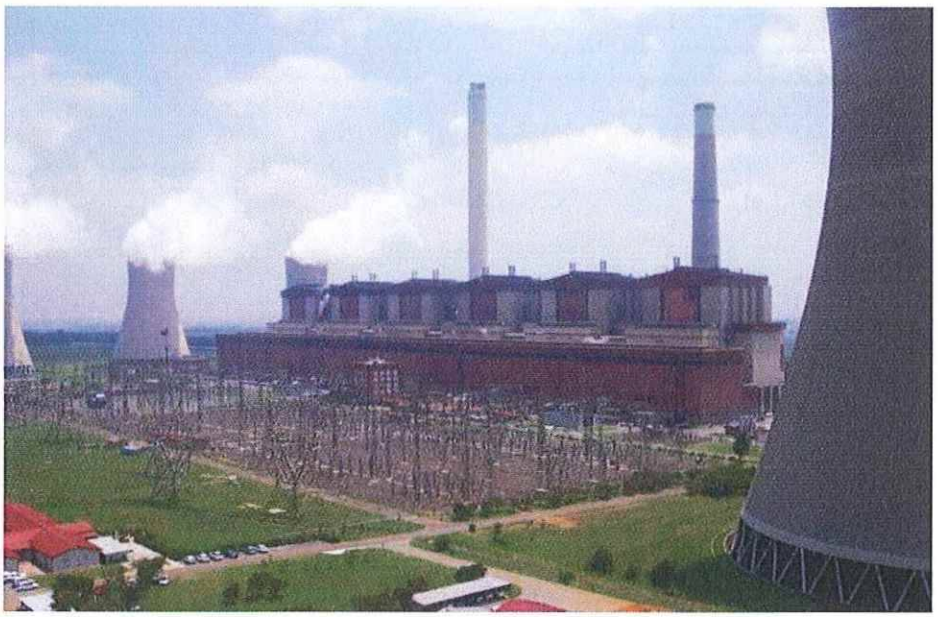
Eskom

OCTOBER 2023

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 Oct-2023
	Coal	Tons	*1 475 000*	*1 043 171*
	Fuel Oil	Tons	*3 500*	*1 363*
Production Rates	**Product / By-Product Name**	**Units**	**Max Production Capacity Permitted**	**Production Rate Oct-2023**
	Energy	GWh	*2 745*	*1 790*
	Ash	Tons	*471 000*	*293 966*
	RE PM	kg/MWh	*not specified*	*0.684*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.8-1.1*	*1.00*
Ash Content	%	*21-40*	*28.18*

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 NO_2

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Oct-2023
South	*Electro Static Precipators (ESP)*	*99.451%*
Unit 4	*Electro Static Precipators (ESP)*	*99.411%*
Unit 5	*Electro Static Precipators (ESP)*	*99.707%*
Unit 6	*Electro Static Precipators (ESP)*	*99.728%*

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	*99.9*	*100.0*	*100.0*	*100.0*
Unit 4	*100.0*	*99.7*	*99.7*	*99.7*
Unit 5	*99.9*	*100.0*	*100.0*	*100.0*
Unit 6	*98.7*	*100.0*	*100.0*	*100.0*

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM	SOx	NOx
Unit 1	158.2	2 508.3	601.5
Unit 2	361.1	5 801.4	1 391.2
Unit 3	218.8	3 506.1	840.8
Unit 4	228.0	3 082.2	1 096.2
Unit 5	135.6	2 883.4	1 063.9
Unit 6	123.2	3 668.3	1 009.9
SUM	1 224.9	21 449.7	6 003.4

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
South	26	5	0	0	5	152.8
Unit 4	20	6	0	0	6	169.4
Unit 5	27	3	1	0	4	91.5
Unit 6	25	4	0	1	5	80.1
SUM	**98**	**18**	**1**	**1**	**20**	

Table 6.3: Operating days in compliance to SO_2 AEL Limit - October 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
South	31	0	0	0	0	2 447.8
Unit 4	27	0	0	0	0	2 245.2
Unit 5	31	0	0	0	0	1 969.5
Unit 6	31	0	0	0	0	2 424.8
SUM	**120**	**0**	**0**	**0**	**0**	

Table 6.4: Operating days in compliance to NOx AEL Limit - October 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
South	31	0	0	0	0	587.0
Unit 4	27	0	0	0	0	798.5
Unit 5	31	0	0	0	0	723.4
Unit 6	31	0	0	0	0	667.6
SUM	**120**	**0**	**0**	**0**	**0**	

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

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

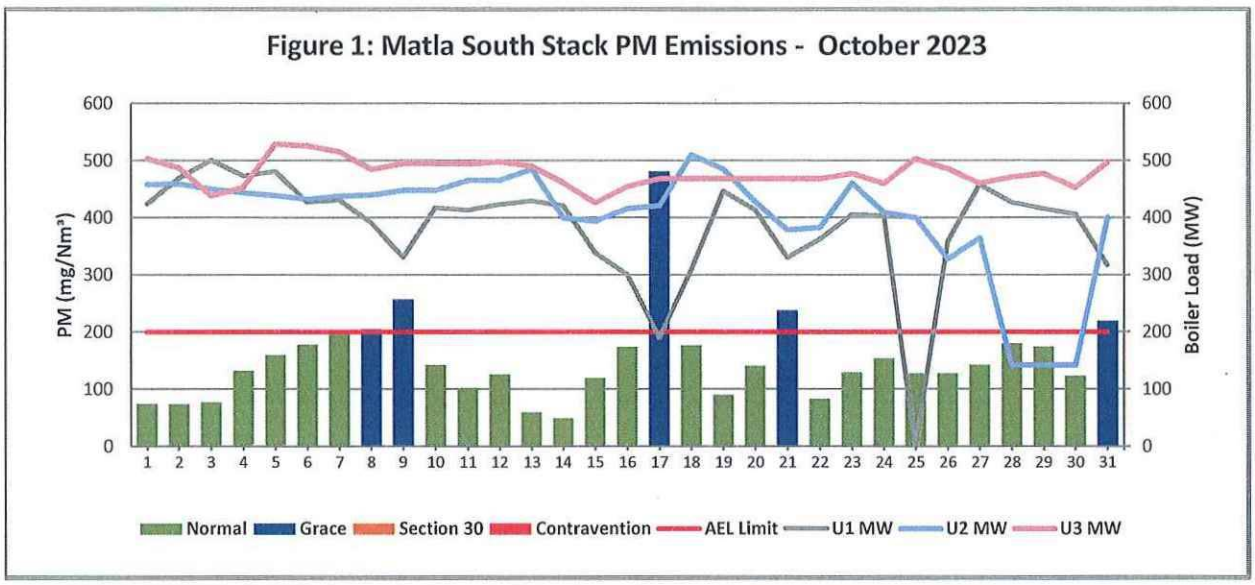


Figure 1: Matla South Stack PM Emissions - October 2023
PM (mg/Nm³)
Boiler Load (MW)
0
100
200
300
400
500
600
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

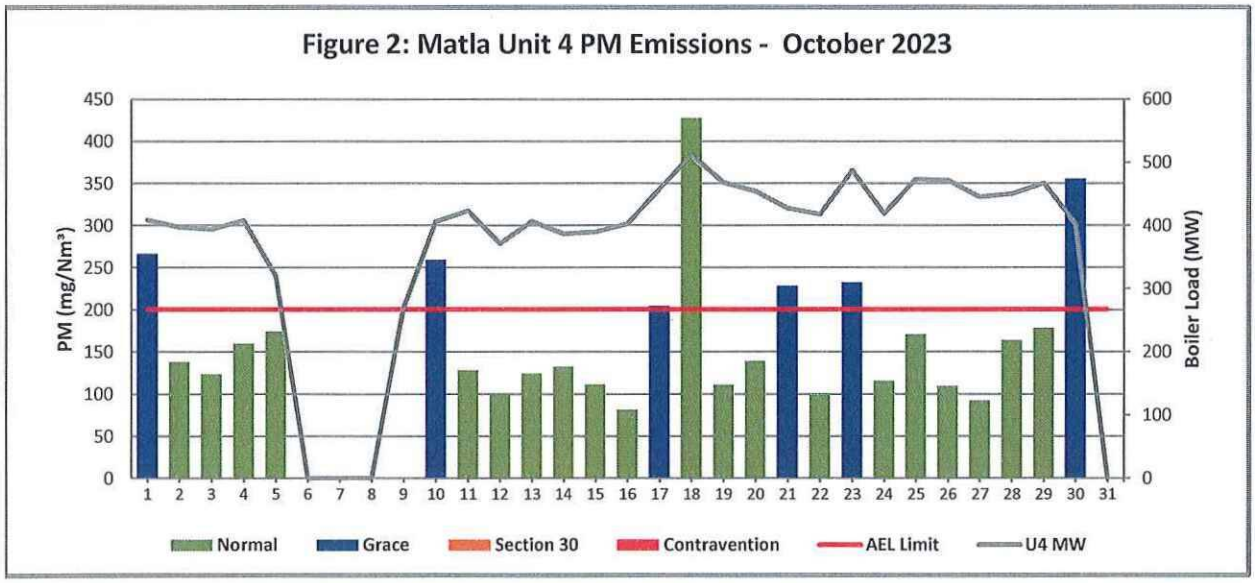


Figure 2: Matla Unit 4 PM Emissions - October 2023
PM (mg/Nm³)
Boiler Load (MW)
0
50
100
150
200
250
300
350
400
450
500
600
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW

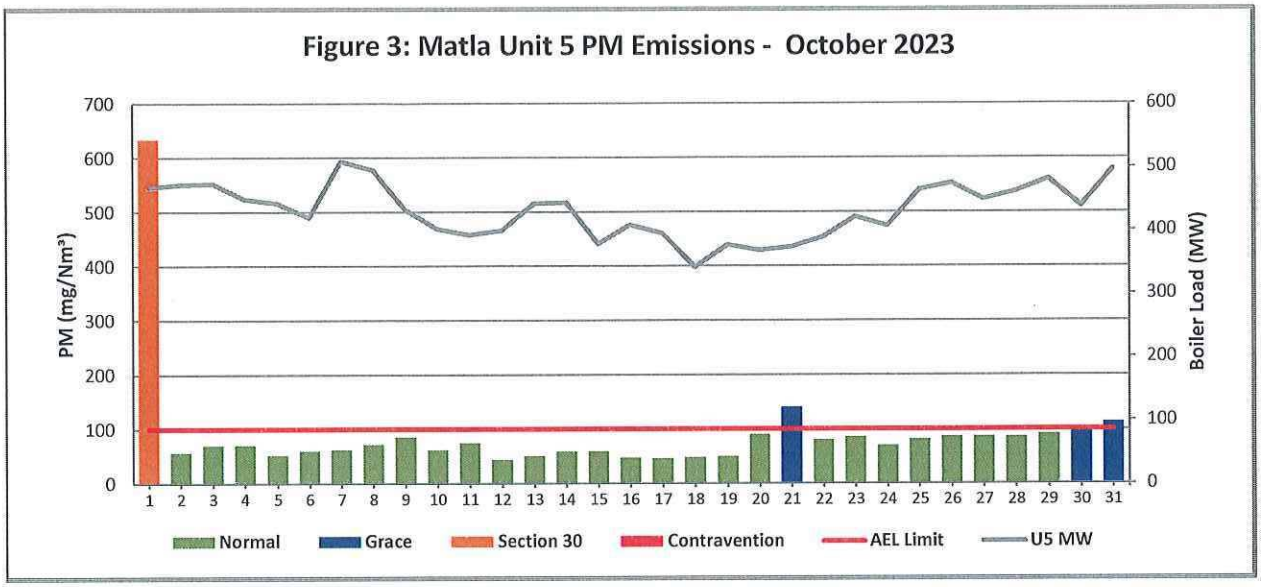


Figure 3: Matla Unit 5 PM Emissions - October 2023
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

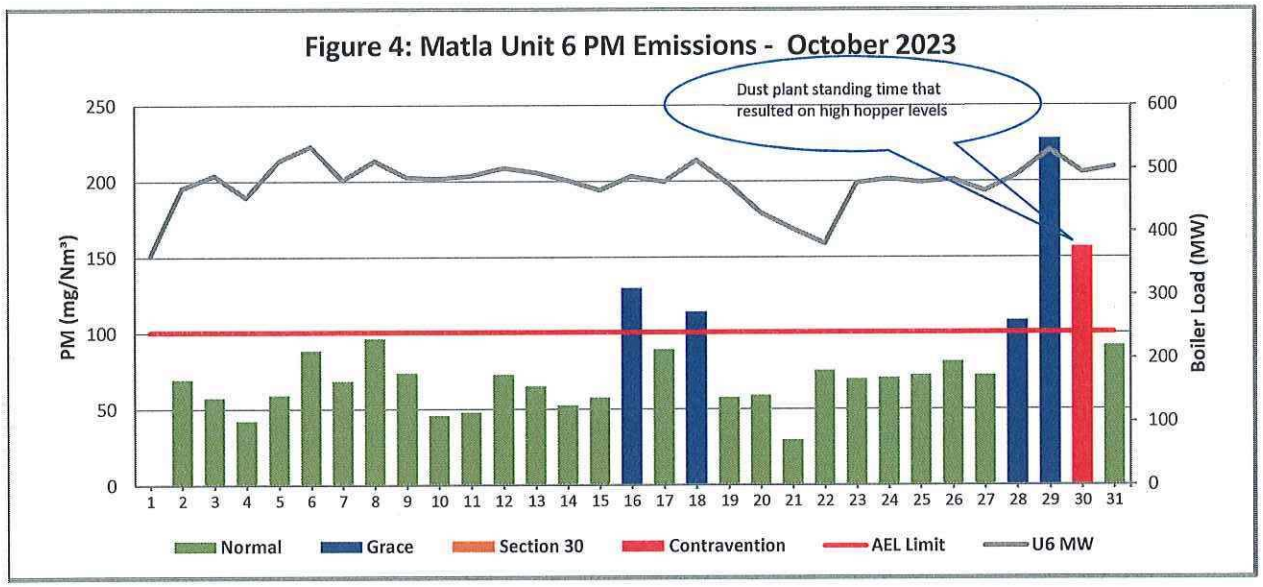


Figure 4: Matla Unit 6 PM Emissions - October 2023
Dust plant standing time that resulted on high hopper levels
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

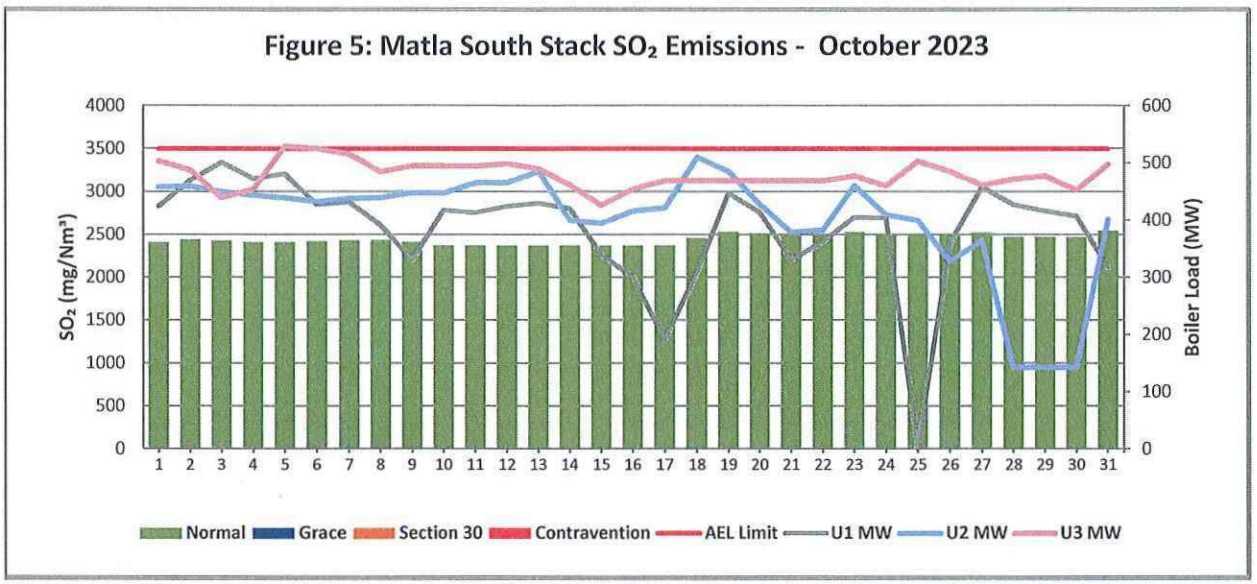


Figure 5: Matla South Stack SO_2 Emissions - October 2023
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

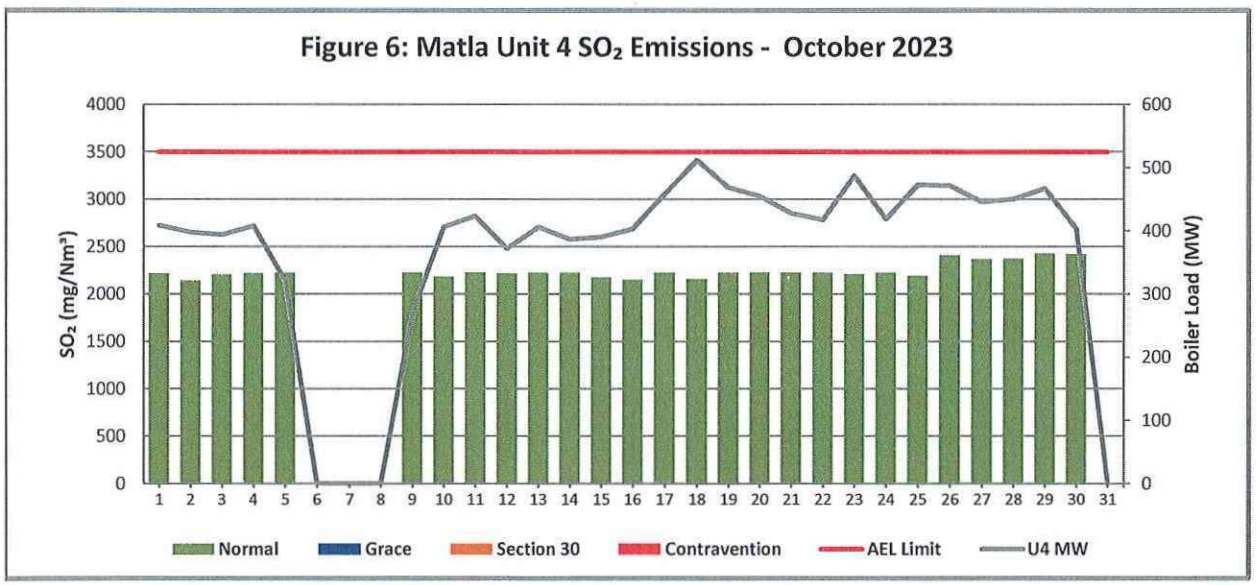


Figure 6: Matla Unit 4 SO_2 Emissions - October 2023
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW

Figure 7: Matla Unit 5 SO_2 Emissions - October 2023

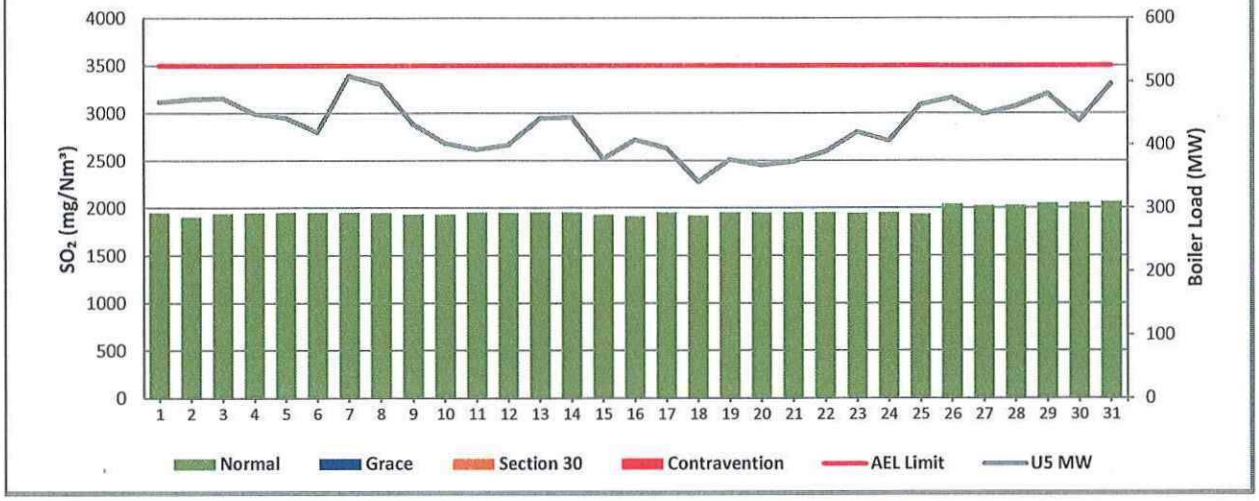


Figure 8: Matla Unit 6 SO_2 Emissions - October 2023

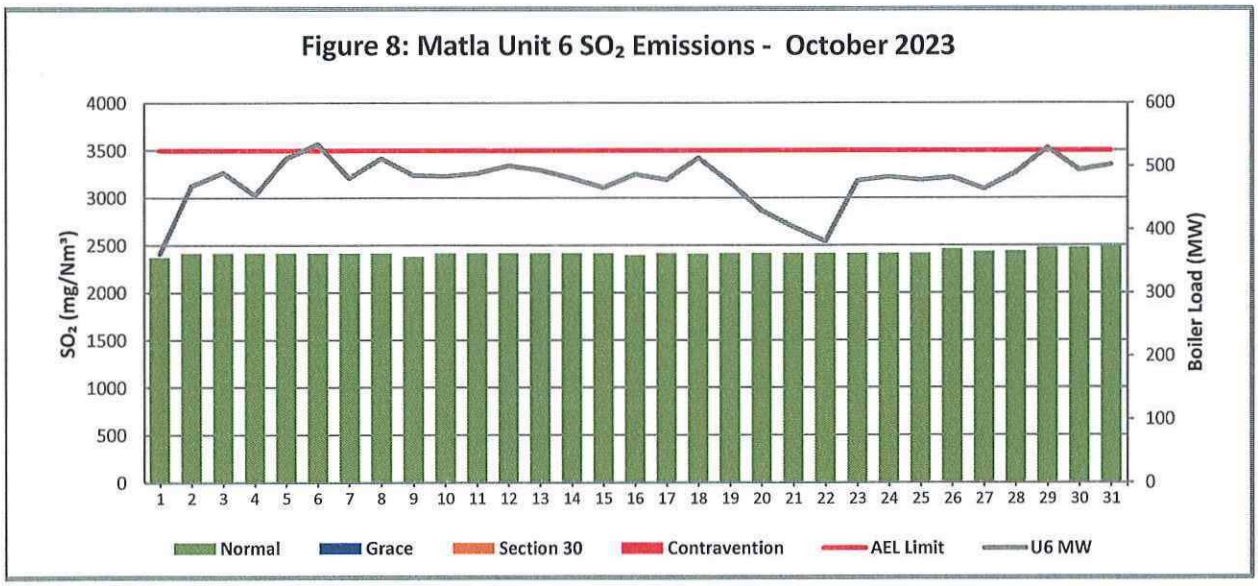


Figure 9: Matla South Stack NOx Emissions - October 2023

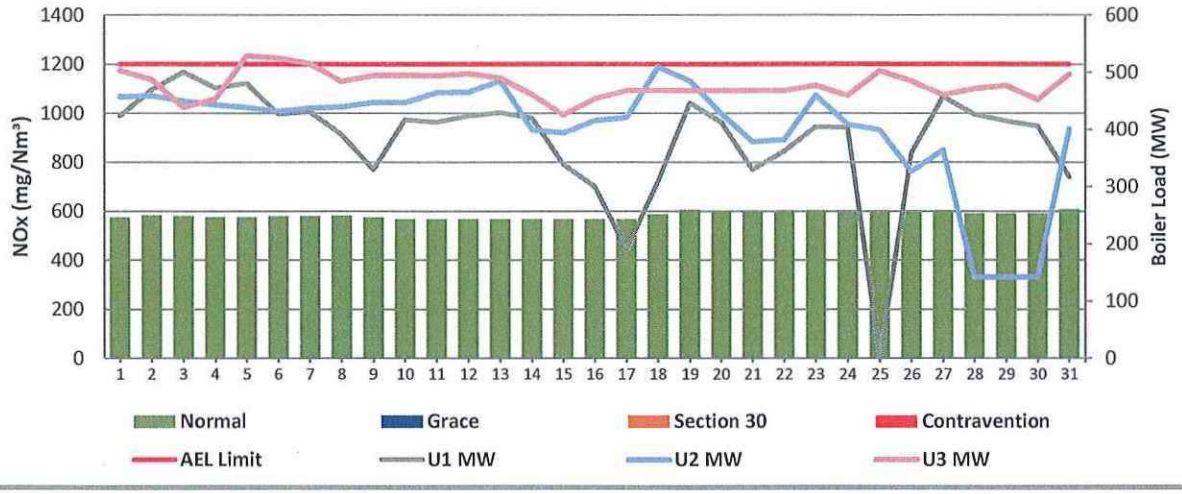


Figure 10: Matla Unit 4 NOx Emissions - October 2023

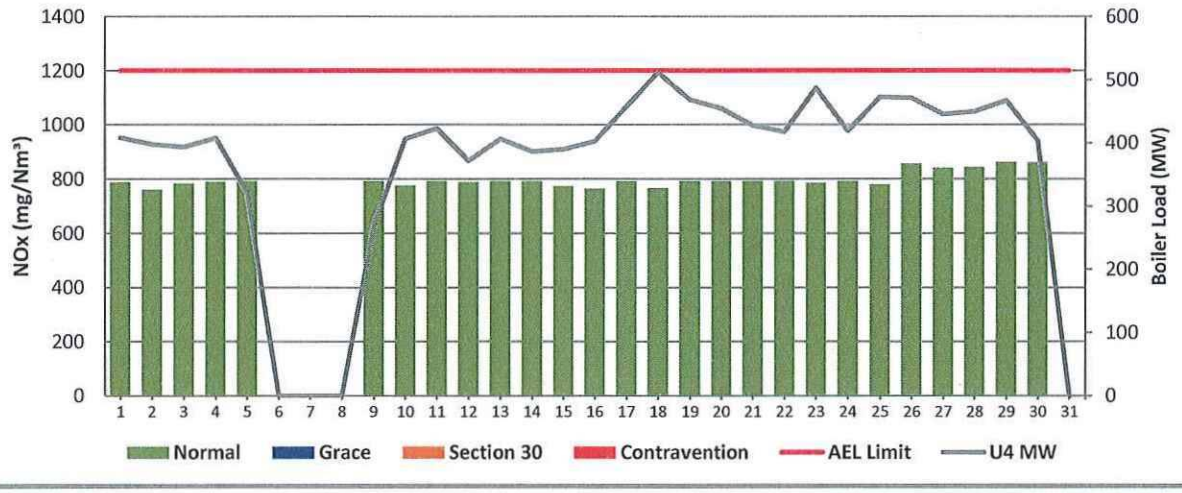


Figure 11: Matla Unit 5 NOx Emissions - October 2023

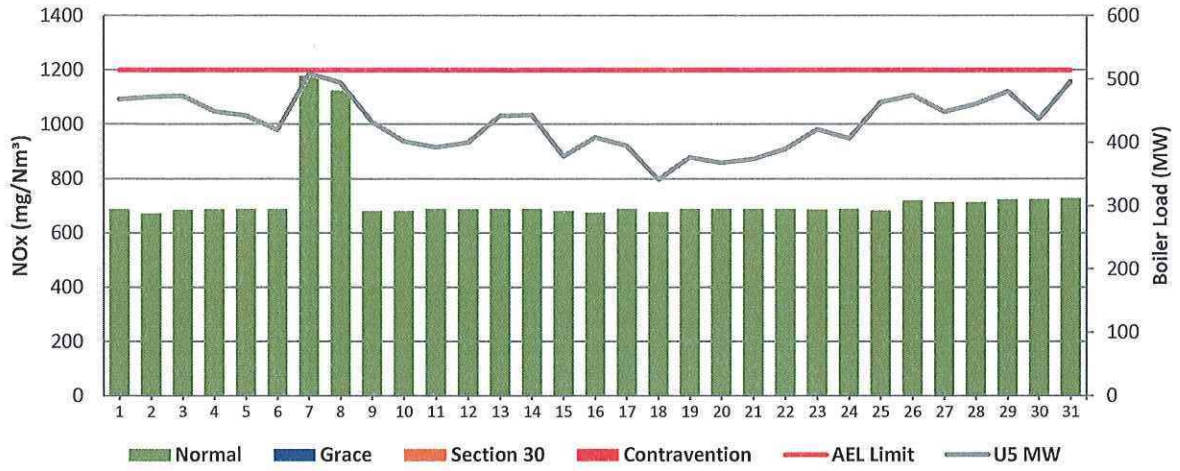
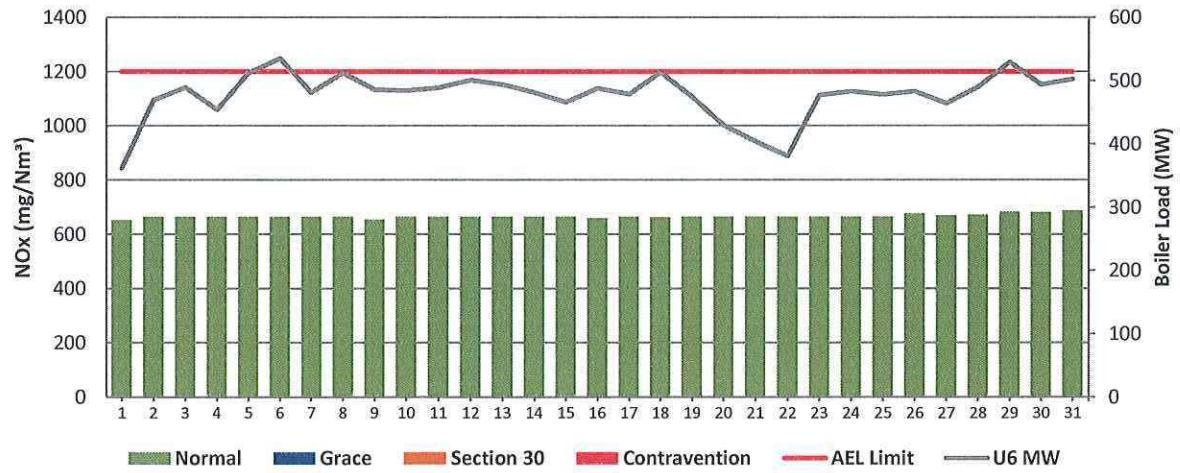


Figure 12: Matla Unit 6 NOx Emissions - October 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		no event		no event		no event	
Breaker Open (BO)	6:50 PM	2023/10/24	12:15 PM	2023/11/02				
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	6:10 AM	2023/11/03				
BO to DG SD (duration)	n/a	DD:HH:MM	00:17:55	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	6:50 PM	2023/10/24						
Synch. to Grid (or BC)	3:00 PM	2023/10/26						
Fires in to BC (duration)	01:20:10	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

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)	BO previously	BO previously	5:40 PM	2023/10/05	11:10 AM	2023/10/30		
Draught Group (DG) Shut Down (SD)	n/a	n/a	4:15 AM	2023/10/07	2:40 AM	2023/10/31		
BO to DG SD (duration)	n/a	DD:HH:MM	01:10:35	DD:HH:MM	00:15:30	DD:HH:MM		DD:HH:MM
Fires in time			2:15 AM	2023/10/09				
Synch. to Grid (or BC)			2:05 PM	2023/10/09				
Fires in to BC (duration)		DD:HH:MM	00:11:50	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)		DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No. 5	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. 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 October-2023 in mg/Nm³

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

11 General

Gas emissions are reported using QAL 2 averages. South stack QAL 2 curve expired, testing completed and awaiting for a report. Unit 5 PM curve expired and awaiting for testing in December 2023. Unit 6 PM curve testing done awaiting for retesting in December 2023.

27/11/2023

Boiler Engineering Date

Environmental Department 2023-11-27 Date

General Manager 29/11/2023 Date

Compiled by: Boiler Engineering Department

For: Department of Environmental Affairs and Tourism

Copies: Eskom Environmental Management

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