Eskom

Generation

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AND

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15

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MATLA POWER STATION

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

BOILER ENGINEERING MANAGER	02/03/2023 DATE
ENVIRONMENTAL MANAGER	02/03/2023 DATE
ENGINEERING MANAGER	03/03/2023 DATE

Eskom

JANUARY 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 Jan-2023
	Coal	Tons	*1 475 000*	*638 103*
	Fuel Oil	Tons	*3 500*	*916*
Production Rates	Product / By-Product Name	Units	Max Production Capacity Permitted	Production Rate Jan-2023
	Energy	GWh	*2 745*	*839*
	Ash	Tons	*471 000*	*190 410*
	RE PM	kg/MWh	*not specified*	*1.466*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.8-1.1*	*1.00*
Ash Content	%	*21-40*	*29.84*

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 Jan-2023
South	*Electro Static Precipators (ESP)*	*99.129%*
Unit 4	*Electro Static Precipators (ESP)*	*98.745%*
Unit 5	*Electro Static Precipators (ESP)*	*99.691%*
Unit 6	*Electro Static Precipators (ESP)*	

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	*96.8*	*96.8*	*100.0*	*96.8*
Unit 4	*0.0*	*98.2*	*98.2*	*98.2*
Unit 5	*100.0*	*100.0*	*100.0*	*100.0*
Unit 6				

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM	SOx	NOx
Unit 1	256.5	1 931.5	462.4
Unit 2	786.3	6 014.0	1 405.4
Unit 3	23.1	154.3	37.0
Unit 4	15.9	33.4	17.9
Unit 5	147.8	2 838.0	1 476.1
Unit 6	0.0	0.0	0.0
SUM	1 229.5	10 971.2	3 398.8

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
South	3	8	0	20	28	314.6
Unit 4	0	1	0	0	1	1 000.0
Unit 5	18	10	0	3	13	101.7
Unit 6	0	0	0	0	0	
SUM	**21**	**19**	**0**	**23**	**42**	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
South	31	0	0	0	0	2 416.3
Unit 4	2	0	0	0	0	2 091.6
Unit 5	31	0	0	0	0	1 947.4
Unit 6	0	0	0	0	0	
SUM	**64**	**0**	**0**	**0**	**0**	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
South	31	0	0	0	0	565.3
Unit 4	2	0	0	0	0	1 069.0
Unit 5	31	0	0	0	0	1 012.1
Unit 6	0	0	0	0	0	
SUM	**64**	**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

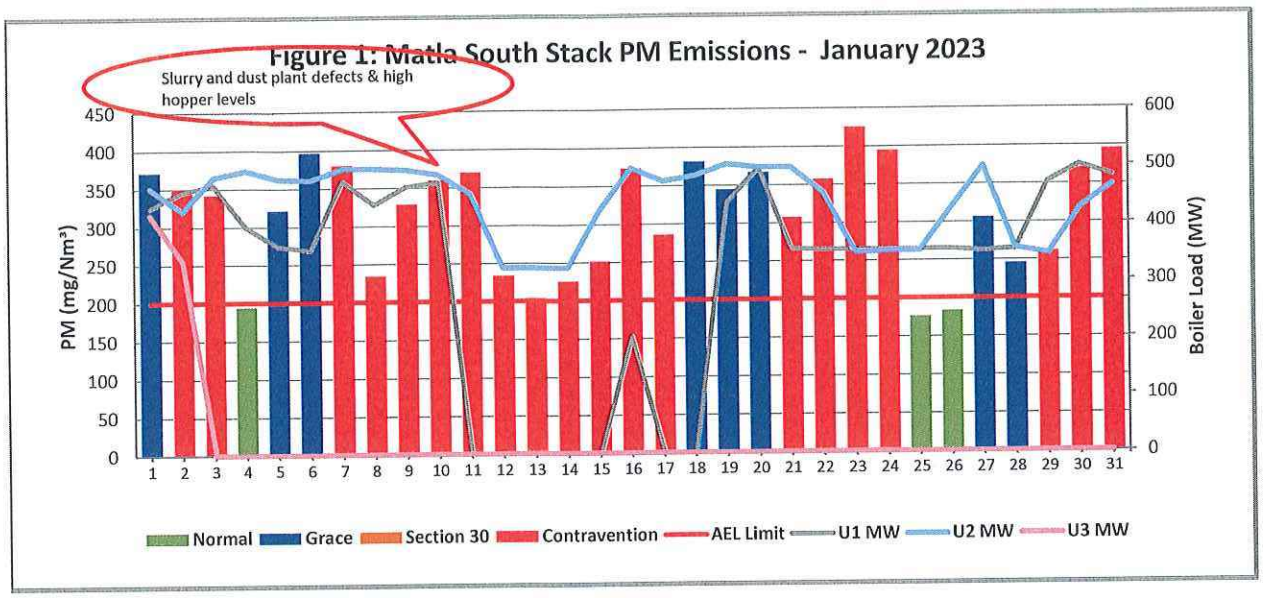


Figure 1: Matla South Stack PM Emissions - January 2023
Slurry and dust plant defects & high hopper levels
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

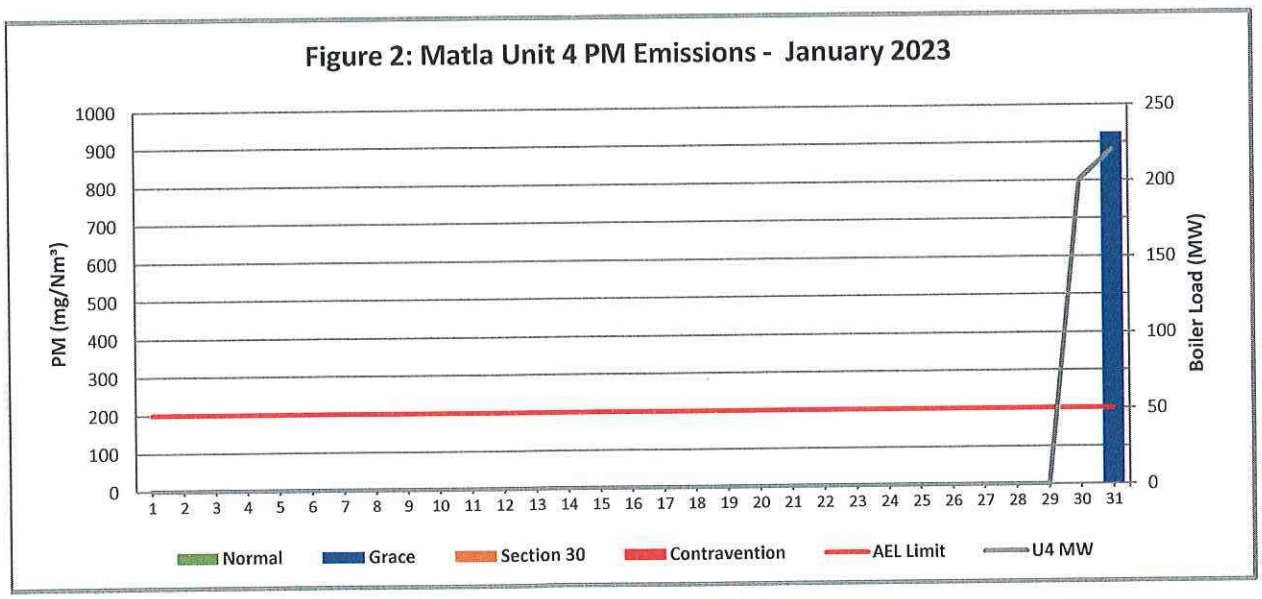


Figure 2: Matla Unit 4 PM Emissions - January 2023
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW

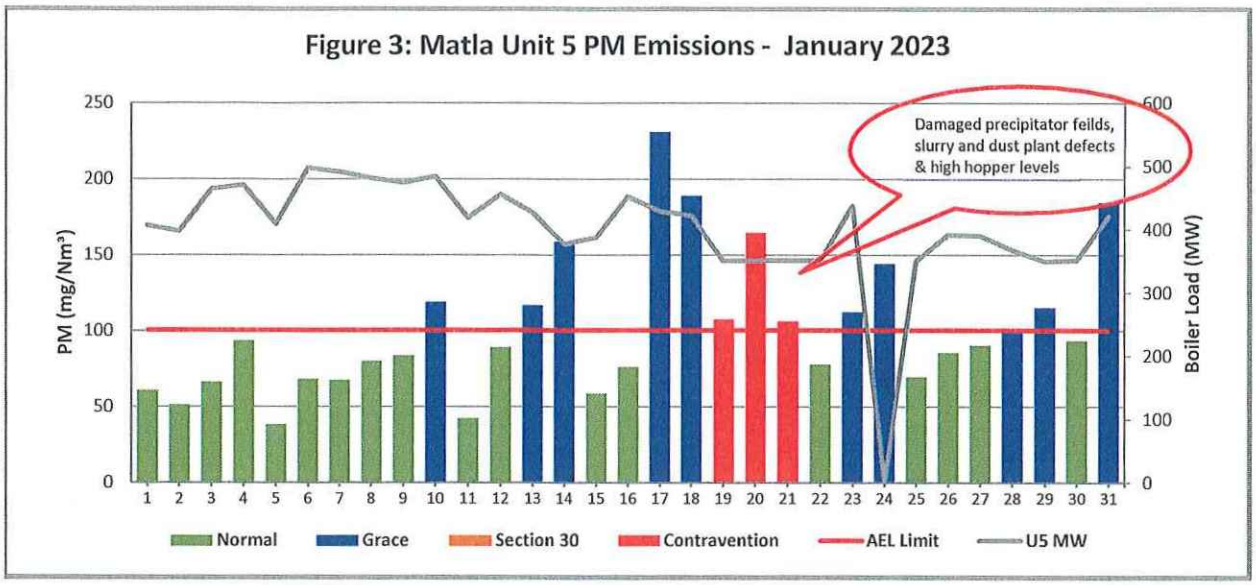


Figure 3: Matla Unit 5 PM Emissions - January 2023
Damaged precipitator feilds, slurry and dust plant defects & high hopper levels
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

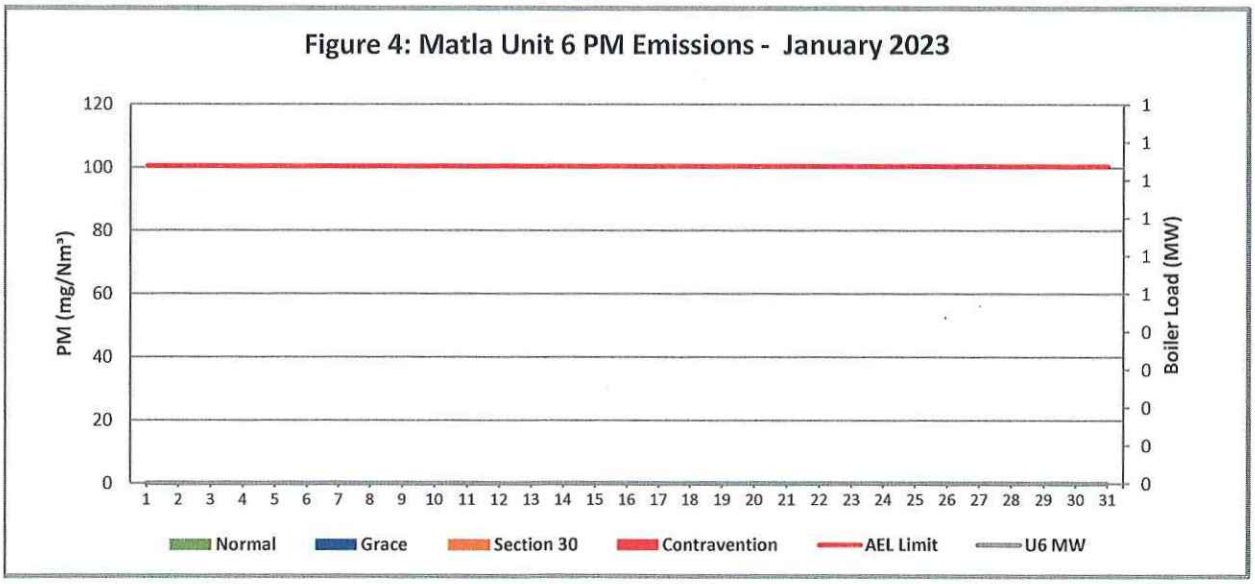


Figure 4: Matla Unit 6 PM Emissions - January 2023
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

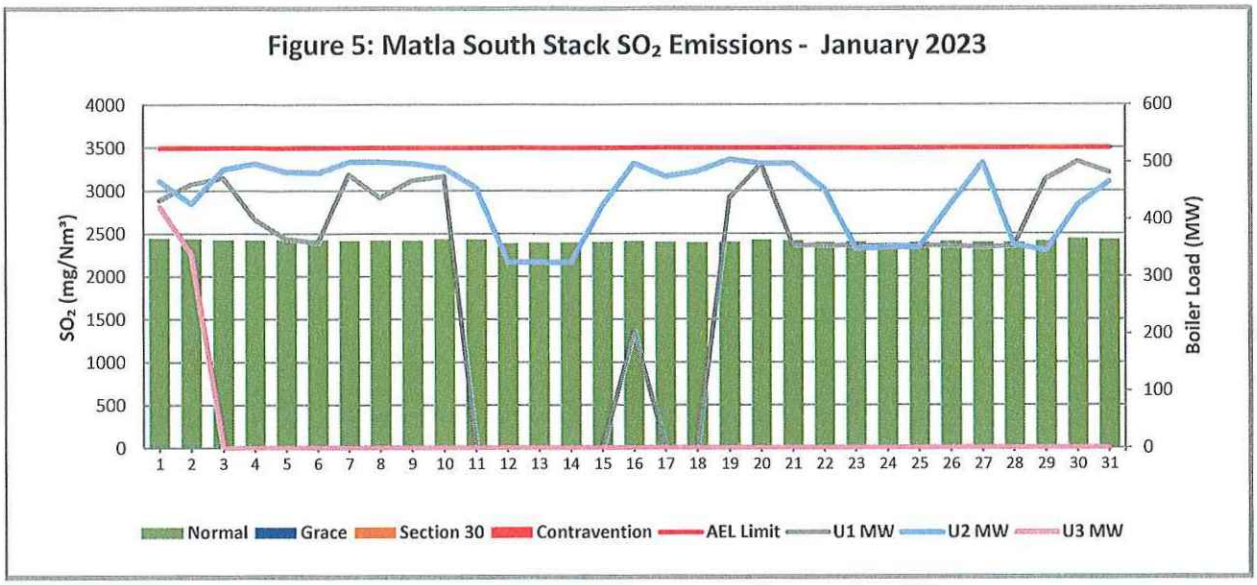


Figure 5: Matla South Stack SO_2 Emissions - January 2023
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3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

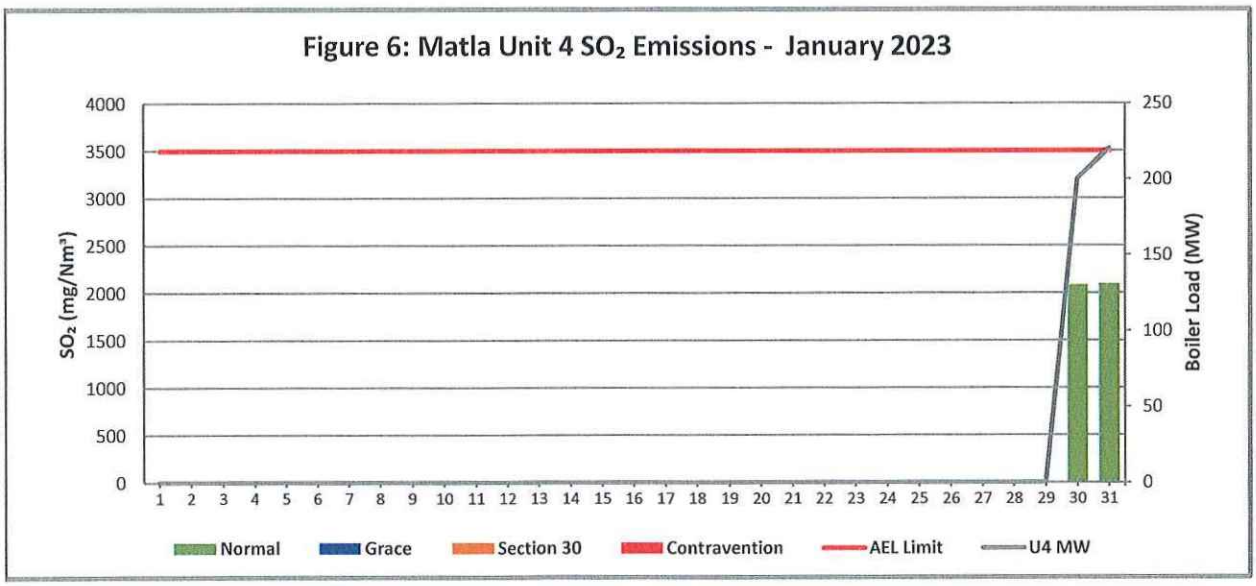


Figure 6: Matla Unit 4 SO_2 Emissions - January 2023
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW

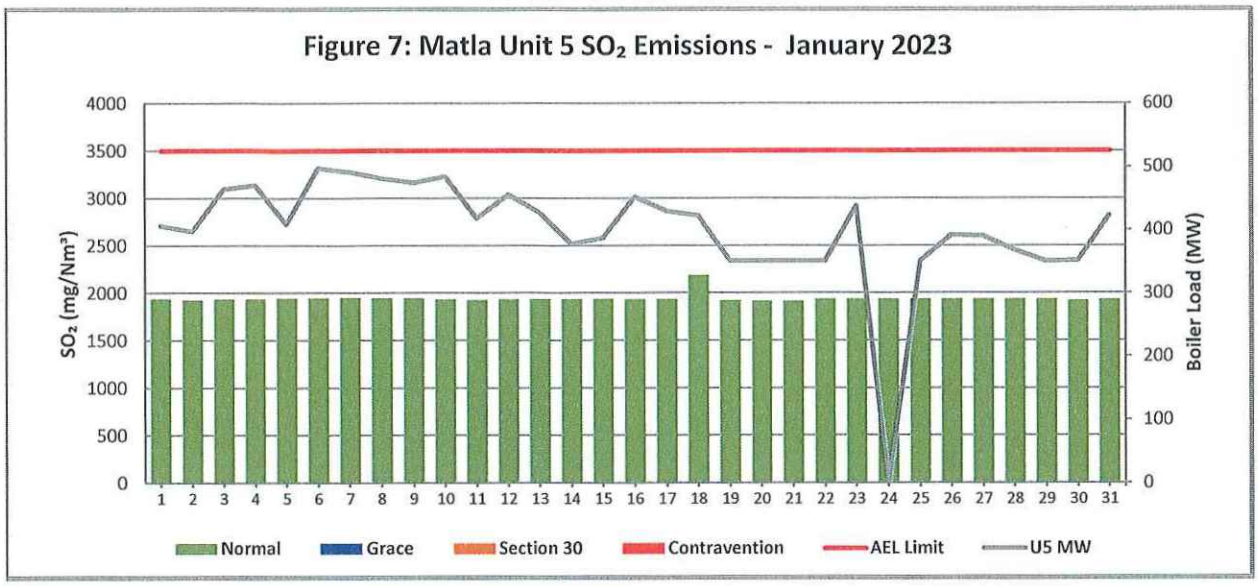


Figure 7: Matla Unit 5 SO_2 Emissions - January 2023
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

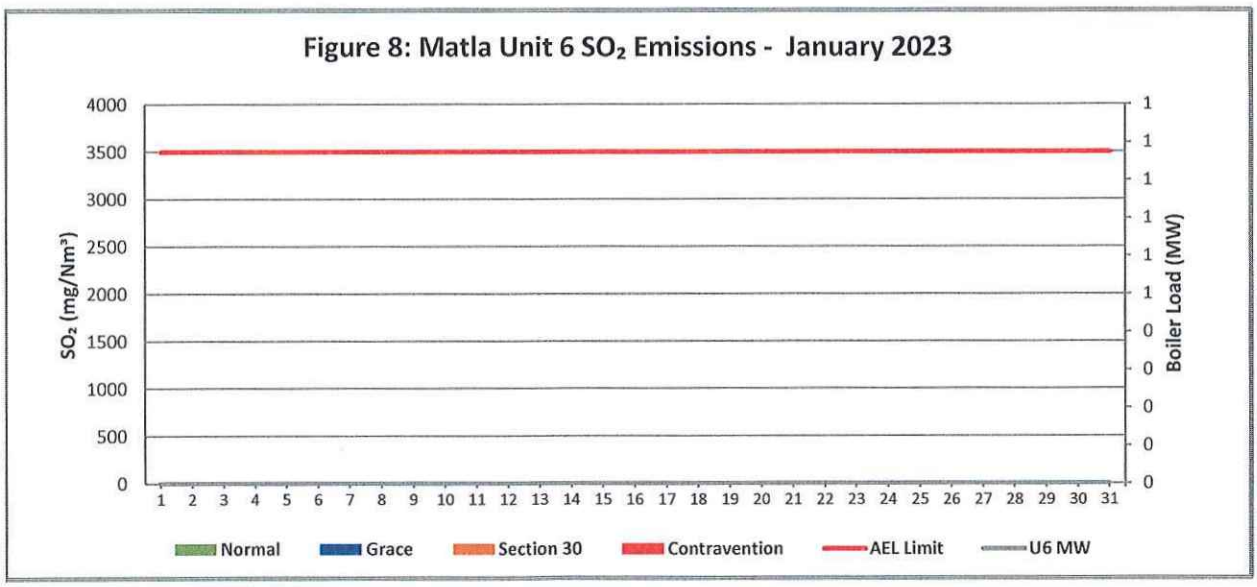


Figure 8: Matla Unit 6 SO_2 Emissions - January 2023
SO_2 (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
1
1
1
1
1
1
0
0
0
0
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

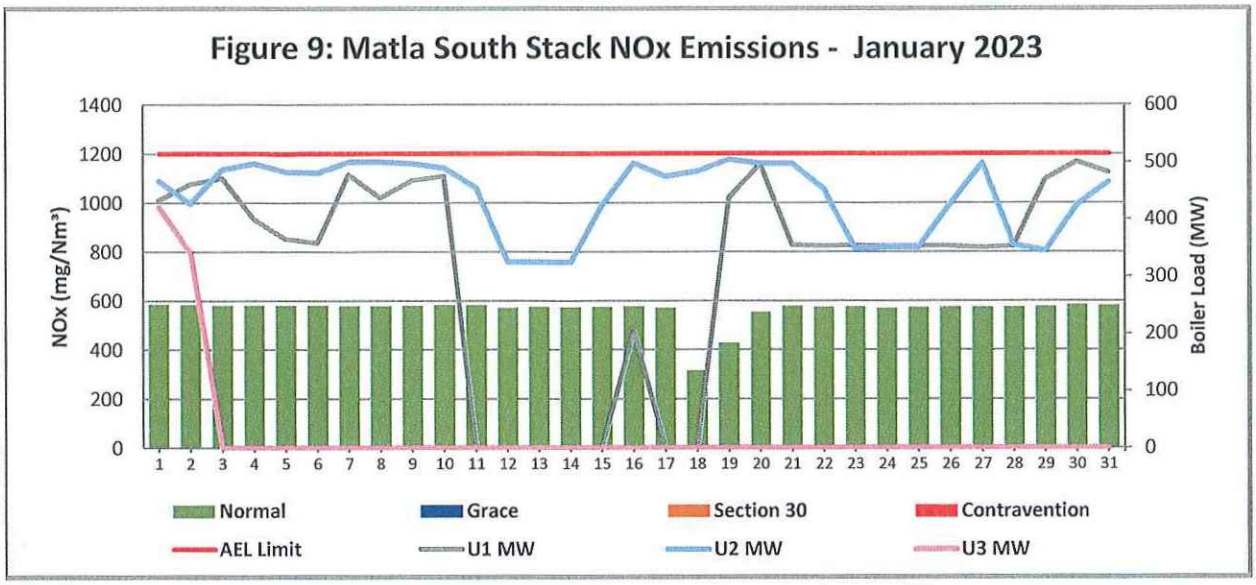


Figure 9: Matla South Stack NOx Emissions - January 2023
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

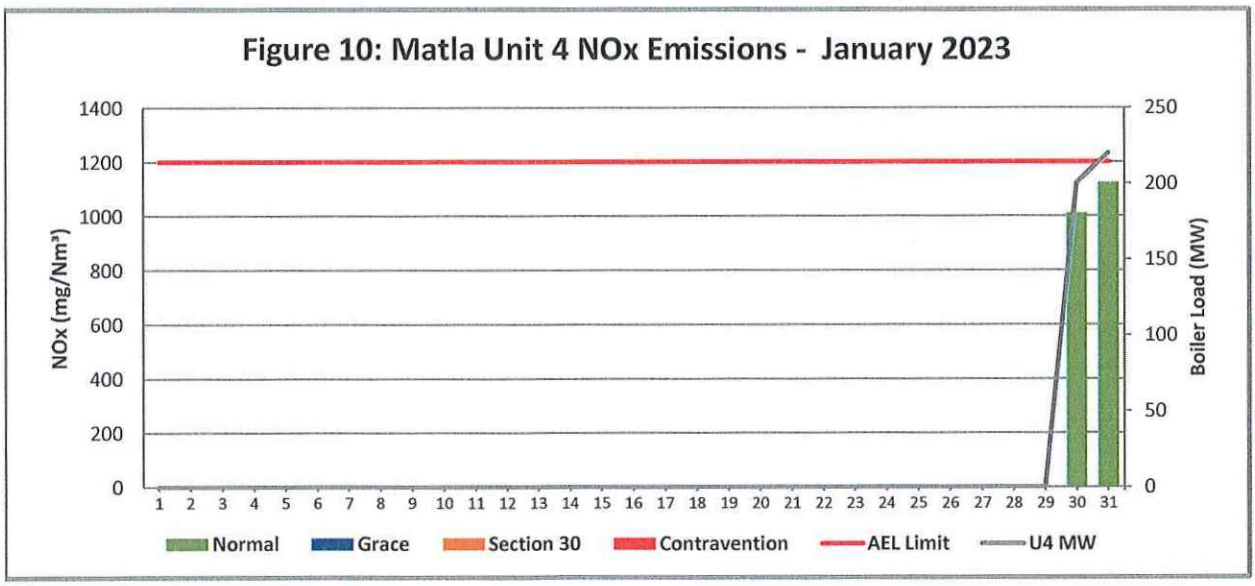


Figure 10: Matla Unit 4 NOx Emissions - January 2023
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW

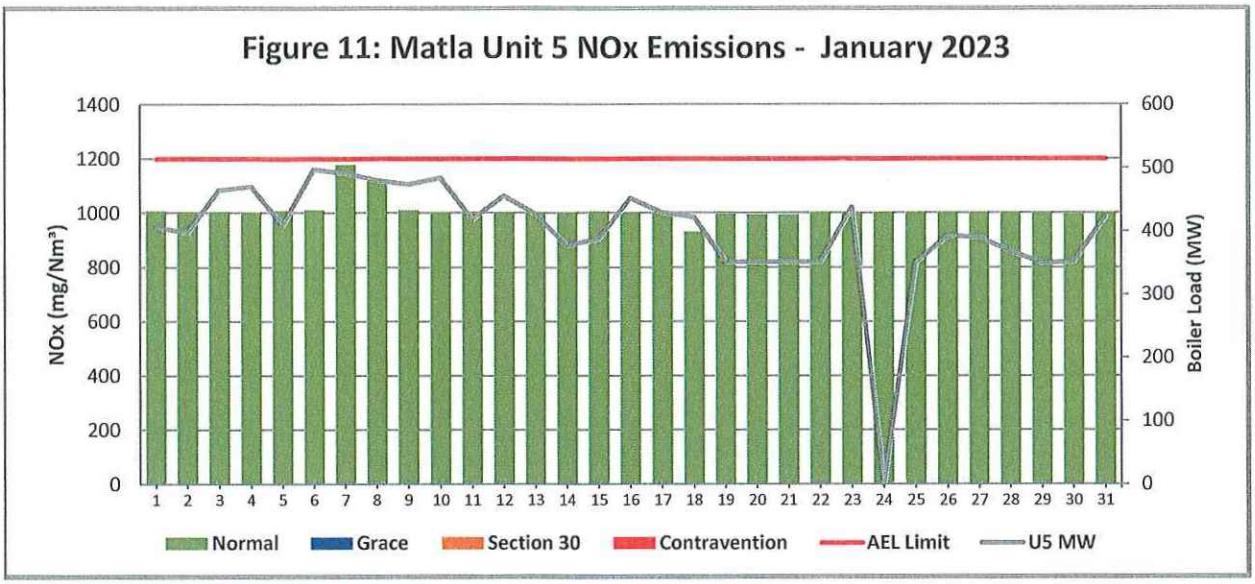


Figure 11: Matla Unit 5 NOx Emissions - January 2023
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

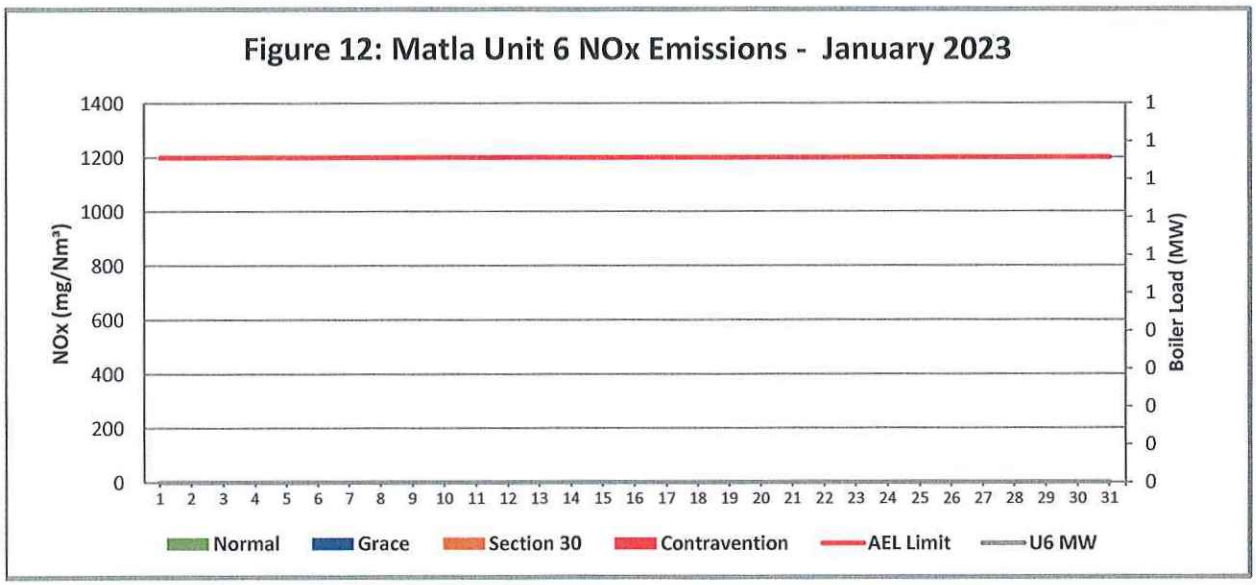


Figure 12: Matla Unit 6 NOx Emissions - January 2023
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
1
1
1
1
1
1
0
0
0
0
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

7 SHUT DOWN AND LIGHT UP INFORMATION

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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		no event		no event		no event	
Breaker Open (BO)	10:35 PM	2023/01/10	10:35 AM	2023/01/02				
Draught Group (DG) Shut Down (SD)	1:45 AM	2023/01/12	9:40 AM	2023/01/03				
BO to DG SD (duration)	01:03:10	DD:HH:MM	00:23:05	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	5:00 PM	2023/01/18						
Synch. to Grid (or BC)	4:30 AM	2023/01/19						
Fires in to BC (duration)	00:11:30	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

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)								
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)								
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 January-2023 in mg/Nm³

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

Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

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 January 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 January 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 reoccurrence	Date measure will be implemented
(Insert name of affected person/source)	*(Insert root cause for incident)*	*(Insert emissions associated with incident)*	*(Insert dispersion model information where applicable)*	*(Insert mitigation measures taken)*	*(Insert date of implementation of mitigation method)*

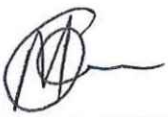
10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

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	S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledg-ment	Date DEA Acceptabe	Comments / Reference No.
SS	02/01/2023	31/01/2023	Damaged precipitators. Slurry and Dust plant defects that resulted on high hopper level backlog.	Clear hopper level levels	No				Legal contravention
5	19-01-2023	20/07/2022	Damaged precipitators. Slurry and Dust plant defects that resulted on high hopper level backlog.	Clear hopper level and requested opportunity outage	No				Legal contravention

11 General

Gases monitors are not accurate and are reported using parallel tests averages.
Unit 4 PM correlation curve expeired and there was abaetment technology upgrade. Unit 4 will be arraged after short outage opportunity and currently monitoring defects.
Unit 4 PM reliability at zero, unit was on ligh-up condition with emissions.This unit was light-up on last two days of the month.

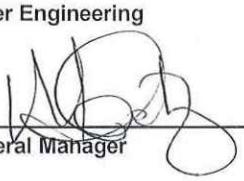


02-03-2023

Boiler Engineering Date

02.03.2023

Environmental Department Date



03/03/2023

General Manager Date

Compiled by: Boiler Engineering Department — ESP & SO_3 System Engineer

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

Copies: Eskom Environmental Management — D Herbst, 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