Eskom

Generation

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15

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MATLA POWER STATION

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

BOILER ENGINEERING MANAGER — 05/05/2023 — DATE

ENVIRONMENTAL MANAGER — 2023/05/05 — DATE

ENGINEERING MANAGER — 2023-05-05 — DATE

Eskom

MARCH 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 Mar-2023
	Coal	Tons	*1 475 000*	*840 692*
	Fuel Oil	Tons	*3 500*	*1 306*
Production Rates	**Product / By-Product Name**	**Units**	**Max Production Capacity Permitted**	**Production Rate Mar-2023**
	Energy	GWh	*2 745*	*1 058*
	Ash	Tons	*471 000*	*264 398*
	RE PM	kg/MWh	*not specified*	*0.869*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.8-1.1*	*1.00*
Ash Content	%	*21-40*	*31.45*

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 Mar-2023
South	*Electro Static Precipators (ESP)*	*99.690%*
Unit 4	*Electro Static Precipators (ESP)*	*99.349%*
Unit 5	*Electro Static Precipators (ESP)*	*99.630%*
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	*100.0*	*100.0*	*100.0*	*100.0*
Unit 4	*95.5*	*99.7*	*100.0*	*100.0*
Unit 5	*96.4*	*99.7*	*99.8*	*99.8*
Unit 6				

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM	SOx	NOx
Unit 1	118.2	2 028.8	486.5
Unit 2	332.6	5 932.8	1 422.7
Unit 3	0.0	0.0	0.0
Unit 4	291.9	2 960.8	1 009.3
Unit 5	176.7	2 535.4	1 170.5
Unit 6	0.0	0.0	0.0
SUM	919.5	13 457.8	4 088.9

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
South	26	5	0	0	5	134.1
Unit 4	12	7	0	4	11	215.6
Unit 5	16	7	0	5	12	155.8
Unit 6	0	0	0	0	0	
SUM	**54**	**19**	**0**	**9**	**28**	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
South	31	0	0	0	0	2 423.2
Unit 4	24	0	0	0	0	2 168.1
Unit 5	30	0	0	0	0	2 182.6
Unit 6	0	0	0	0	0	
SUM	**85**	**0**	**0**	**0**	**0**	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
South	31	0	0	0	0	581.1
Unit 4	24	0	0	0	0	758.8
Unit 5	26	0	0	5	5	1 012.3
Unit 6	0	0	0	0	0	
SUM	**81**	**0**	**0**	**5**	**5**	

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 - March 2023

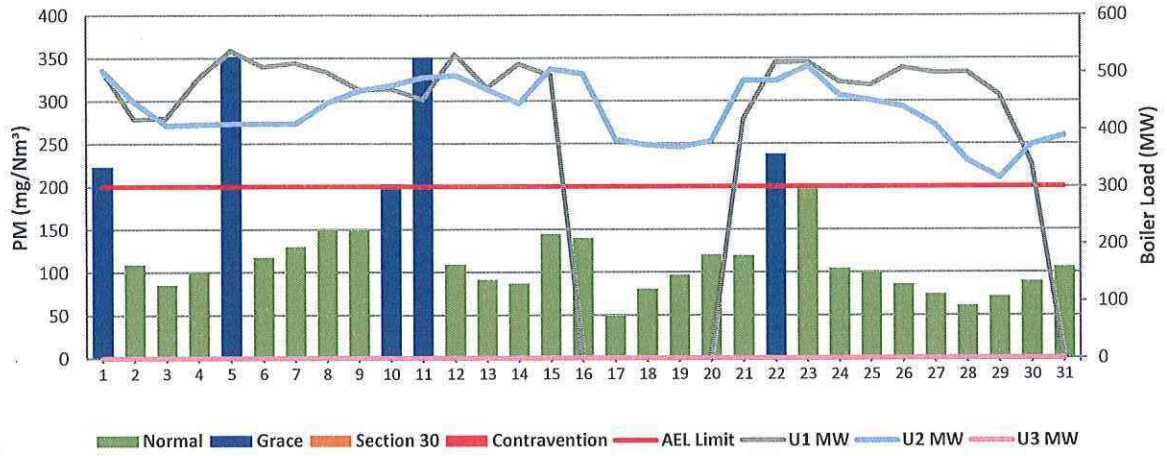


Figure 2: Matla Unit 4 PM Emissions - March 2023

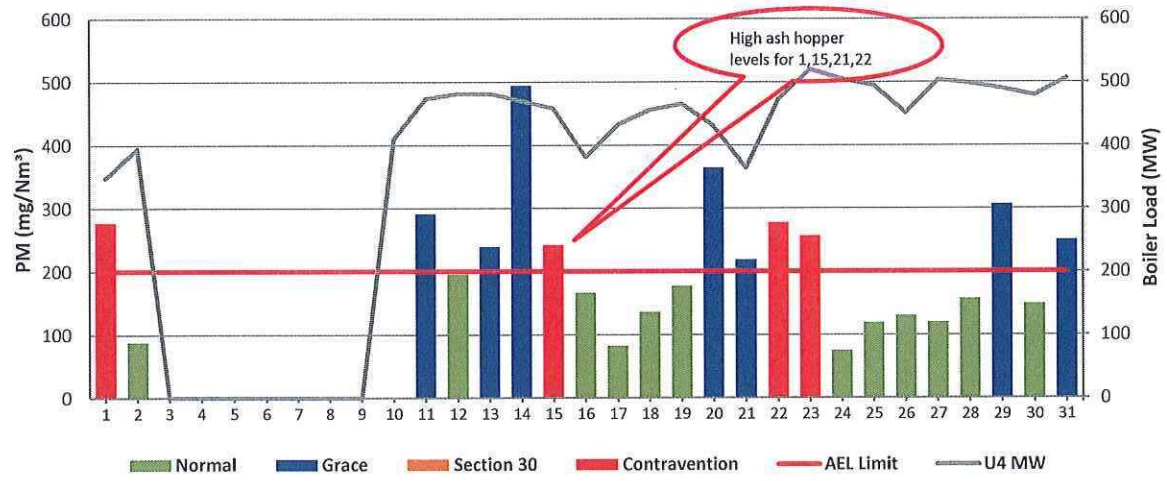


Figure 3: Matla Unit 5 PM Emissions - March 2023

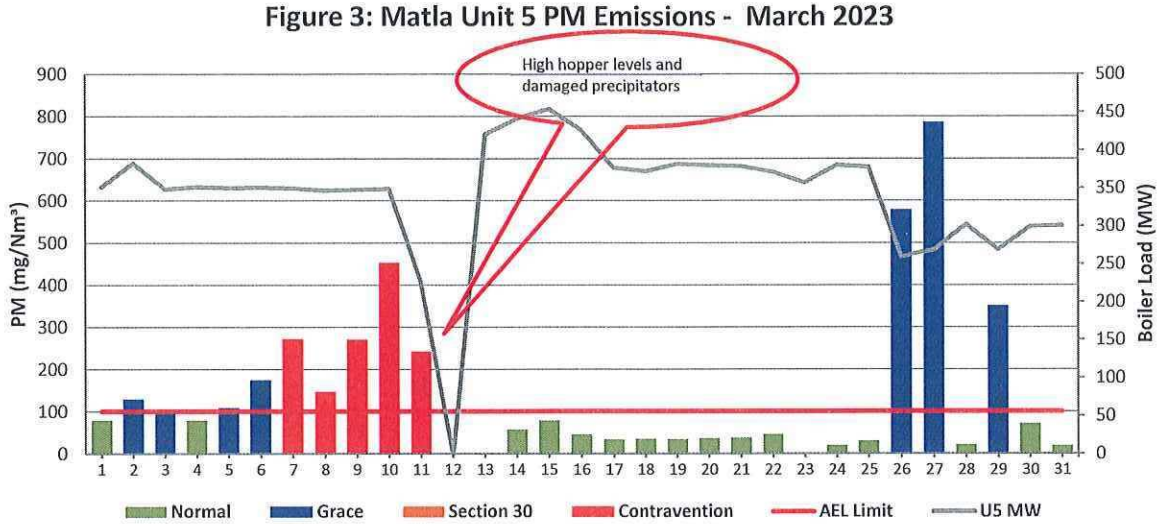


Figure 4: Matla Unit 6 PM Emissions - March 2023

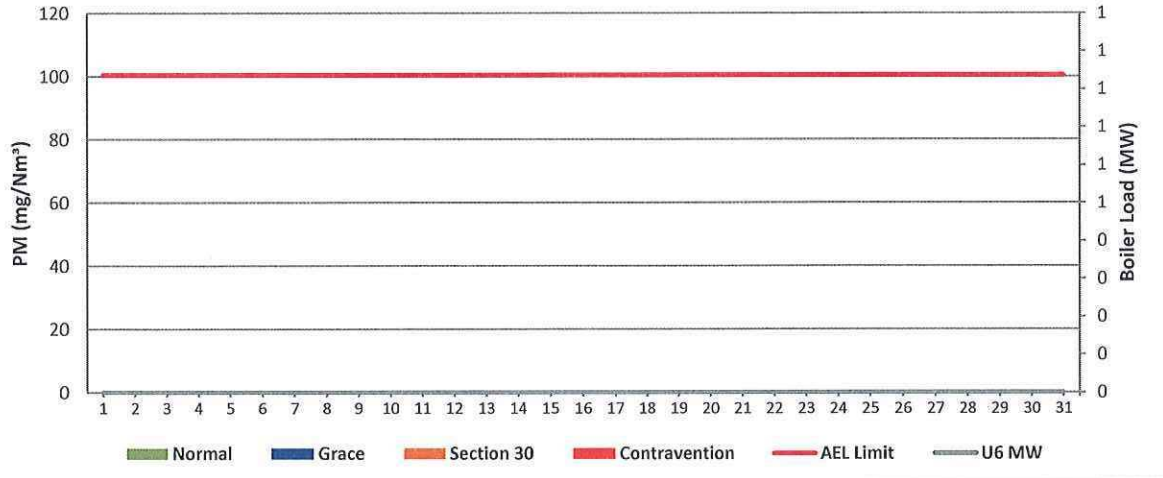


Figure 5: Matla South Stack SO_2 Emissions - March 2023

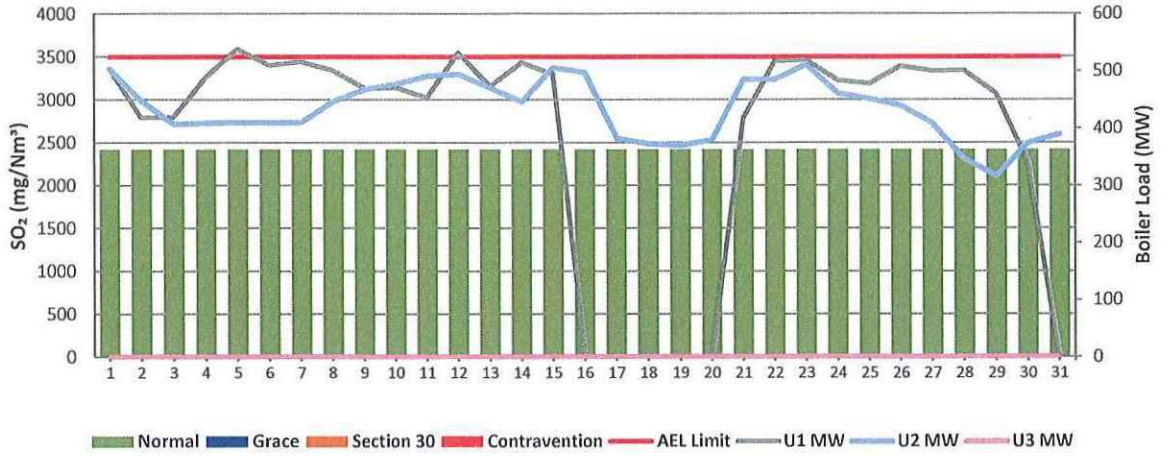
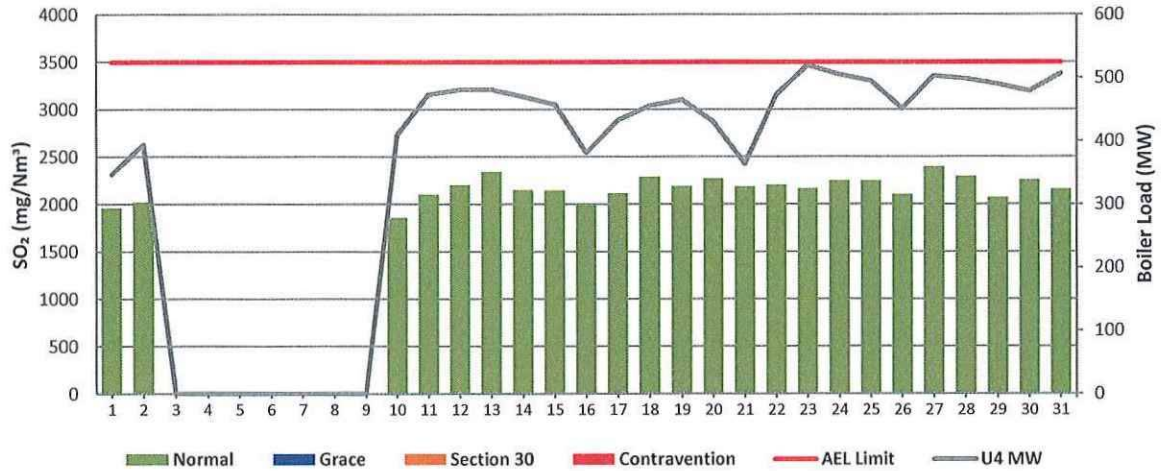


Figure 6: Matla Unit 4 SO_2 Emissions - March 2023



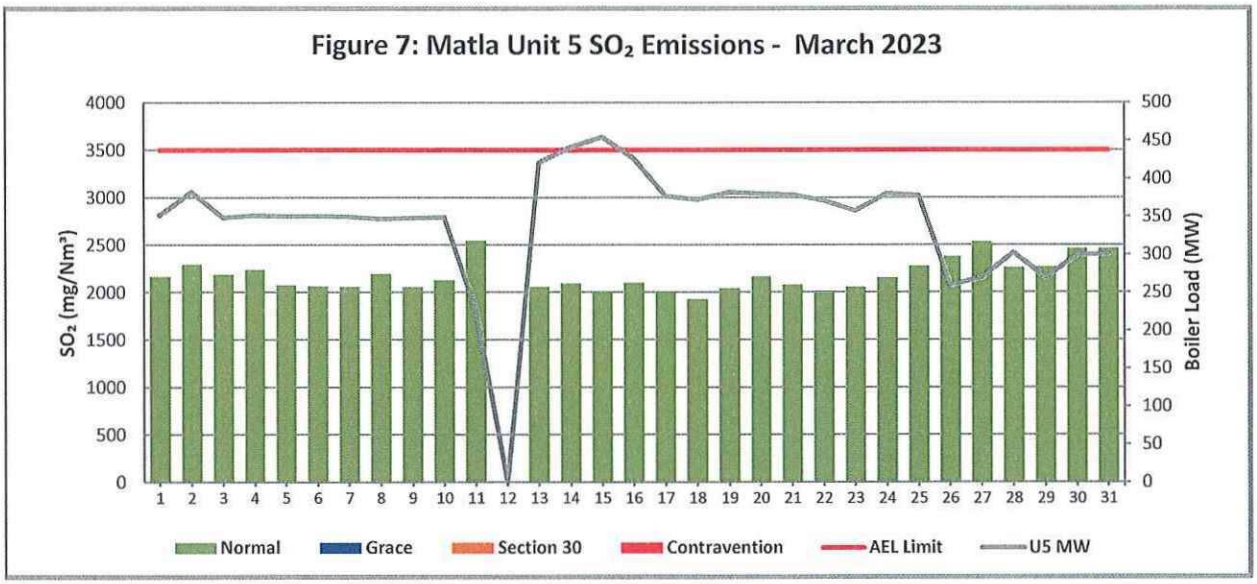


Figure 7: Matla Unit 5 SO2 Emissions - March 2023
SO2 (mg/Nm3)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

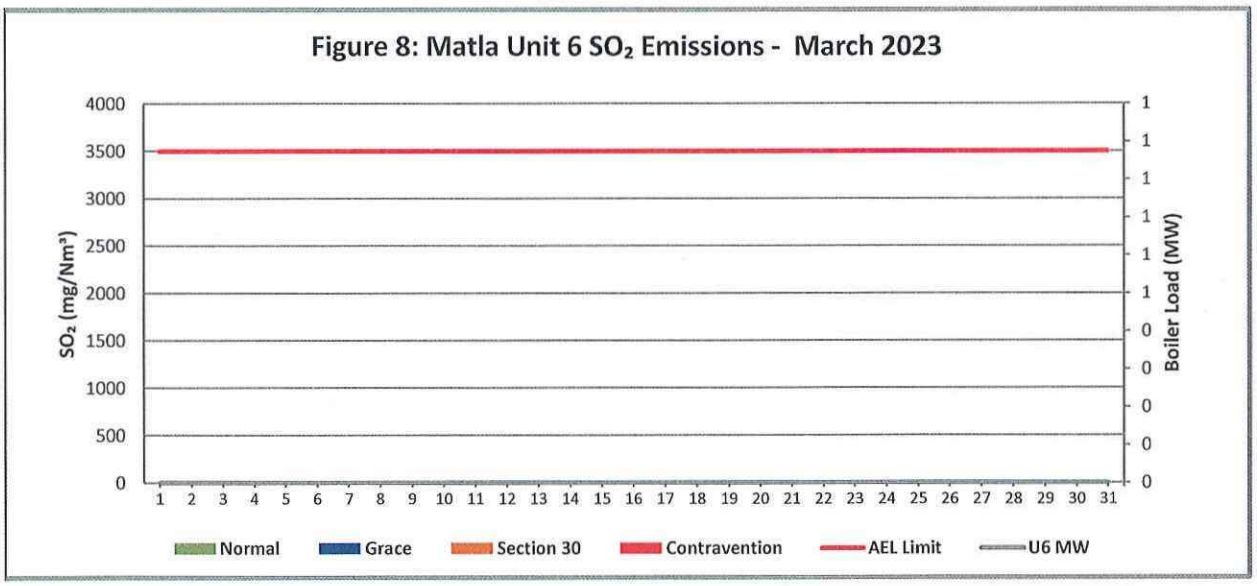


Figure 8: Matla Unit 6 SO2 Emissions - March 2023
SO2 (mg/Nm3)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

Figure 9: Matla South Stack NOx Emissions - March 2023

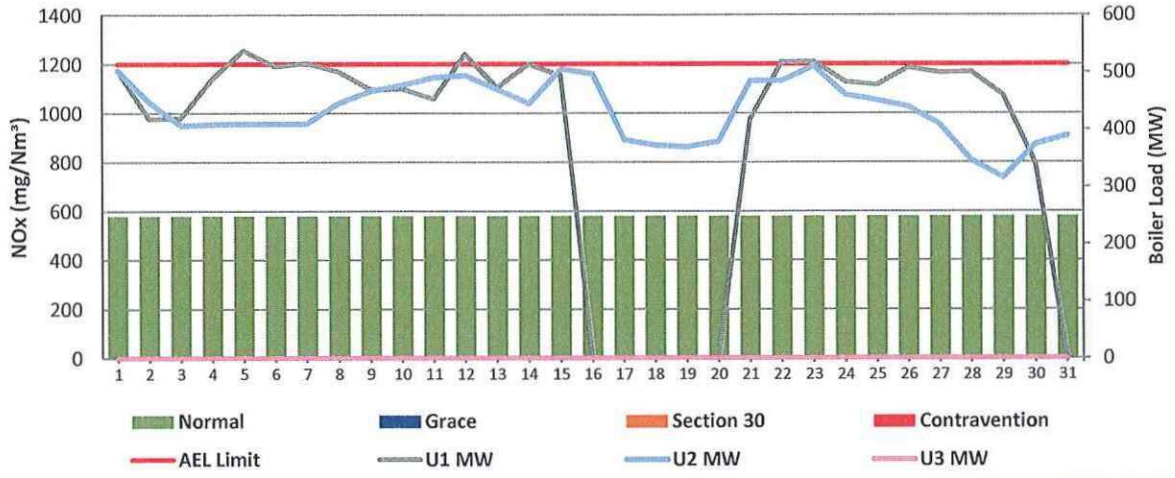


Figure 10: Matla Unit 4 NOx Emissions - March 2023

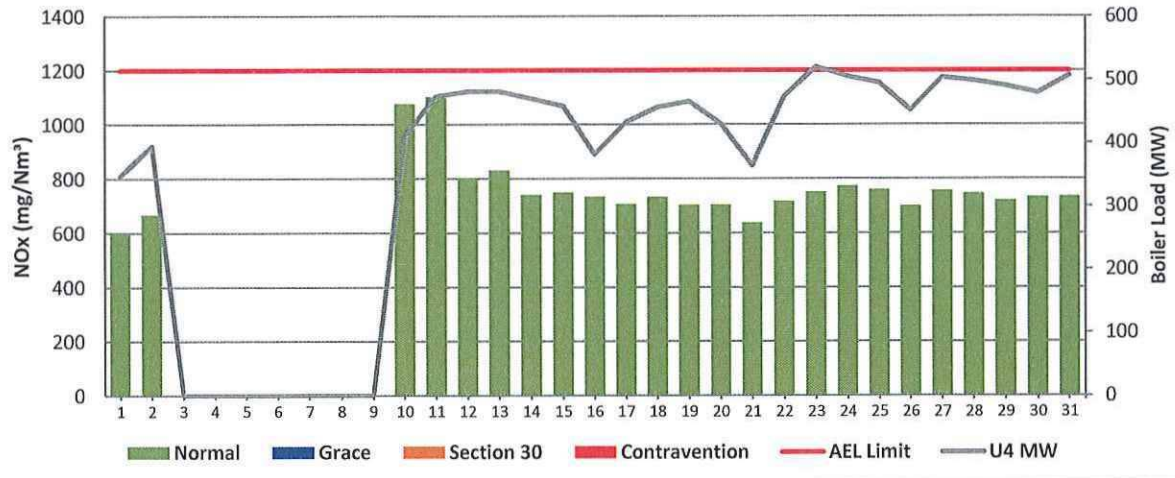


Figure 11: Matla Unit 5 NOx Emissions - March 2023

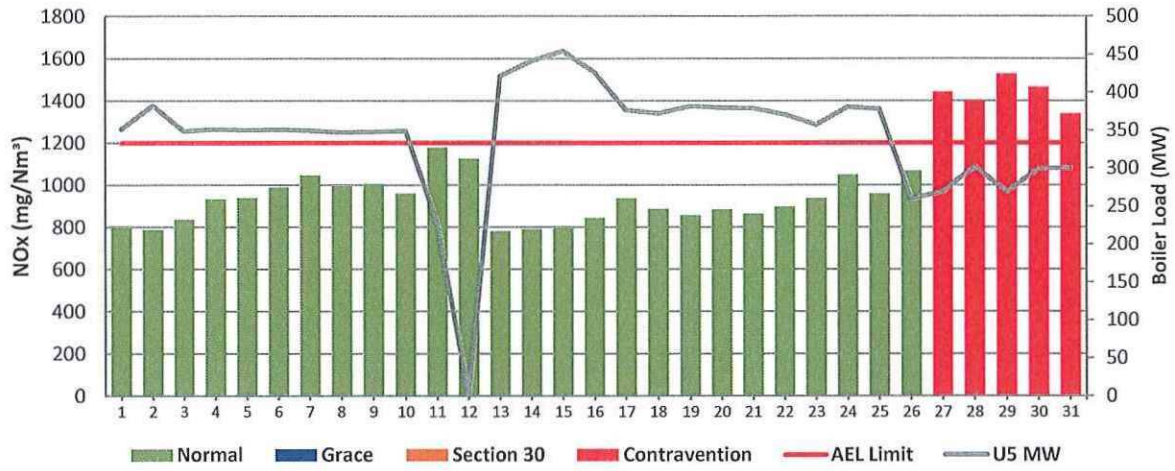
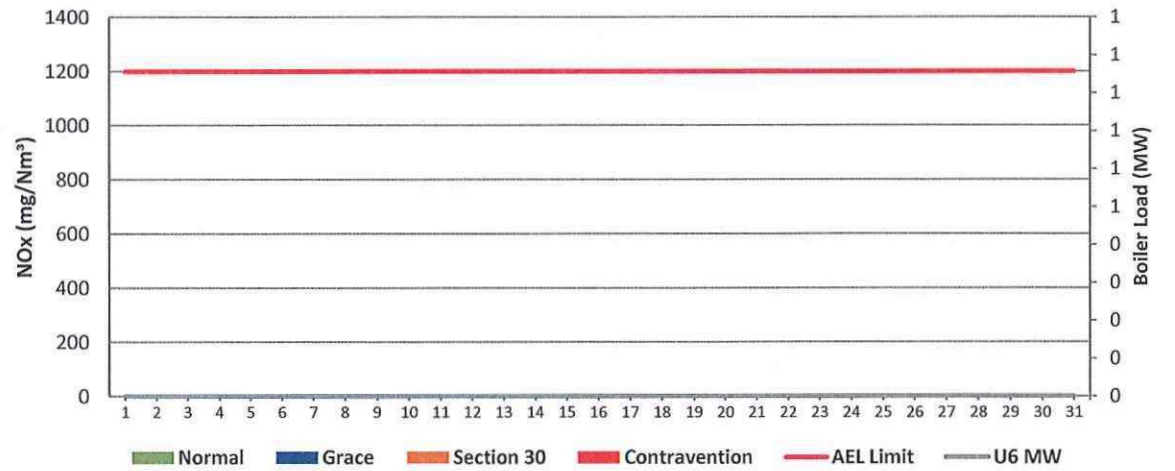


Figure 12: Matla Unit 6 NOx Emissions - March 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		Unit 1		Unit 1		no event	
Breaker Open (BO)			11:50 PM	2023/03/15	8:30 AM	2023/03/30	12:00 AM	2023/03/21
Draught Group (DG) Shut Down (SD)			10:45 PM	2023/03/16	5:25 AM	2023/03/31	12:00 AM	2023/03/22
BO to DG SD (duration)		DD:HH:MM	00:22:55	DD:HH:MM	00:20:55	DD:HH:MM	01:00:00	DD:HH:MM
Fires in time			12:45 AM	2023/03/21	9:00 PM	2023/04/02		
Synch. to Grid (or BC)			10:55 AM	2023/03/21	9:15 PM	2023/04/03		
Fires in to BC (duration)		DD:HH:MM	00:10:10	DD:HH:MM	01:00:15	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)			not > limit	not > limit	not > limit	not > limit		
Emissions below limit from BC (duration)		DD:HH:MM	n/a	DD:HH:MM	n/a	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 March-2023 in mg/Nm^3

[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 March 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 March 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	*(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*

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 Acceptable	Comments / Reference No.
4	01/03/2023 15/03/2023 21/03/2023	01/03/2023 15/03/2023 22/03/2023	Contravention incurred due to high hopper levels.	Repaired defects causing downtime.	No				Contravention
5	07/03/2023	11/03/2023	High hopper levels and damaged precipitators	Repaired damaged precipitators	No				Contravention

11 General

Gases on south stack are reported using parallel tests averages. Unit 4 and unit 5 incurred contraventions. Unit 4 correlation curve expired.

04-05-2023
Boiler Engineering Date

04.05.23
Environmental Department Date

08/05/2023
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
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	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