



Generation

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AND

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Total number of pages:
13

Total number of annexes:

MATLA POWER STATION

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



BOILER ENGINEERING MANAGER


ENVIRONMENTAL MANAGER
pp 

ENGINEERING MANAGER

26/07/2024

DATE

2024/07/29

DATE

2024/08/13

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 Nov-2023
	Coal	Tons	1 475 000	986 062
	Fuel Oil	Tons	3 500	1 127
Production Rates	Product / By-Product Name	Units	Max Production Capacity Permitted	Indicative Production Rate Nov-2023
	Energy	GWh	2 657	1 665
	Ash	Tons	471 000	272 843
	RE PM	kg/MWh	not specified	0.943

Note: Maximum energy rate is as per the maximum capacity stated in the AEL: [3 690 MW] x 24 hrs x days in Month/1000 to convert to GWh

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.8-1.1	1.00
Ash Content	%	21-40	27.67

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 Nov-2023
South	Electro Static Precipators (ESP)	99.189%
Unit 4	Electro Static Precipators (ESP)	99.109%
Unit 5	Electro Static Precipators (ESP)	99.616%
Unit 6	Electro Static Precipators (ESP)	99.779%

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	93.2	94.3	94.3	88.7
Unit 4	94.1	99.5	99.7	99.8
Unit 5	100.0	99.7	99.9	100.0
Unit 6	99.3	99.6	99.7	99.9

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM	SO ₂	NOx
Unit 1	164.3	1 227.5	404.1
Unit 2	419.7	3 501.5	1 198.4
Unit 3	359.8	2 477.7	842.7
Unit 4	354.8	3 566.7	1 240.7
Unit 5	174.4	2 786.8	914.5
Unit 6	96.8	2 893.9	825.6
SUM	1 569.9	16 454.2	5 426.0

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
South	12	10	0	8	18	261.4
Unit 4	17	7	0	2	9	234.0
Unit 5	17	8	1	4	13	119.8
Unit 6	26	4	0	0	4	65.9
SUM	72	29	1	14	44	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
South	30	0	0	0	0	1 808.7
Unit 4	27	0	0	0	0	2 306.7
Unit 5	30	0	0	0	0	1 924.9
Unit 6	30	0	0	0	0	1 963.8
SUM	117	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
South	30	0	0	0	0	614.7
Unit 4	27	0	0	0	0	803.7
Unit 5	30	0	0	0	0	631.5
Unit 6	30	0	0	0	0	560.1
SUM	117	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 - November 2023

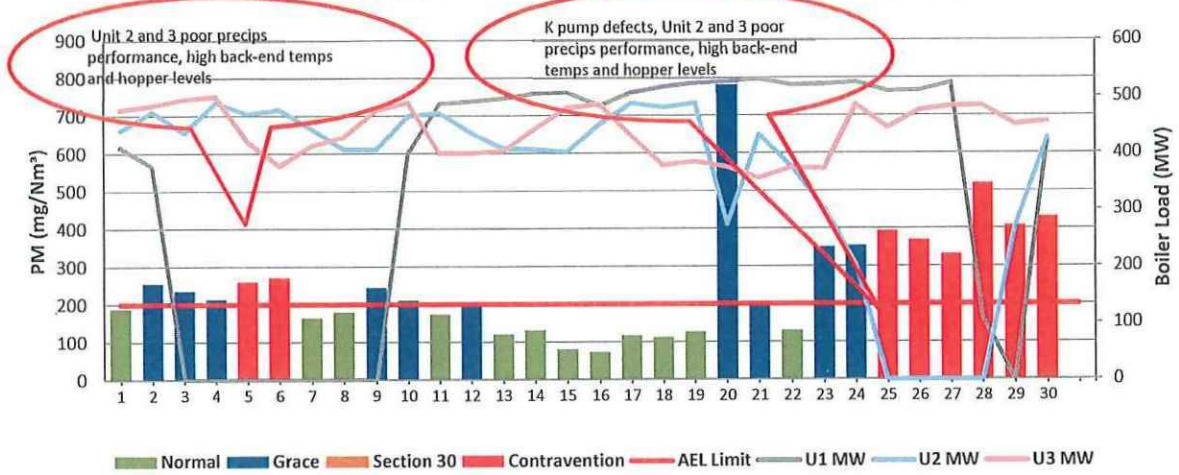


Figure 2: Matla Unit 4 PM Emissions - November 2023

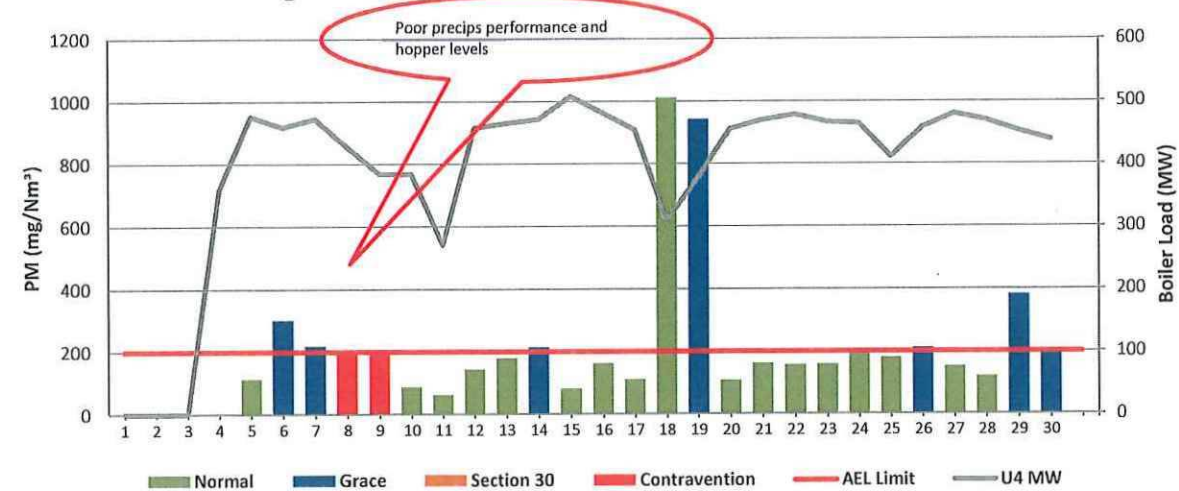


Figure 3: Matla Unit 5 PM Emissions - November 2023

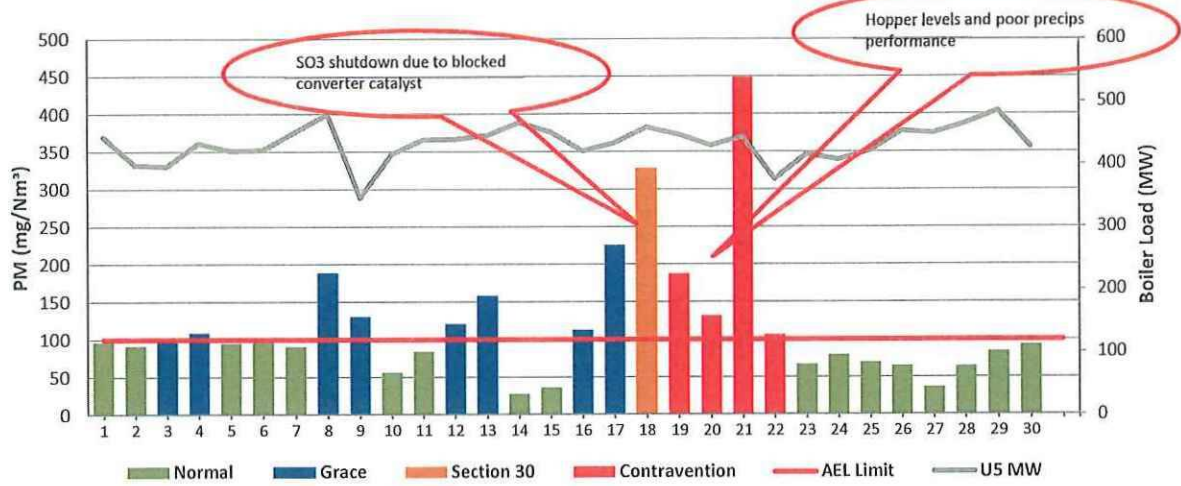


Figure 4: Matla Unit 6 PM Emissions - November 2023

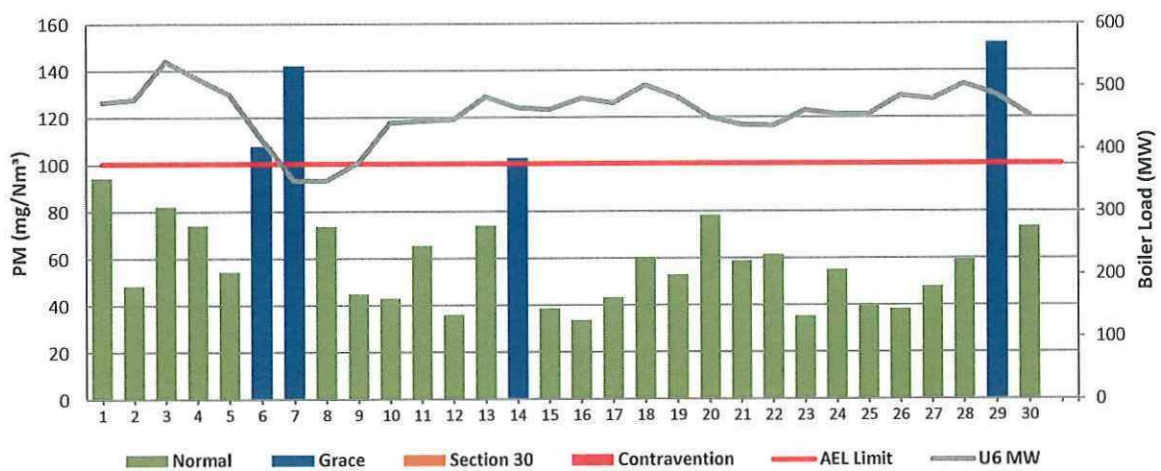


Figure 5: Matla South Stack SO₂ Emissions - November 2023

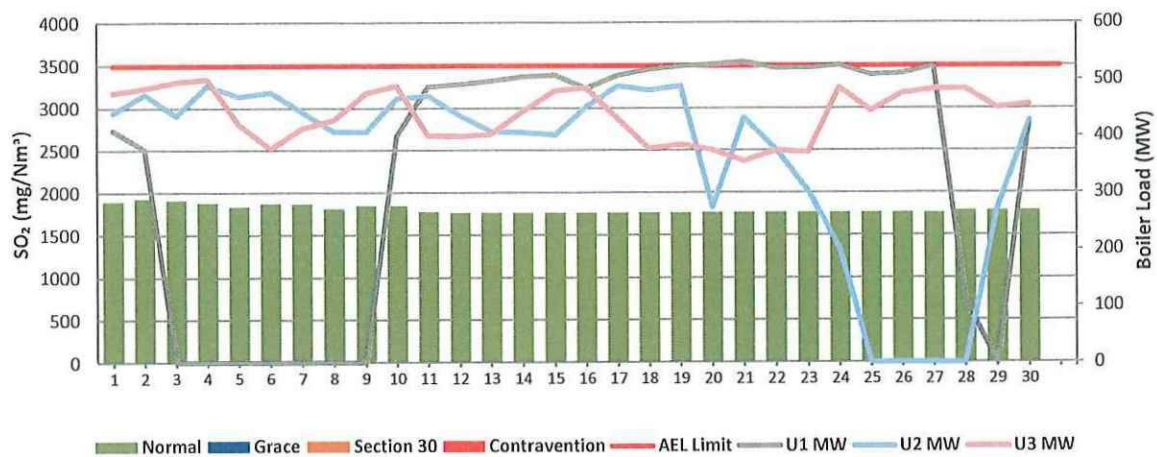


Figure 6: Matla Unit 4 SO₂ Emissions - November 2023

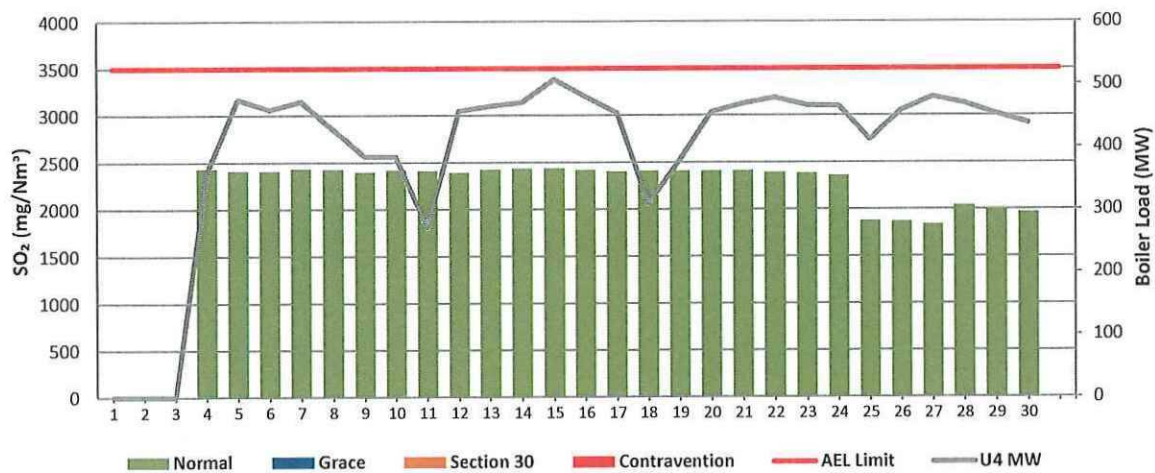


Figure 7: Matla Unit 5 SO₂ Emissions - November 2023

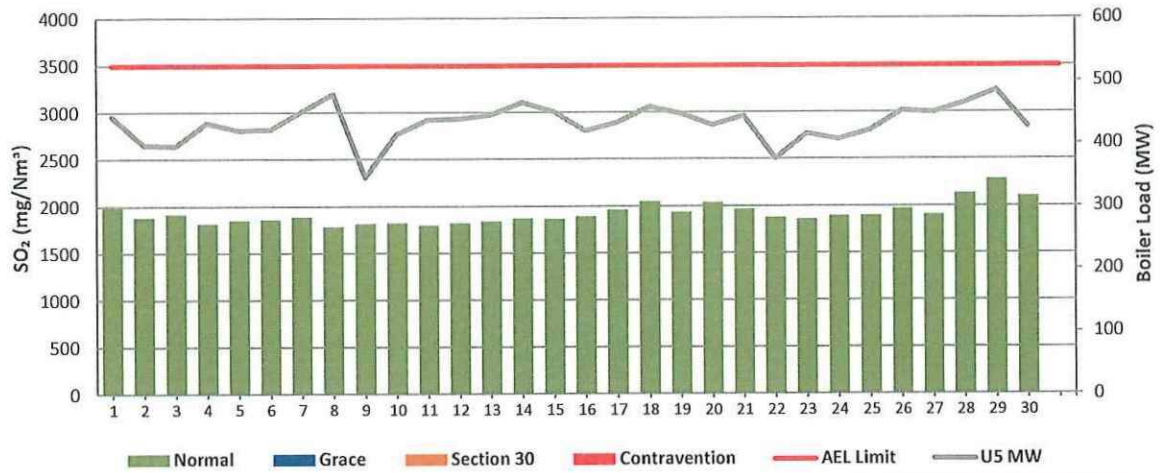


Figure 8: Matla Unit 6 SO₂ Emissions - November 2023

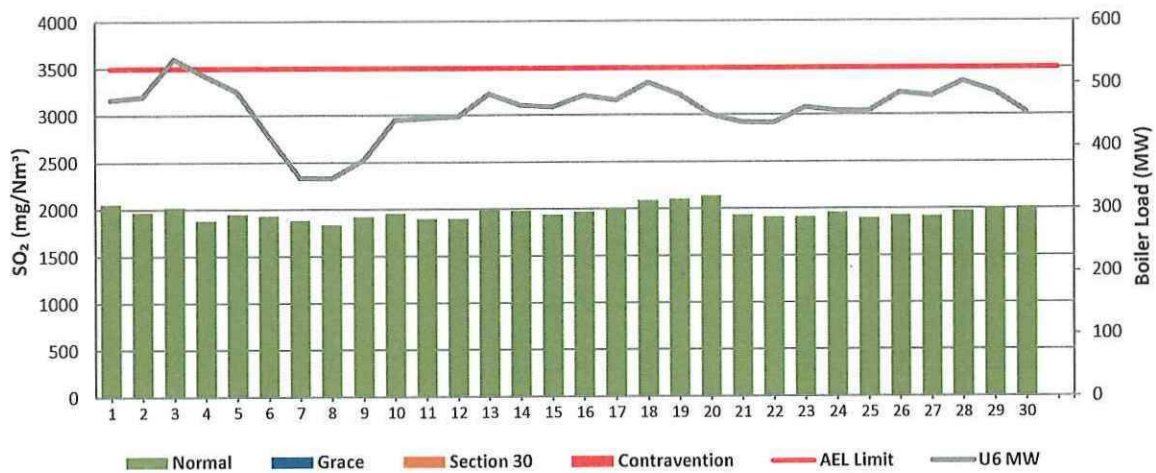


Figure 9: Matla South Stack NOx Emissions - November 2023

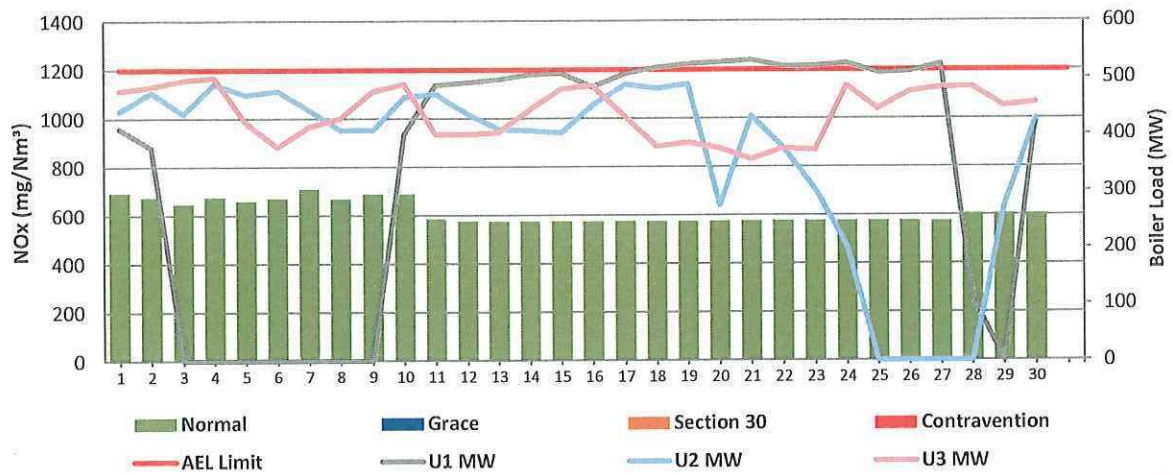


Figure 10: Matla Unit 4 NOx Emissions - November 2023

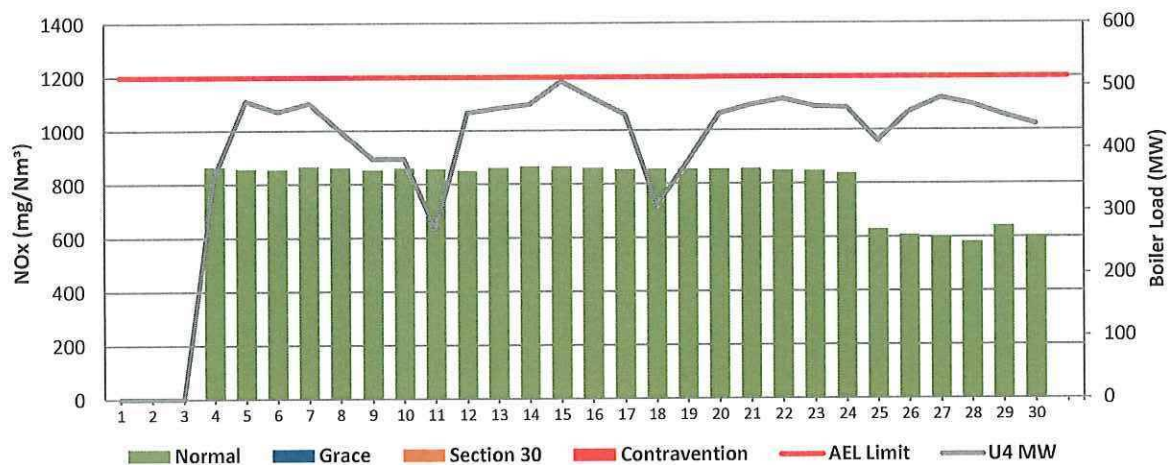


Figure 11: Matla Unit 5 NOx Emissions - November 2023

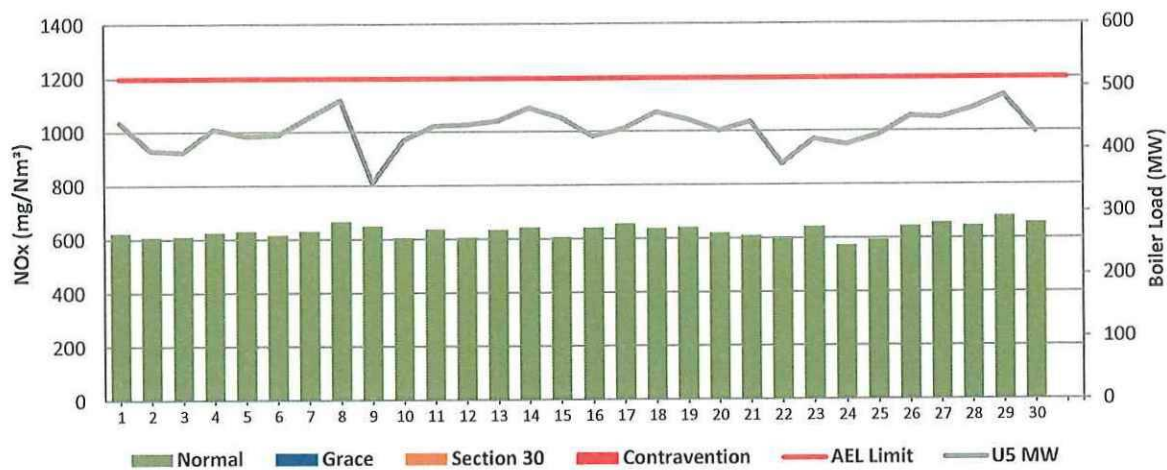
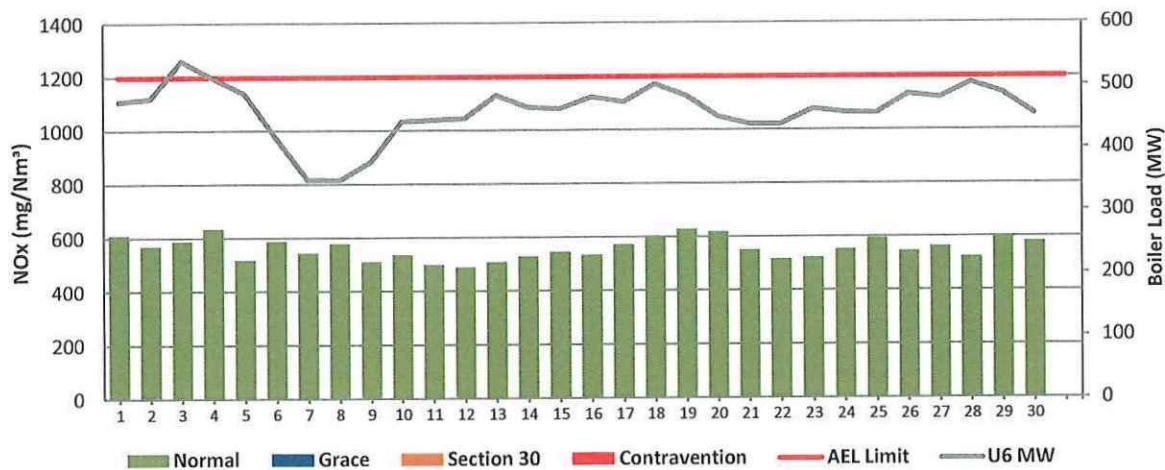


Figure 12: Matla Unit 6 NOx Emissions - November 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 1		Unit 2		no event	
Breaker Open (BO)	12:15 pm	2023/11/02	11:30 pm	2023/11/28	2:45 pm	2023/11/25		
Draught Group (DG) Shut Down (SD)	6:10 am	2023/11/03	10:10 am	2023/11/29	6:10 am	2023/11/27		
BO to DG SD (duration)	00:17:55	DD:HH:MM	00:10:40	DD:HH:MM	01:15:25	DD:HH:MM		DD:HH:MM
Fires in time	9:35 pm	2023/11/08	4:45 pm	2023/11/30	7:40 pm	2023/11/29		
Synch. to Grid (or BC)	2:20 am	2023/11/10	2:35 am	2023/12/01	5:20 am	2023/11/30		
Fires in to BC (duration)	01:04:45	DD:HH:MM	00:09:50	DD:HH:MM	00:09:40	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

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	7:40 pm	2023/11/03						
Synch. to Grid (or BC)	5:05 am	2023/11/04						
Fires in to BC (duration)	00:09:25	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)								
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 November-2023 in mg/Nm³

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

8 EMERGENCY GENERATION

Table 8. Emergency Generation per unit for the month of November 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						

Table 9. Complaints for the month of November 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
<i>(insert name of affected)</i>	<i>(Insert root cause for incident)</i>	<i>(Insert emissions associated with incident)</i>	<i>(Insert dispersion model information where applicable)</i>	<i>(insert mitigation measures taken)</i>	<i>(insert date of implementation of</i>

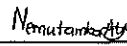
To be completed in the case of a S30 incident or a legal contravention:

Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledgment	Date DEA Acceptable	Comments / Reference No.
SS	04/11/2023	06/11/2023	Unit 2 and 3 poor precips performance due to high precips flue gas temperatures	Biased unit drought group, cleared hopper levels	No				Legal contravention
SS	25/11/2023	06/12/2023	High hopper levels, poor K-pump performance and defects.	Repaired K-pump and cleared hopper levels	No				Legal contravention
4	08/11/2023	09/11/2023	High hopper levels, poor precips performance and internally damaged precips.	Hired, compressors and repairing the defective compressors	No				Legal contravention
5	18/11/2023	18/11/2023	partially blocked SO3 catalyst.	Hired, compressors and repairing the defective compressors	Yes				S30
5	19/11/2023	21/11/2023	High hopper levels, poor precips performance, poor coal qualities and high precips flue gas temperatures.	Coal qualities improved and cleared hopper levels	No				Legal contravention

11 General

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Mzwandile Gcaleka  19/07/2024
Boiler Engineering Date

Lutendo Murovhi  19/07/2024
Environmental Department Date

 2024/08/27
General Manager Date

Compiled by Boiler Engineering Department

For Department of Forestry Fisheries and Environmental

Copies Eskom Environmental Management

Group Technology Engineering

Matla Power Station

ESP & SO₃ System Engineer

Chief Air Pollution Control Officer

D Herbst
B Mccourt

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