



Generation

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Date: 2024/01/24

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MATLA POWER STATION

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



BOILER ENGINEERING MANAGER

25/01/2024
DATE



ENVIRONMENTAL MANAGER

2024/01/25
DATE



ENGINEERING MANAGER

25/01/2024
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 Dec-2023
	Coal	Tons	1 475 000	895 189
	Fuel Oil	Tons	3 500	1 084

Production Rates	Product / By-Product Name	Units	Max Production Capacity Permitted	Indicative Production Rate Dec-2023
	Energy	GWh	2 745	1 616
	Ash	Tons	471 000	279 388
	RE PM	kg/MWh	not specified	0.977

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	31.21

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: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Dec-2023
South	Electro Static Precipators (ESP)	99.162%
Unit 4	Electro Static Precipators (ESP)	99.161%
Unit 5	Electro Static Precipators (ESP)	99.729%
Unit 6	Electro Static Precipators (ESP)	99.742%

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	86.0	96.7	96.7	96.7
Unit 4	99.9	100.0	100.0	100.0
Unit 5	92.3	99.6	99.6	99.6
Unit 6	99.0	99.7	99.7	99.7

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM	SO ₂	NO _x
Unit 1	224.7	2 229.9	534.7
Unit 2	279.8	2 182.8	523.4
Unit 3	408.7	3 602.4	863.8
Unit 4	420.9	4 036.4	1 124.3
Unit 5	136.0	3 242.0	912.0
Unit 6	108.7	2 500.9	650.8
SUM	1 578.9	17 794.5	4 609.1

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
South	14	5	0	12	17	278.4
Unit 4	19	12	0	0	12	224.6
Unit 5	23	6	0	2	8	92.6
Unit 6	18	7	0	1	8	86.4
SUM	74	30	0	15	45	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
South	31	0	0	0	0	2 479.2
Unit 4	31	0	0	0	0	2 172.5
Unit 5	31	0	0	0	0	2 227.5
Unit 6	27	0	0	0	0	2 043.8
SUM	120	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
South	31	0	0	0	0	594.5
Unit 4	31	0	0	0	0	604.3
Unit 5	31	0	0	0	0	626.7
Unit 6	27	0	0	0	0	530.5
SUM	120	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 - December 2023

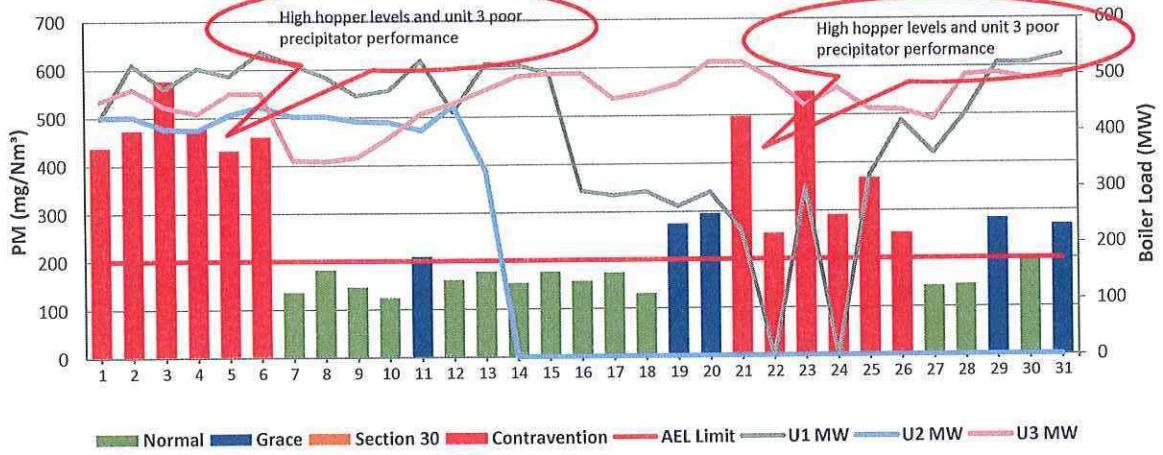


Figure 2: Matla Unit 4 PM Emissions - December 2023

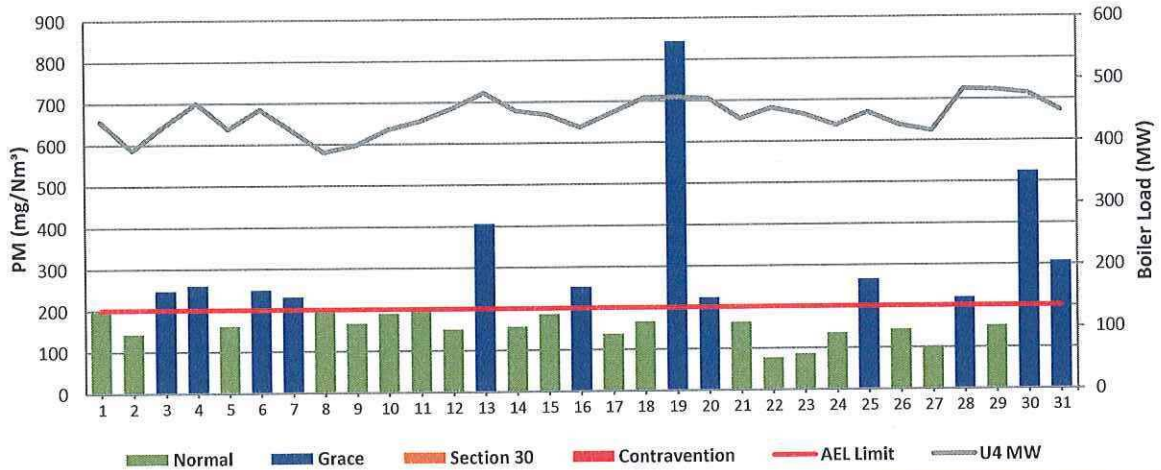


Figure 3: Matla Unit 5 PM Emissions - December 2023

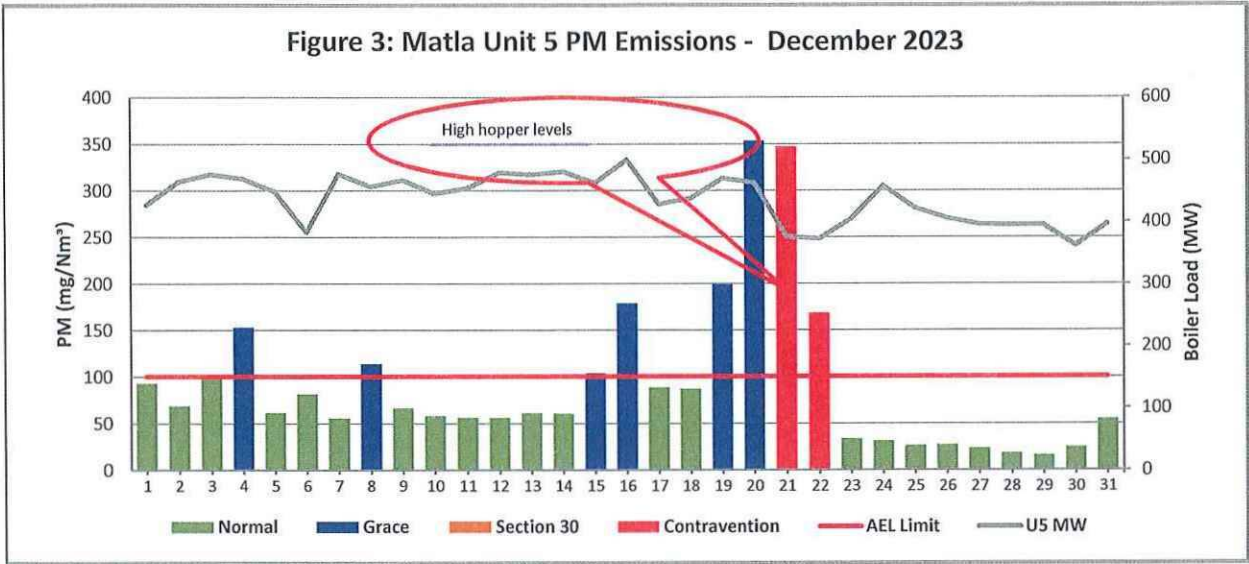


Figure 4: Matla Unit 6 PM Emissions - December 2023

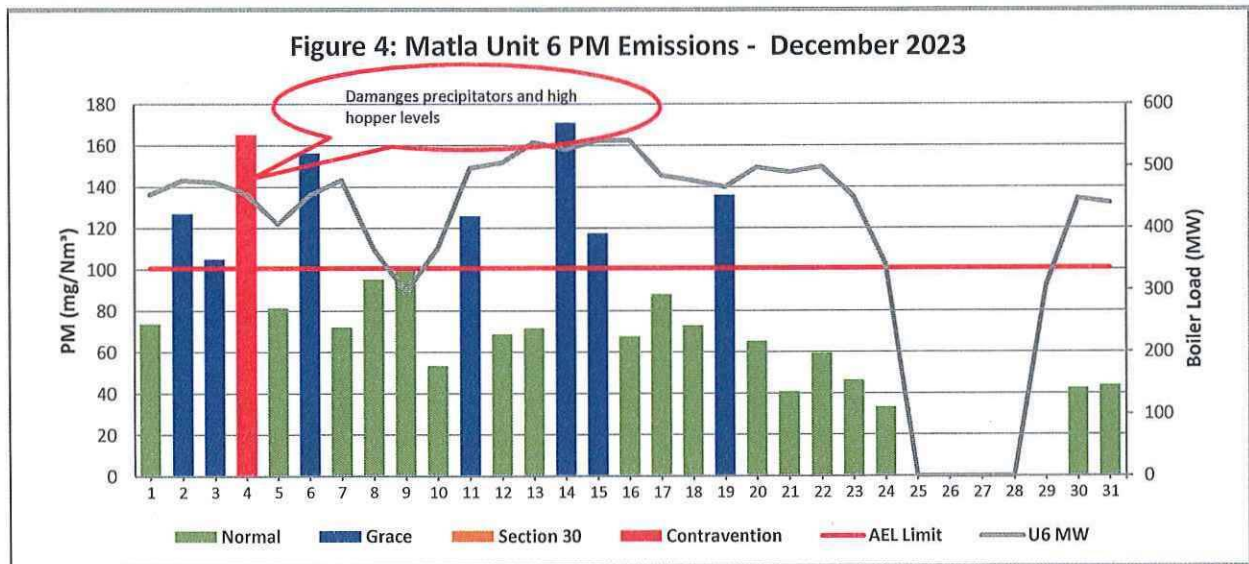


Figure 5: Matla South Stack SO₂ Emissions - December 2023

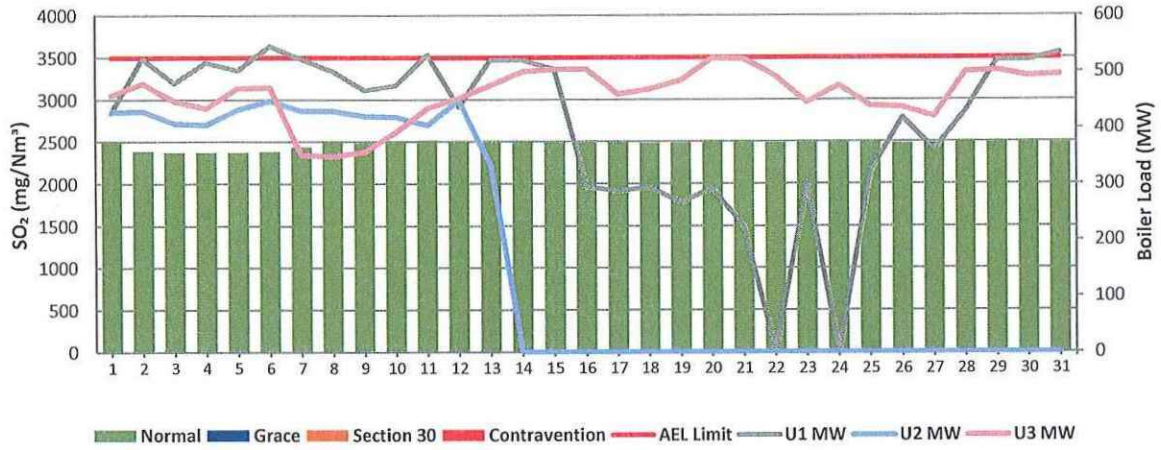


Figure 6: Matla Unit 4 SO₂ Emissions - December 2023

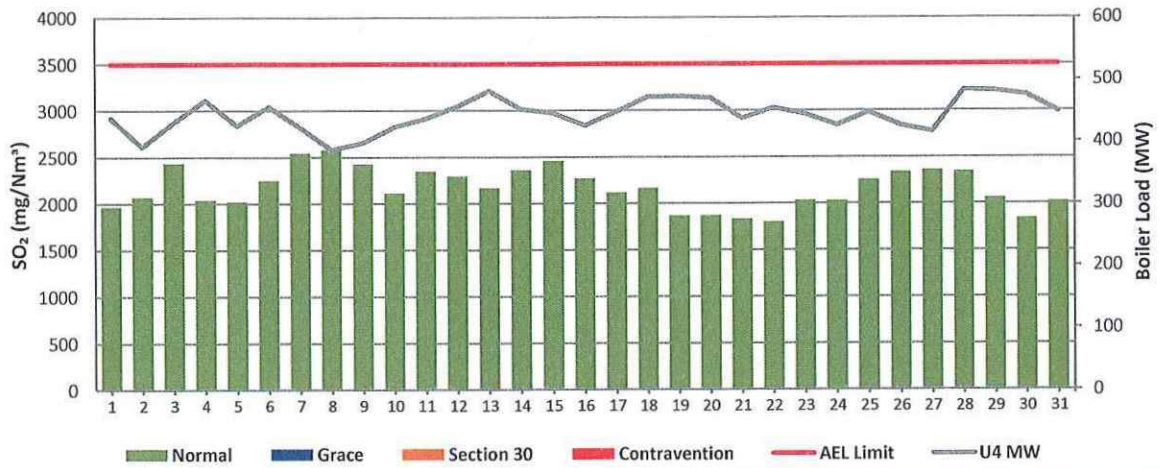


Figure 7: Matla Unit 5 SO₂ Emissions - December 2023

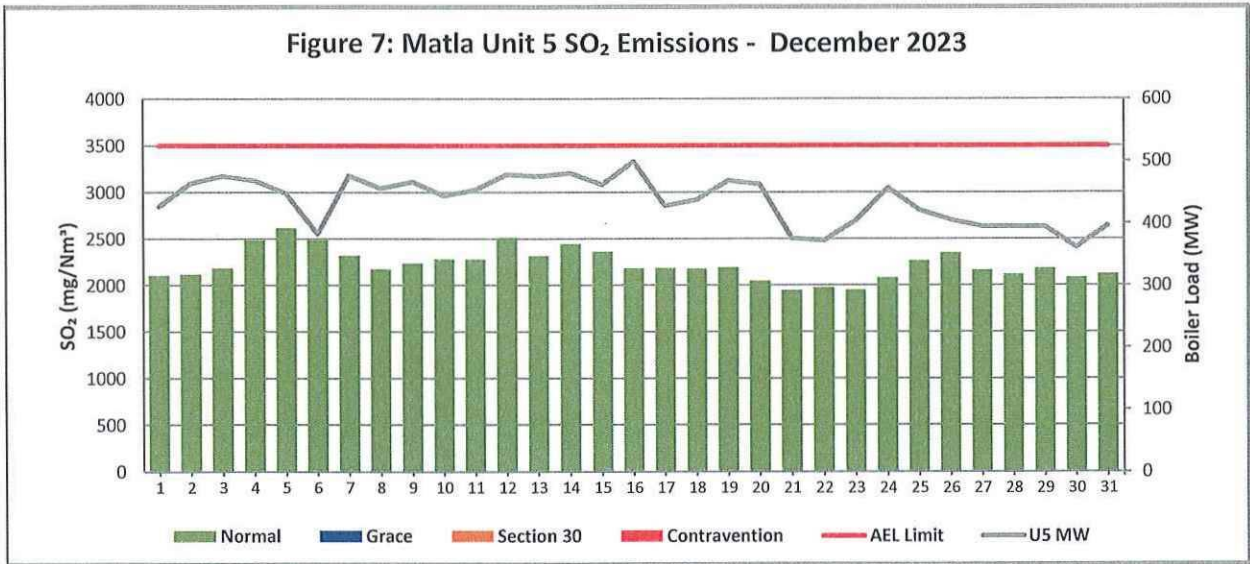


Figure 8: Matla Unit 6 SO₂ Emissions - December 2023

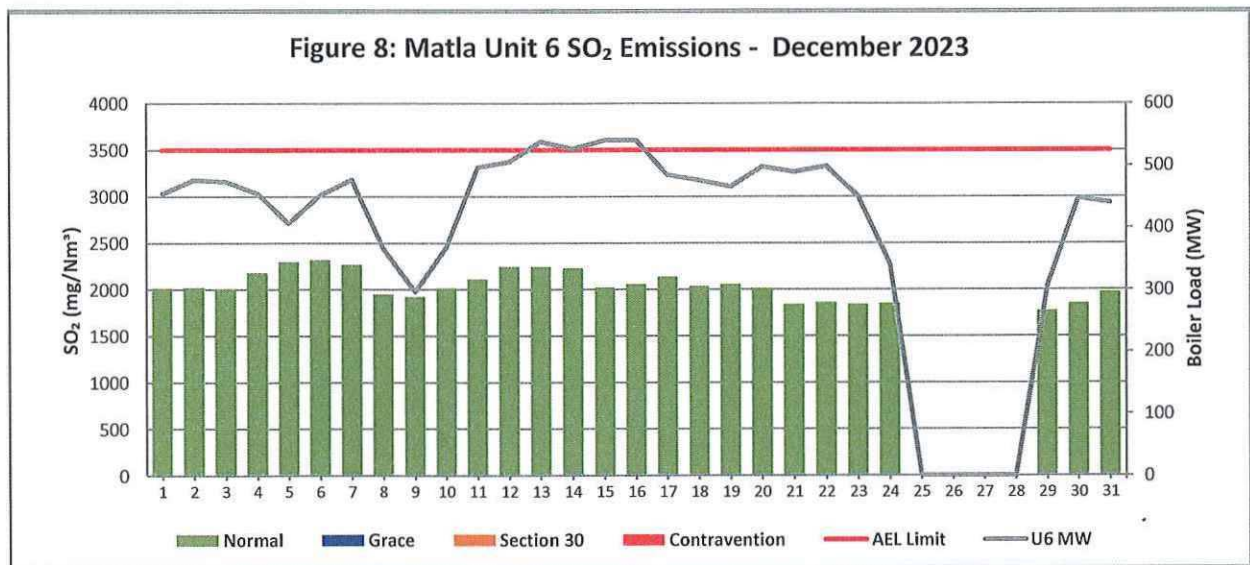


Figure 9: Matla South Stack NOx Emissions - December 2023

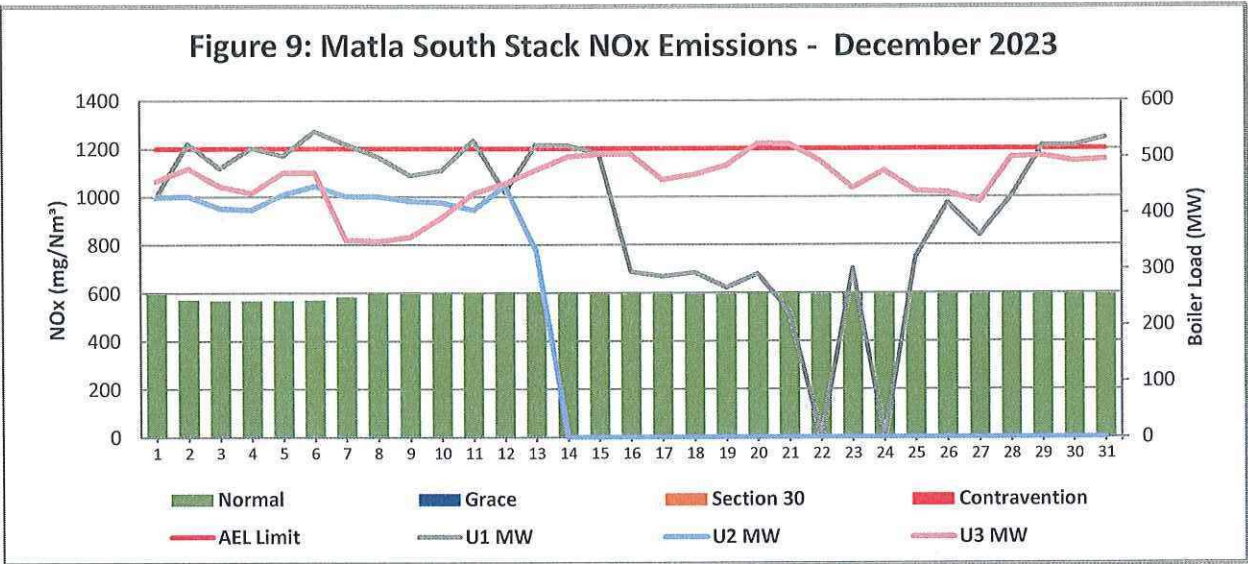


Figure 10: Matla Unit 4 NOx Emissions - December 2023

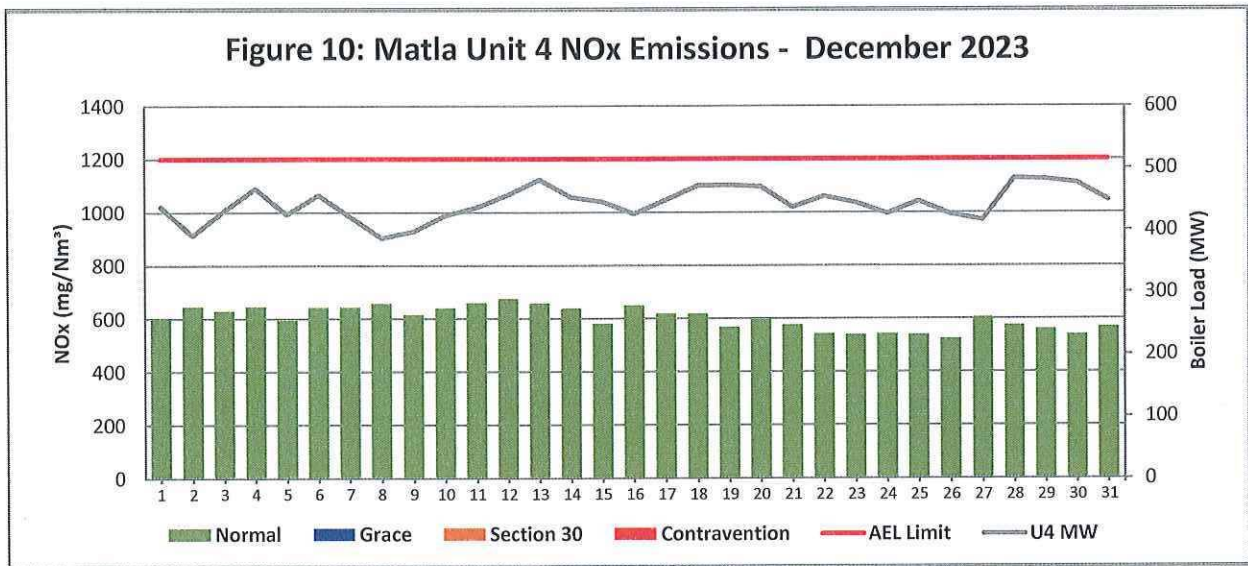


Figure 11: Matla Unit 5 NOx Emissions - December 2023

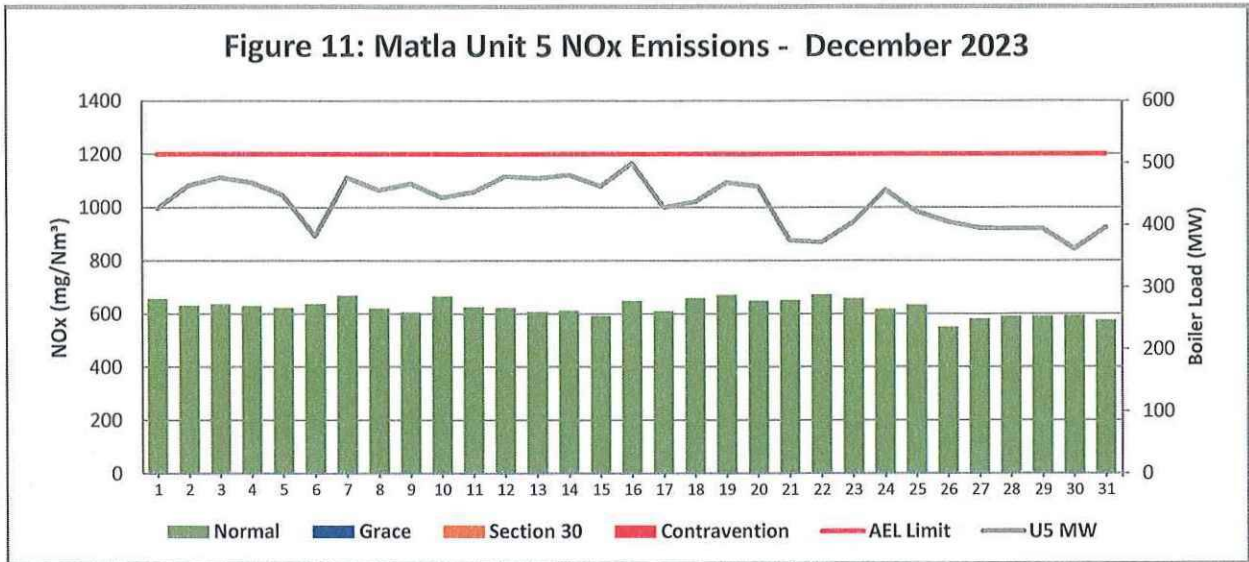
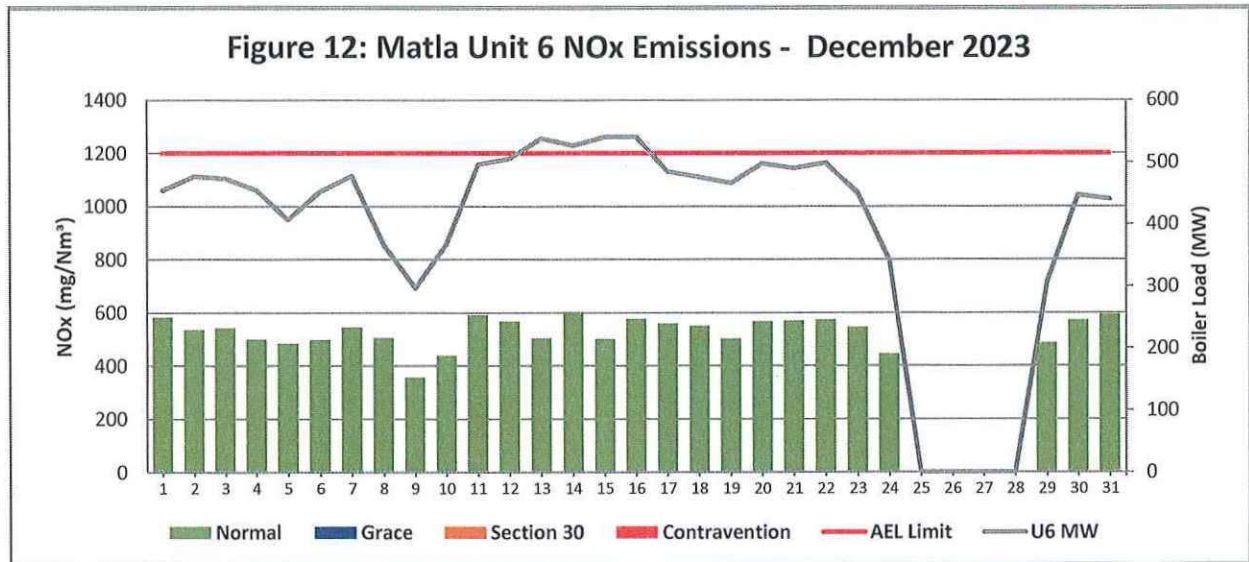


Figure 12: Matla Unit 6 NOx Emissions - December 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

South Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>Unit 1</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)			<i>1:10 am</i>	<i>2023/12/21</i>	<i>BO previously</i>	<i>BO previously</i>	<i>2:30 am</i>	<i>2023/12/13</i>
Draught Group (DG) Shut Down (SD)			<i>3:25 am</i>	<i>2023/12/22</i>	<i>n/a</i>	<i>n/a</i>	<i>11:10 am</i>	<i>2023/12/14</i>
BO to DG SD (duration)		DD:HH:MM	<i>01:02:15</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>01:08:40</i>	DD:HH:MM
Fires in time			<i>11:10 pm</i>	<i>2023/12/22</i>				
Synch. to Grid (or BC)			<i>3:20 pm</i>	<i>2023/12/25</i>				
Fires in to BC (duration)		DD:HH:MM	<i>02:16:10</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)			<i>not > limit</i>	<i>not > limit</i>				
Emissions below limit from BC (duration)		DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack ...cont.	<i>Event 5</i>		<i>Event 6</i>		<i>Event 7</i>		<i>Event 8</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
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 December-2023 in mg/Nm³


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

11 General

South stack QAL 2 test completed. To be implemented in January 2024
Unit 5 and 6 correlation expired and testing scheduled for 6/02/2024


Boiler Engineering 25/01/2024
Date


Environmental Department Date


General Manager 25/01/2024
Date

Compiled by: Boiler Engineering Department

ESP & SO₂ System Engineer

For: Department of Environmental Affairs and Tourism

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Matla Power Station:

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