



Generation

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AND

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Total number of pages:
16

Total number of annexes:

MATLA POWER STATION

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

BOILER ENGINEERING MANAGER

DATE

012 ENVIRONMENTAL MANAGER

DATE

ENGINEERING MANAGER

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	Maximum Permitted Consumption Rate	Consumption Rate Dec-2019
	Coal	Tons	1 475 000	1 139 540
Fuel Oil	Tons	2 500	937	

Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Dec-2019
	Energy	GWh	2 567	1 470
Ash	Tons	471 000	290 925	
RE PM	kg/MWh	not specified	0.922	

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	
Sulphur Content	%	0.8-1.1	1.00
Ash Content	%	21-40	25.53

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

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Dec-2019
South	<i>Electro Static Precipators (ESP)</i>	<i>99.381%</i>
Unit 4	<i>Electro Static Precipators (ESP)</i>	<i>99.565%</i>
Unit 5	<i>Electro Static Precipators (ESP)</i>	<i>99.538%</i>
Unit 6	<i>Electro Static Precipators (ESP)</i>	<i>99.666%</i>

Note: Abatement plant does not have bypass mode operation, hence plant 100% Utilised.

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	PM	SO ₂	NO	CO ₂	O ₂
South	<i>66.1</i>	<i>90.3</i>	<i>90.7</i>		<i>90.2</i>
Unit 4	<i>78.9</i>	<i>99.6</i>	<i>99.6</i>		<i>99.6</i>
Unit 5	<i>78.9</i>	<i>86.0</i>	<i>86.3</i>		<i>86.6</i>
Unit 6	<i>89.9</i>	<i>100.0</i>	<i>100.0</i>		<i>93.7</i>

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of December-2019

Associated Unit/Stack	PM	SO _x	NO _x	CO ₂
Unit 1	289.0	2 914.0	1 372.5	
Unit 2	311.5	3 039.1	1 448.0	
Unit 3	235.4	2 016.9	1 106.9	
Unit 4	179.6	1 458.0	1 039.9	
Unit 5	196.7	1 974.9	728.8	
Unit 6	143.5	2 013.3	793.9	
SUM	1 355.7	13 416.1	6 490.0	

Table 6.2: Operating days in compliance to PM AEL Limit - December 2019

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm ³)
South	16	15	0	0	15	193.8
Unit 4	8	8	4	0	12	206.7
Unit 5	8	17	0	0	17	200.8
Unit 6	16	12	0	0	12	123.2
SUM	48	52	4	0	56	

Table 6.3: Operating days in compliance to SOx AEL Limit - December 2019

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SOx (mg/Nm ³)
South	31	0	0	0	0	1 911.5
Unit 4	21	0	0	0	0	1 457.1
Unit 5	26	0	0	0	0	1 762.9
Unit 6	28	0	0	0	0	1 624.9
SUM	106	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - December 2019

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NOx (mg/Nm ³)
South	29	2	0	0	2	907.4
Unit 4	21	0	0	0	0	1 038.3
Unit 5	26	0	0	0	0	622.0
Unit 6	28	0	0	0	0	621.2
SUM	104	2	0	0	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
Contra-vention		Emissions above ELV but outside grace or S30 incident conditions

Figure 1: Matla South Stack PM Emissions - December 2019

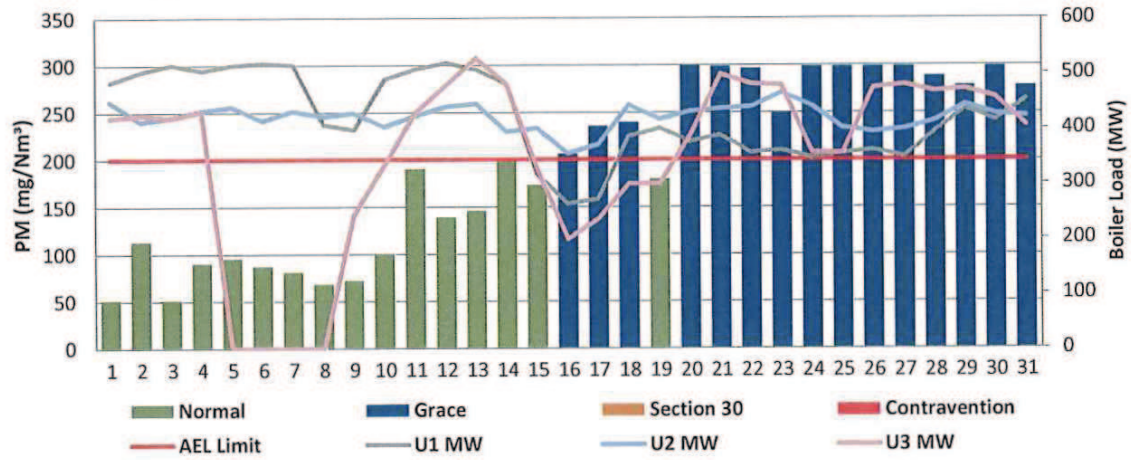


Figure 2: Matla Unit 4 PM Emissions - December 2019

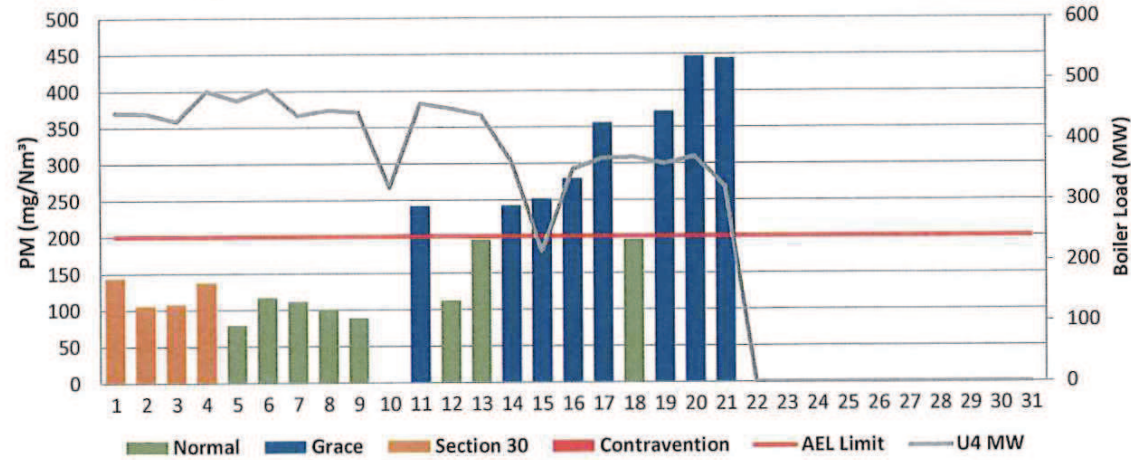


Figure 3: Matla Unit 5 PM Emissions - December 2019

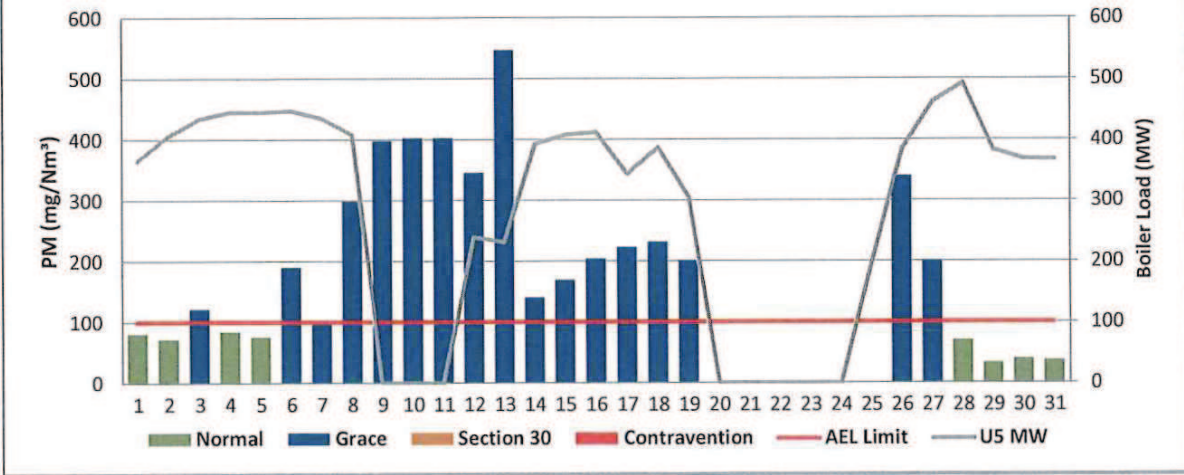


Figure 4: Matla Unit 6 PM Emissions - December 2019

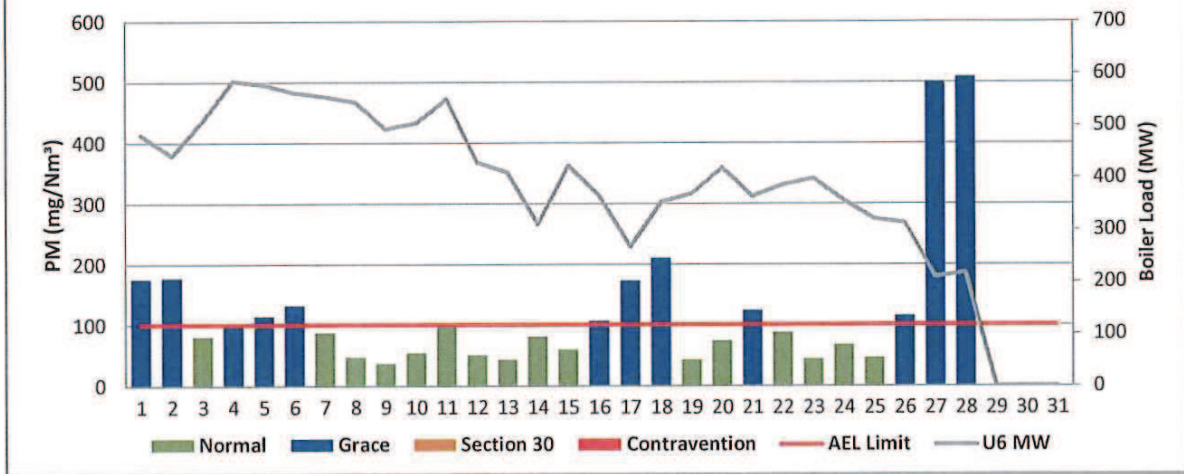


Figure 5: Matla South Stack SOx Emissions - December 2019

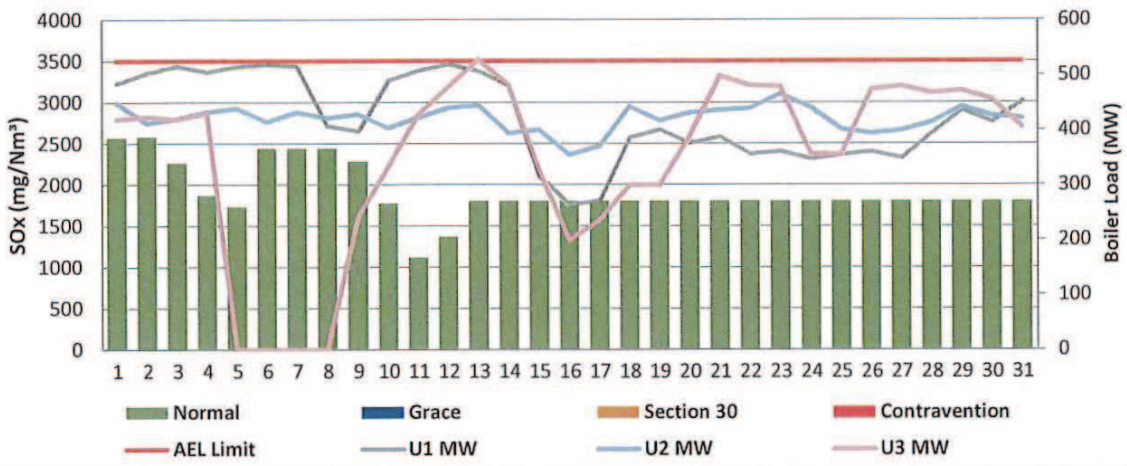


Figure 6: Matla Unit 4 SOx Emissions - December 2019

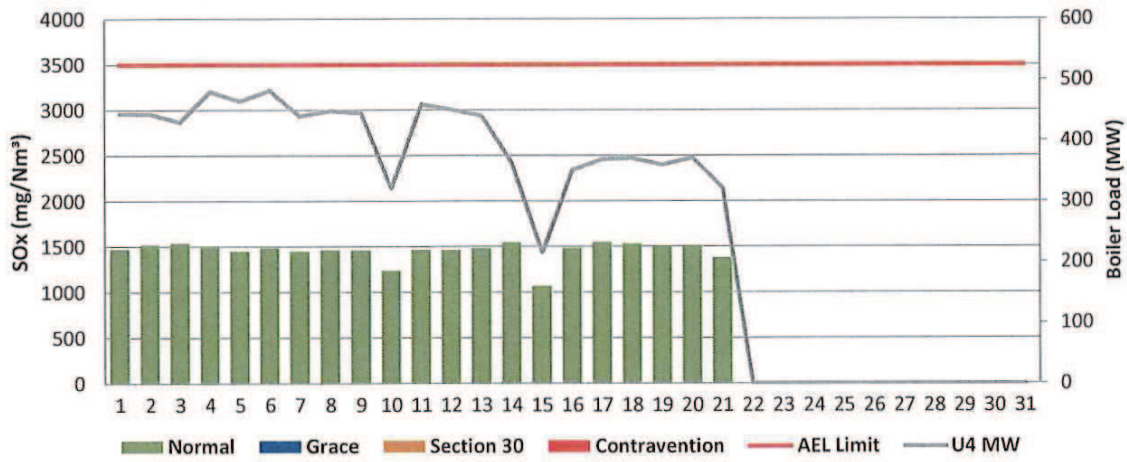


Figure 7: Matla Unit 5 SOx Emissions - December 2019

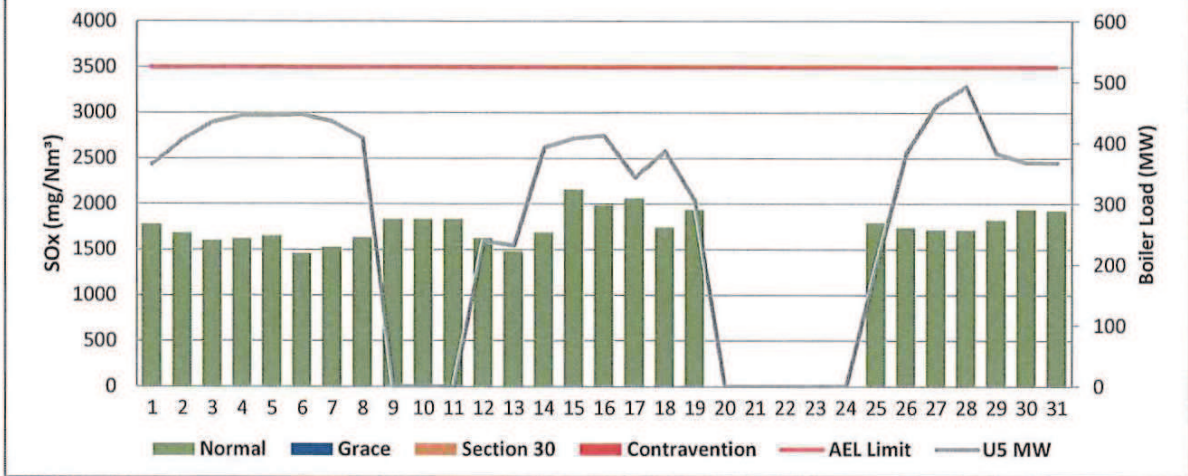


Figure 8: Matla Unit 6 SOx Emissions - December 2019

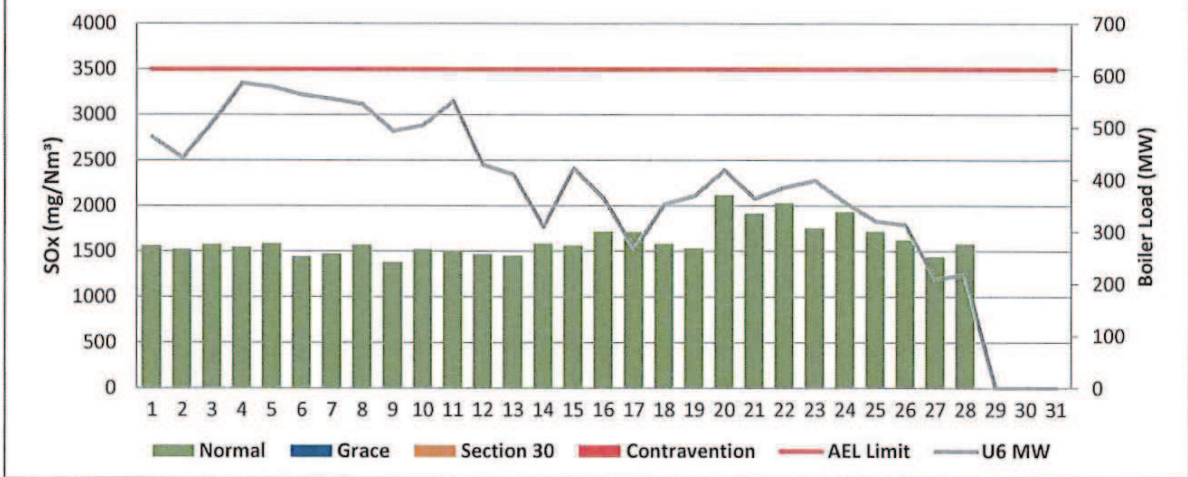


Figure 9: Matla South Stack NOx Emissions - December 2019

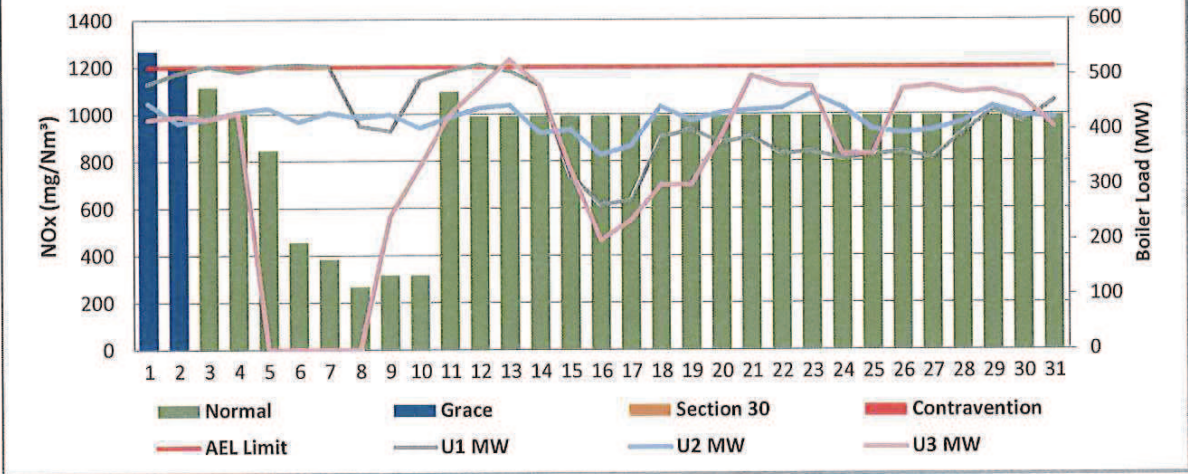


Figure 10: Matla Unit 4 NOx Emissions - December 2019

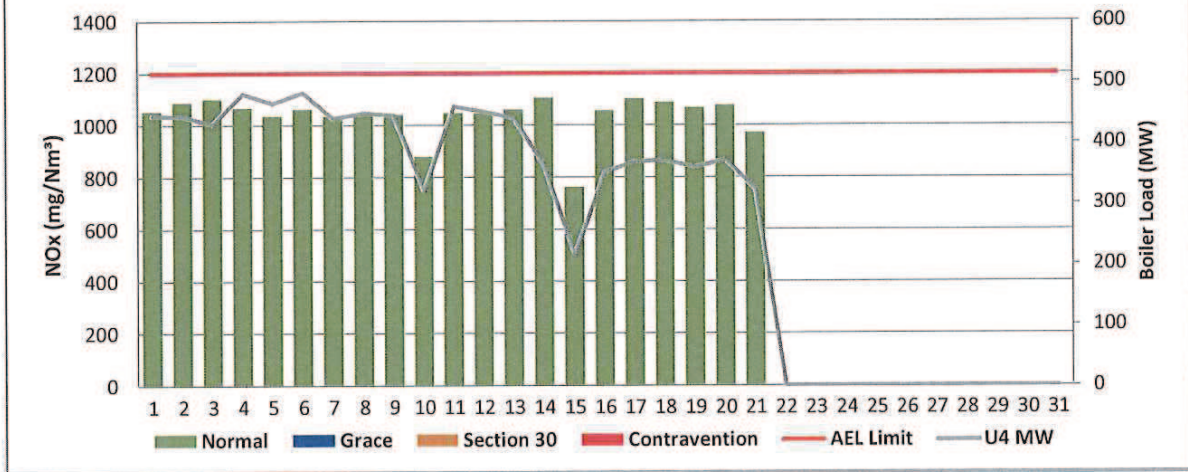


Figure 11: Matla Unit 5 NOx Emissions - December 2019

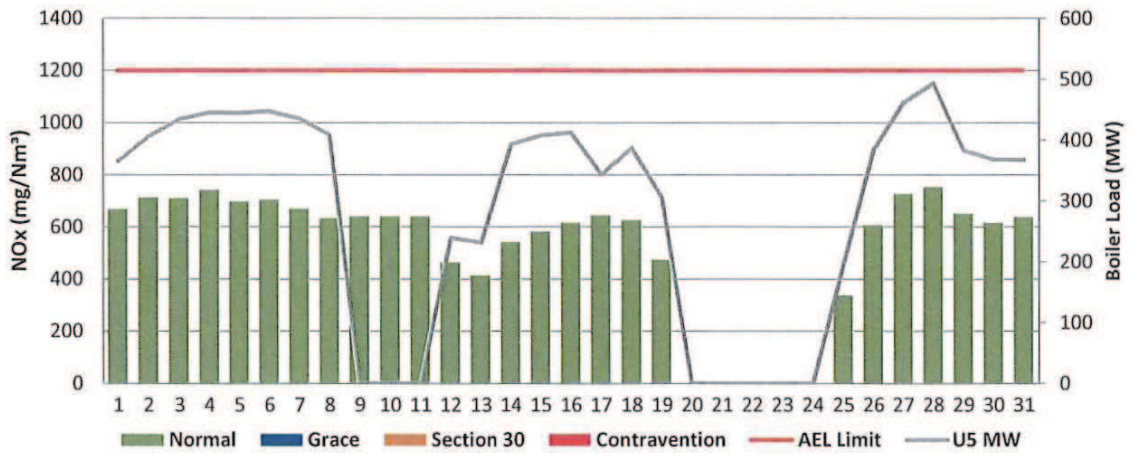
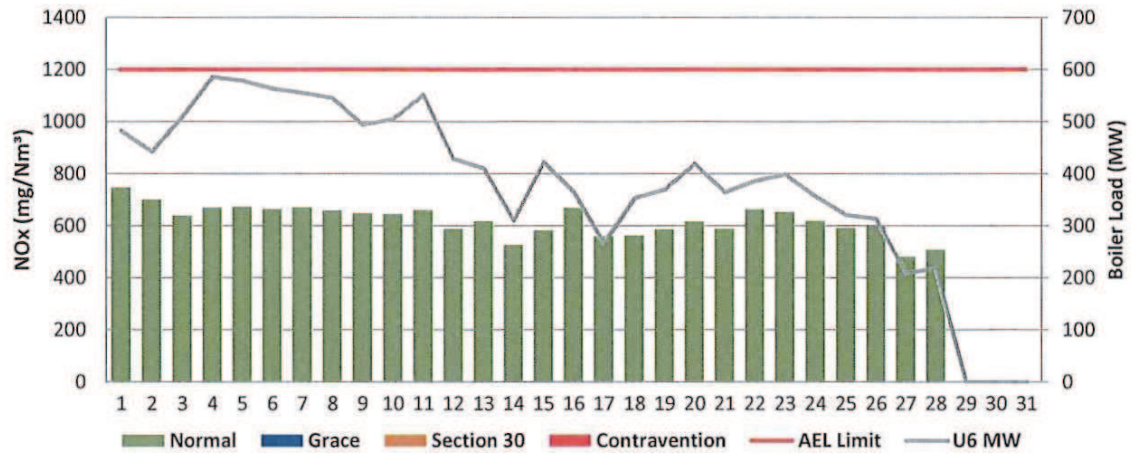


Figure 12: Matla Unit 6 NOx Emissions - December 2019



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of December-2019

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>no event</i>		<i>Unit 3</i>		<i>Unit 3</i>	
Breaker Open (BO)	<i>05:05 AM</i>	<i>2019/12/15</i>			<i>11:55 PM</i>	<i>2019/12/04</i>	<i>04:50 AM</i>	<i>2019/12/15</i>
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>			<i>05:30 PM</i>	<i>2019/12/05</i>	<i>06:55 PM</i>	<i>2019/12/16</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM	<i>00:17:35</i>	DD:HH:MM	<i>01:14:05</i>	DD:HH:MM
Fires in time					<i>12:05 AM</i>	<i>2019/12/09</i>	<i>07:40 AM</i>	<i>2019/12/17</i>
Synch. to Grid (or BC)					<i>01:25 PM</i>	<i>2019/12/09</i>	<i>01:40 PM</i>	<i>2019/12/17</i>
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM	<i>00:13:20</i>	DD:HH:MM	<i>00:06:00</i>	DD:HH:MM
Emissions below limit from BC (end date)					<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	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)	<i>04:10 AM</i>	<i>2019/12/25</i>						
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>						
BO to DG SD (duration)	<i>n/a</i>	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)	08:25 PM	2019/12/09	01:50 AM	2019/12/15	04:15 AM	2019/12/21		
Draught Group (DG) Shut Down (SD)	08:25 PM	2019/12/09	01:50 AM	2019/12/15	04:15 AM	2019/12/21		
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)	02:15 AM	2019/12/19						
Draught Group (DG) Shut Down (SD)	02:15 AM	2019/12/19						
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	08:05 AM	2019/12/25						
Synch. to Grid (or BC)	08:20 PM	2019/12/25						
Fires in to BC (duration)	00:12:15	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. 6	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	09:20 AM	2019/12/24	08:05 PM	2019/12/28				
Draught Group (DG) Shut Down (SD)	09:20 AM	2019/12/24	08:05 PM	2019/12/28				
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	11:15 AM	2019/12/24						
Synch. to Grid (or BC)	04:20 PM	2019/12/24						
Fires in to BC (duration)	00:05:05	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

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of December-2019 in mg/Nm³

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

11 General

Boiler Engineering  Date

 Environmental Department Date

General Manager  Date

Compiled by Boiler Engineering Department

ESP & SO₃ System Engineer

For: Department of Environmental Affairs and Tourism

Chief Air Pollution Control Officer

Copies: Eskom Environmental Management

Group Technology Engineering

Matla Power Station:

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