



Generation

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**MATLA POWER STATION**

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

  
BOILER ENGINEERING MANAGER

  
ENVIRONMENTAL MANAGER

  
ENGINEERING MANAGER

29/08/2023

DATE

2023/08/28

DATE

29.08.2023

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 Jul-2023 |
|----------------------------|-------------------|-------|--------------------------------|---------------------------|
|                            | Coal              | Tons  | 1 475 000                      | #VALUE!                   |
|                            | Fuel Oil          | Tons  | 3 500                          | 1 387                     |

| Production Rates | Product / By-Product Name | Units  | Max Production Capacity Permitted | Production Rate Jul-2023 |
|------------------|---------------------------|--------|-----------------------------------|--------------------------|
|                  | Energy                    | GWh    | 2 745                             | 1 161                    |
|                  | Ash                       | Tons   | 471 000                           | #VALUE!                  |
|                  | RE PM                     | kg/MWh | not specified                     | 3.233                    |

**2 ENERGY SOURCE CHARACTERISTICS**

| Coal Characteristic | Units | Stipulated Range | Monthly Average Content |
|---------------------|-------|------------------|-------------------------|
| Sulphur Content     | %     | 0.8-1.1          | 1.00                    |
| Ash Content         | %     | 21-40            | 32.04                   |

### 3 EMISSION LIMITS (mg/Nm<sup>3</sup>)

| Associated Unit/Stack | PM  | SO <sub>2</sub> | 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<sub>2</sub>

### 4 ABATEMENT TECHNOLOGY (%)

| Associated Unit/Stack | Technology Type                         | Efficiency Jul-2023 |
|-----------------------|---|---------------------|
| South                 | <i>Electro Static Precipators (ESP)</i> | <i>98.987%</i>      |
| Unit 4                | <i>Electro Static Precipators (ESP)</i> | <i>98.798%</i>      |
| Unit 5                | <i>Electro Static Precipators (ESP)</i> | <i>97.149%</i>      |
| Unit 6                | <i>Electro Static Precipators (ESP)</i> | <i>96.164%</i>      |

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

### 5 DATA RELIABILITY (%)

| Associated Unit/Stack | PM          | SO <sub>2</sub> | NO           | O <sub>2</sub> |
|-----------------------|-------------|-----------------|--------------|----------------|
| South                 | <i>94.2</i> | <i>100.0</i>    | <i>100.0</i> | <i>100.0</i>   |
| Unit 4                | <i>83.6</i> | <i>99.8</i>     | <i>99.8</i>  | <i>99.8</i>    |
| Unit 5                | <i>59.4</i> | <i>100.0</i>    | <i>100.0</i> | <i>100.0</i>   |
| Unit 6                | <i>17.6</i> | <i>100.0</i>    | <i>100.0</i> | <i>100.0</i>   |

### 6 EMISSION PERFORMANCE

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

| Associated Unit/Stack | PM             | SOx             | NOx            |
|-----------------------|----------------|-----------------|----------------|
| Unit 1                | 233.0          | 1 511.8         | 362.5          |
| Unit 2                | 675.7          | 4 174.4         | 1 001.0        |
| Unit 3                | 400.4          | 2 585.2         | 619.9          |
| Unit 4                | 319.3          | 1 743.7         | 620.1          |
| Unit 5                | 551.3          | 1 006.3         | 354.3          |
| Unit 6                | 1 575.4        | 2 439.5         | 1 155.8        |
| <b>SUM</b>            | <b>3 755.1</b> | <b>13 461.0</b> | <b>4 113.7</b> |

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

| Associated Unit/Stack | Normal   | Grace    | Section 30 | Contravention | Total Exceedance | Average PM (mg/Nm <sup>3</sup> ) |
|-----------------------|----------|----------|------------|---------------|------------------|----------------------------------|
| South                 | 0        | 0        | 0          | 31            | 31               | 389.6                            |
| Unit 4                | 1        | 3        | 0          | 12            | 15               | 417.7                            |
| Unit 5                | 0        | 0        | 0          | 11            | 11               | 1 124.5                          |
| Unit 6                | 0        | 0        | 0          | 31            | 31               | 1 266.9                          |
| <b>SUM</b>            | <b>1</b> | <b>3</b> | <b>0</b>   | <b>85</b>     | <b>88</b>        |                                  |

Table 6.3: Operating days in compliance to SO<sub>2</sub> AEL Limit - July 2023

| Associated Unit/Stack | Normal    | Grace    | Section 30 | Contravention | Total Exceedance | Average SO <sub>2</sub> (mg/Nm <sup>3</sup> ) |
|-----------------------|-----------|----------|------------|---------------|------------------|---|
| South                 | 31        | 0        | 0          | 0             | 0                | 2 417.8                                       |
| Unit 4                | 17        | 0        | 0          | 0             | 0                | 2 384.5                                       |
| Unit 5                | 12        | 0        | 0          | 0             | 0                | 2 038.6                                       |
| Unit 6                | 31        | 0        | 0          | 0             | 0                | 1 986.7                                       |
| <b>SUM</b>            | <b>91</b> | <b>0</b> | <b>0</b>   | <b>0</b>      | <b>0</b>         |   |

Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - July 2023

| Associated Unit/Stack | Normal    | Grace    | Section 30 | Contravention | Total Exceedance | Average NO <sub>x</sub> (mg/Nm <sup>3</sup> ) |
|-----------------------|-----------|----------|------------|---------------|------------------|---|
| South                 | 31        | 0        | 0          | 0             | 0                | 579.8   |
| Unit 4                | 17        | 0        | 0          | 0             | 0                | 848.0   |
| Unit 5                | 12        | 0        | 0          | 0             | 0                | 717.8   |
| Unit 6                | 31        | 0        | 0          | 0             | 0                | 941.2   |
| <b>SUM</b>            | <b>91</b> | <b>0</b> | <b>0</b>   | <b>0</b>      | <b>0</b>         |   |

Note: NO<sub>x</sub> emissions is measured as NO in PPM. Final NO<sub>x</sub> value is expressed as total NO<sub>2</sub>

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 - July 2023

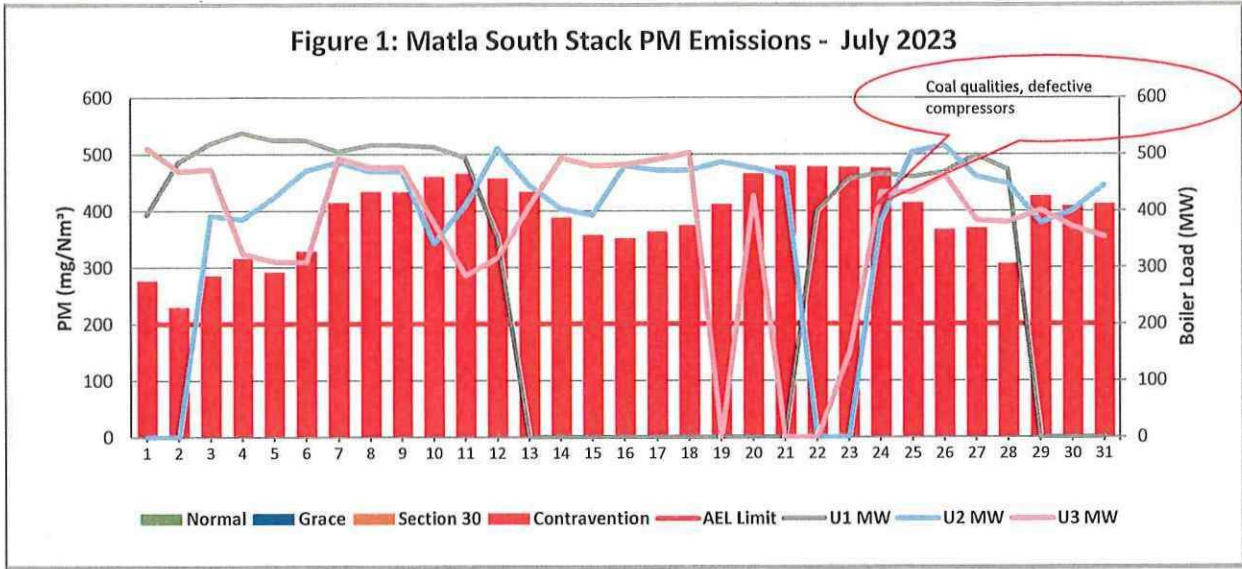


Figure 2: Matla Unit 4 PM Emissions - July 2023

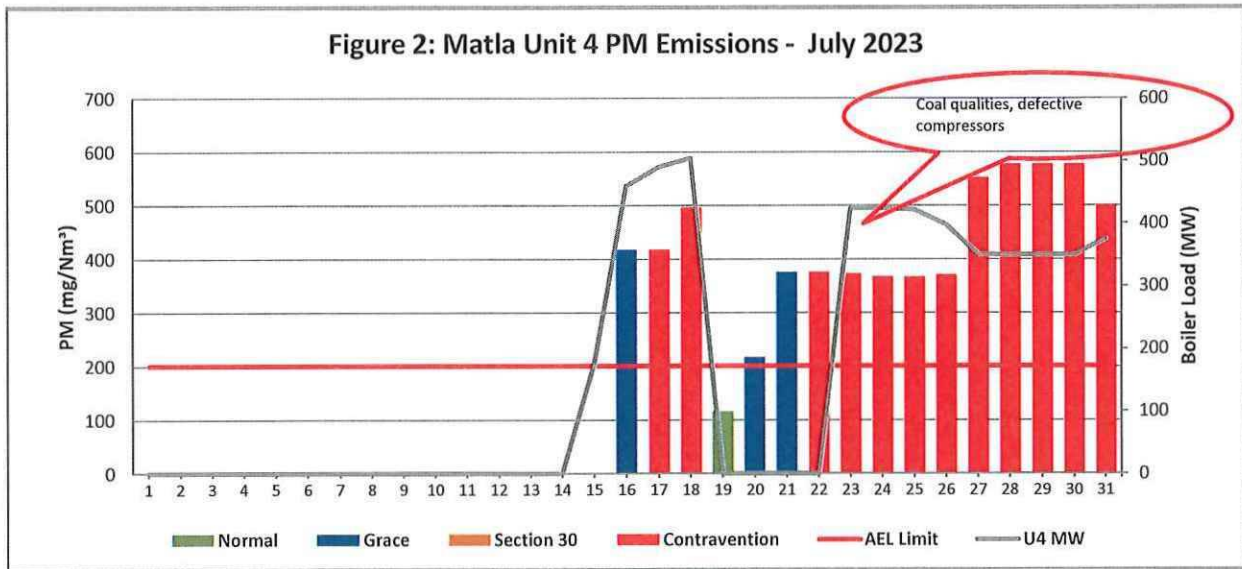


Figure 3: Matla Unit 5 PM Emissions - July 2023

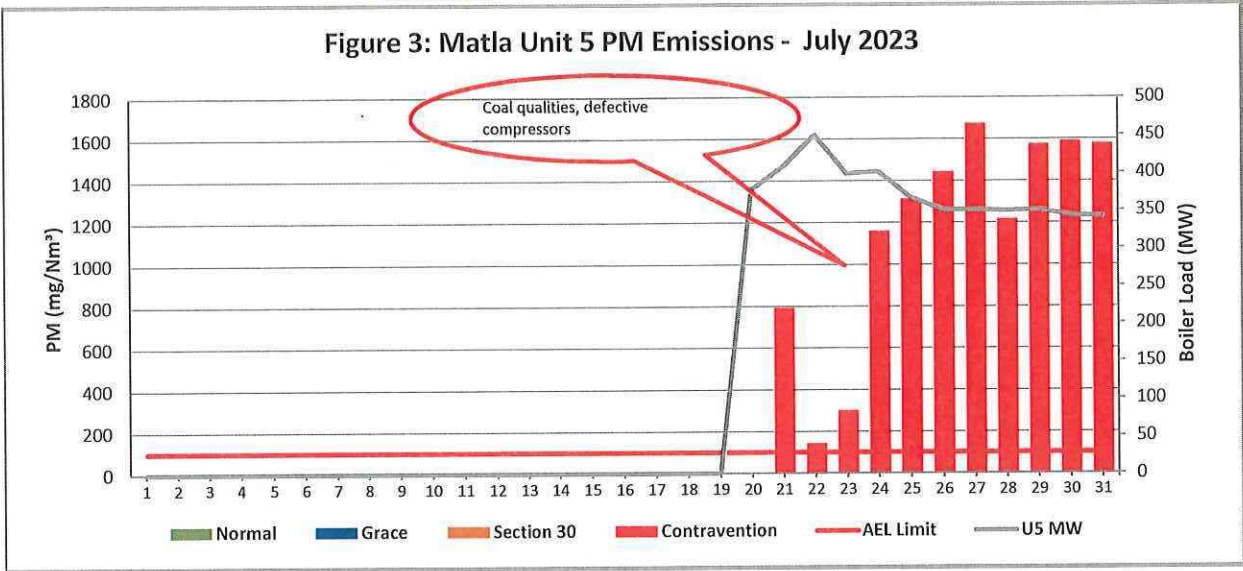


Figure 4: Matla Unit 6 PM Emissions - July 2023

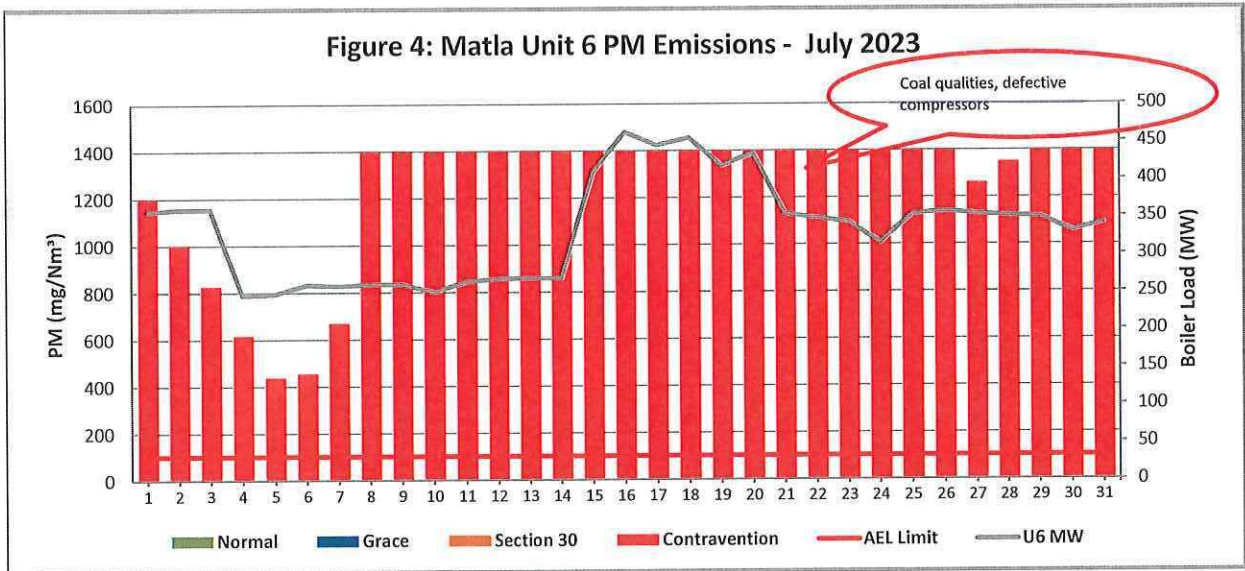


Figure 5: Matla South Stack SO<sub>2</sub> Emissions - July 2023

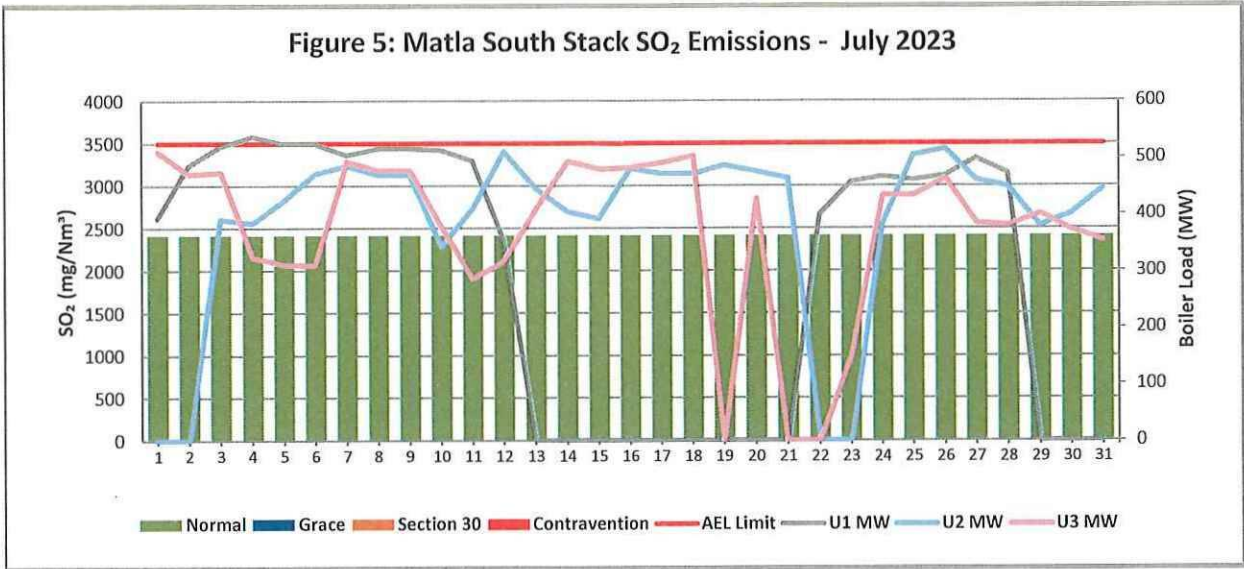


Figure 6: Matla Unit 4 SO<sub>2</sub> Emissions - July 2023

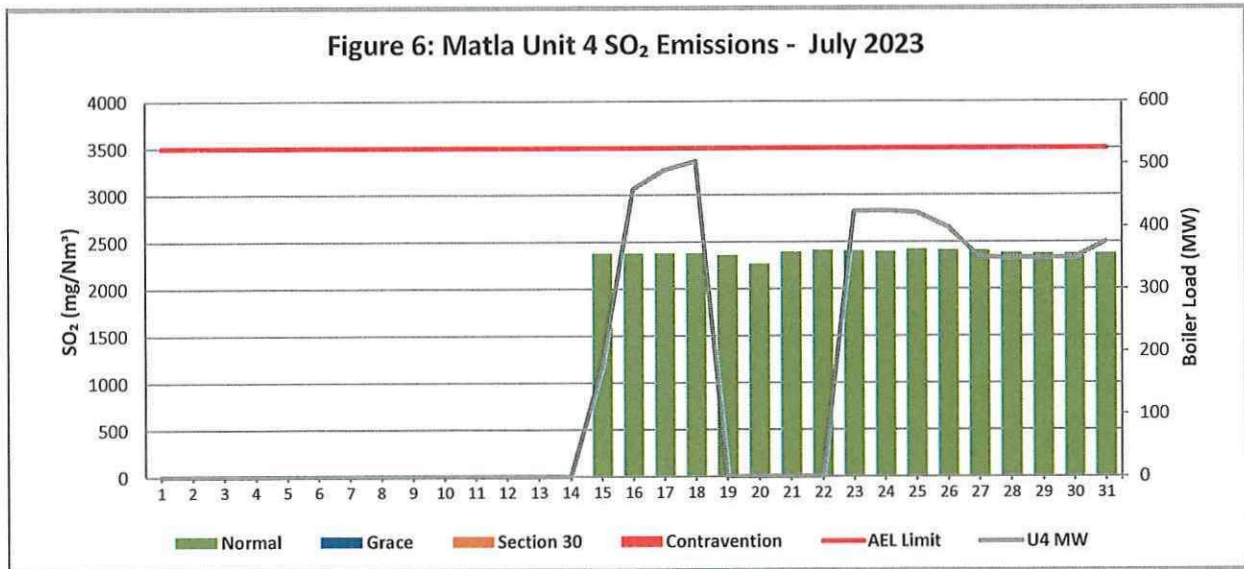


Figure 7: Matla Unit 5 SO<sub>2</sub> Emissions - July 2023

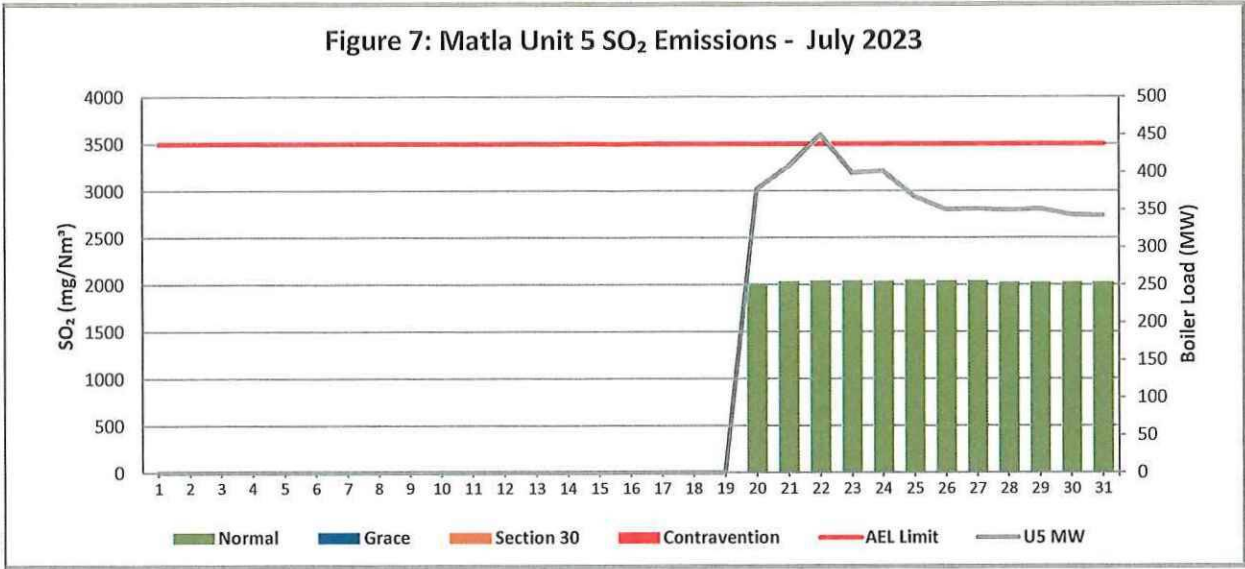
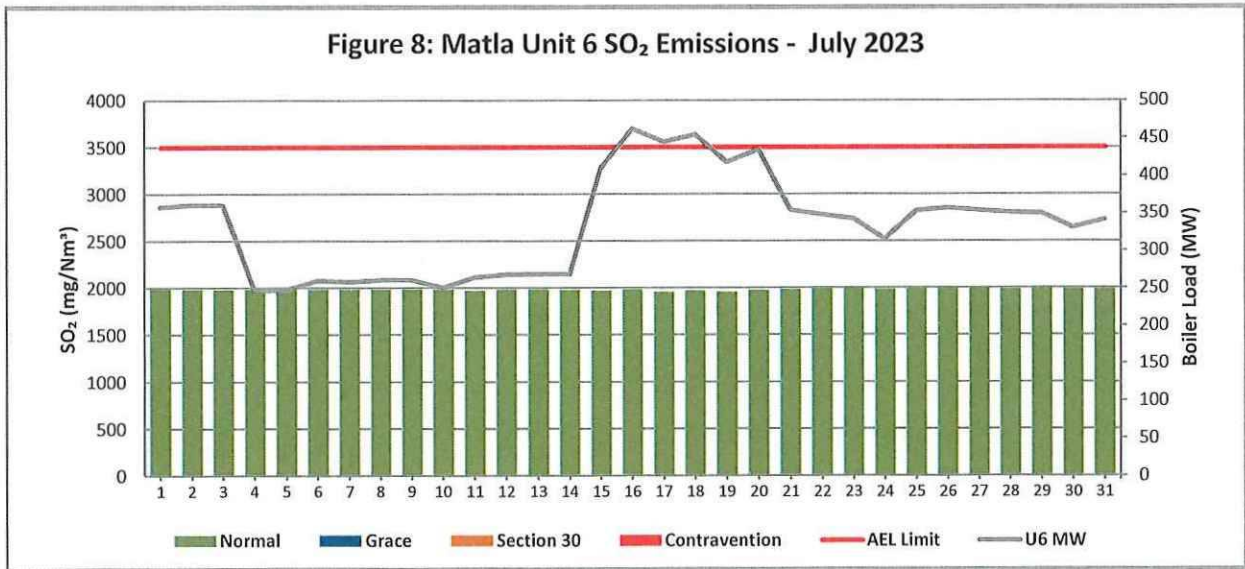
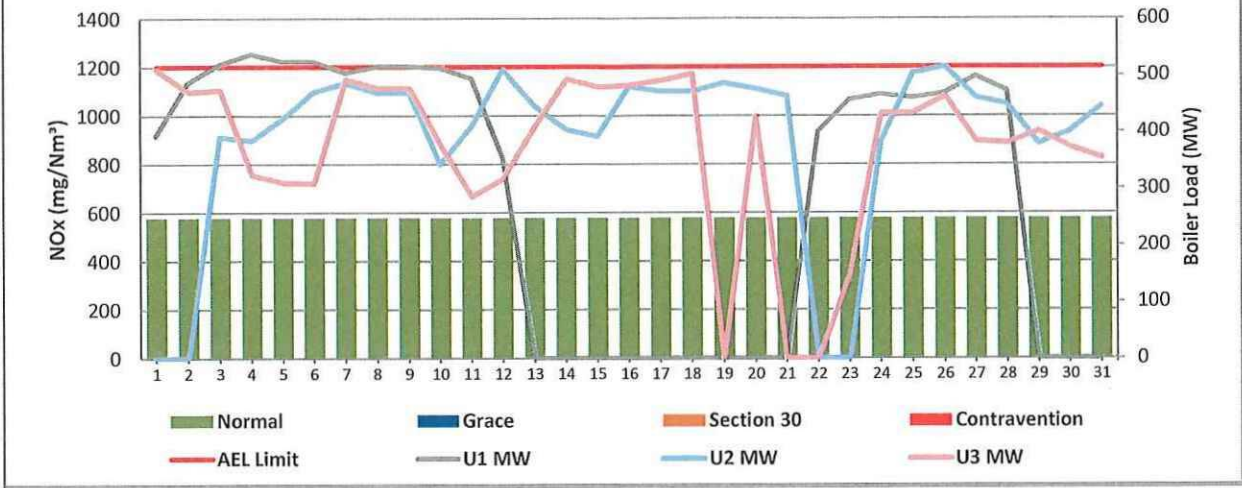


Figure 8: Matla Unit 6 SO<sub>2</sub> Emissions - July 2023





**Figure 9: Matla South Stack NOx Emissions - July 2023**



**Figure 10: Matla Unit 4 NOx Emissions - July 2023**

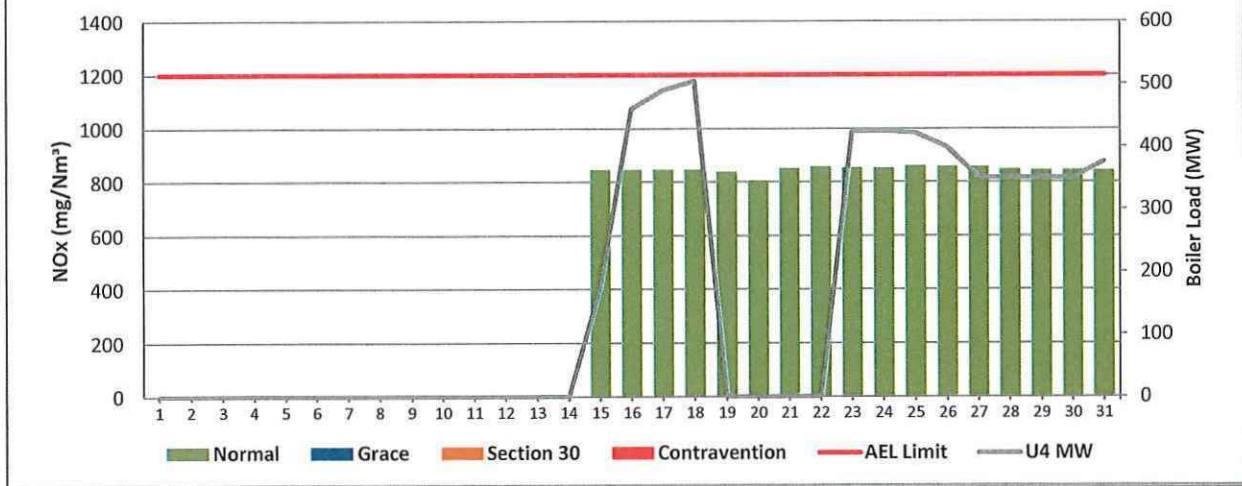


Figure 11: Matla Unit 5 NOx Emissions - July 2023

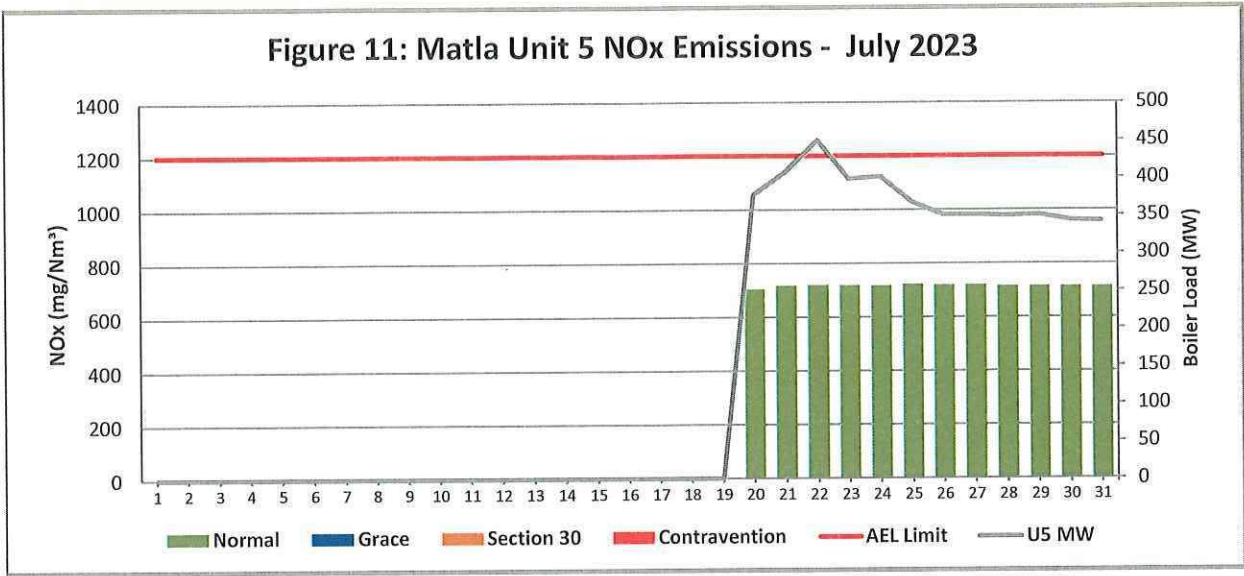
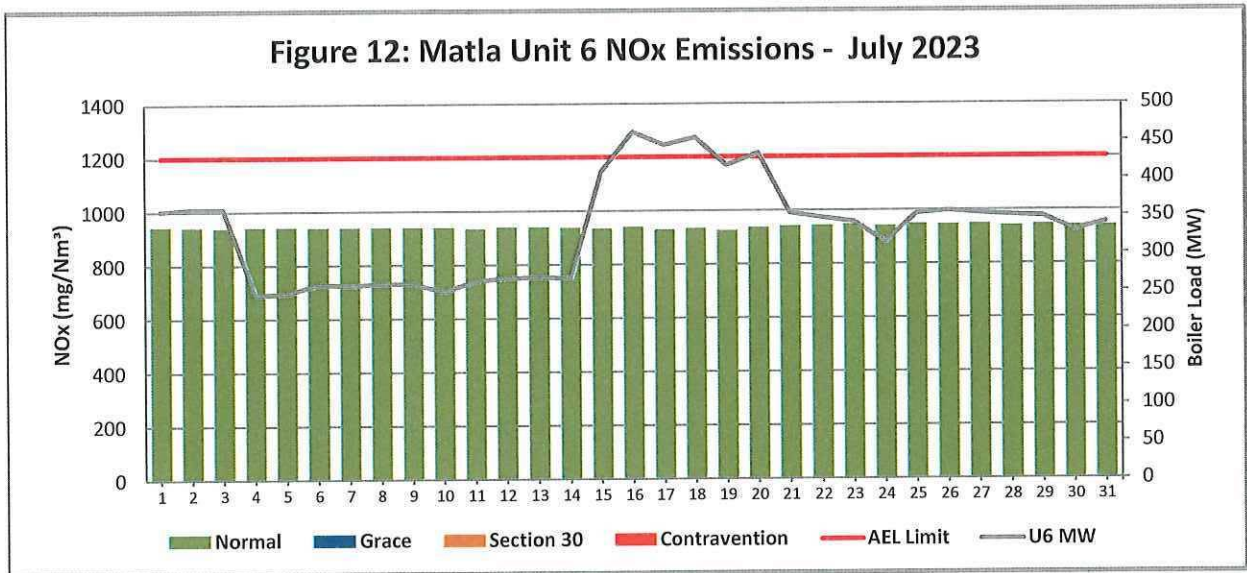


Figure 12: Matla Unit 6 NOx Emissions - July 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

| South Stack                              | Event 1     |             | Event 2  |            | Event 3     |             | Event 4               |                       |
|--|-------------|-------------|----------|------------|-------------|-------------|-----------------------|-----------------------|
| Unit No.                                 | Unit 1      |             | no event |            | Unit 2      |             | Unit 2                |                       |
| Breaker Open (BO)                        | 3:55 am     | 2023/07/12  | 7:45 am  | 2023/07/29 |             |             | 2:40 am               | 2023/07/10            |
| Draught Group (DG) Shut Down (SD)        | 8:10 pm     | 2023/07/12  | 2:40 am  | 2023/07/30 |             |             | DG did not trip or SD | DG did not trip or SD |
| BO to DG SD (duration)                   | 00:16:15    | DD:HH:MM    | 00:18:55 | DD:HH:MM   |             | DD:HH:MM    | n/a                   | DD:HH:MM              |
| Fires in time                            | 4:00 am     | 2023/07/21  |          |            | 6:10 pm     | 2023/07/02  | 2:40 am               | 2023/07/10            |
| Synch. to Grid (or BC)                   | 6:15 pm     | 2023/07/22  |          |            | 4:15 am     | 2023/07/03  | 2:35 am               | 2023/07/11            |
| Fires in to BC (duration)                | 01:14:15    | DD:HH:MM    |          | DD:HH:MM   | 00:10:05    | DD:HH:MM    | 00:23:55              | 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    |          | DD:HH:MM   | n/a         | DD:HH:MM    | n/a                   | DD:HH:MM              |

| South Stack ...cont.                     | Event 5     |             | Event 6     |             | Event 7  |          | Event 8  |          |
|--|-------------|-------------|-------------|-------------|----------|----------|----------|----------|
| Unit No.                                 | Unit 2      |             | Unit 3      |             | no event |          | no event |          |
| Breaker Open (BO)                        | 1:00 am     | 2023/07/22  | 8:55 pm     | 2023/07/18  |          |          |          |          |
| Draught Group (DG) Shut Down (SD)        | 8:30 am     | 2023/07/23  | 8:55 pm     | 2023/07/18  |          |          |          |          |
| BO to DG SD (duration)                   | 01:07:30    | DD:HH:MM    | 00:00:00    | DD:HH:MM    |          | DD:HH:MM |          | DD:HH:MM |
| Fires in time                            | 2:15 am     | 2023/07/24  | 7:15 pm     | 2023/07/19  |          |          |          |          |
| Synch. to Grid (or BC)                   | 2:40 pm     | 2023/07/24  | 5:55 am     | 2023/07/24  |          |          |          |          |
| Fires in to BC (duration)                | 00:12:25    | DD:HH:MM    | 04:10:40    | DD:HH:MM    |          | 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) | n/a         | DD:HH:MM    | n/a         | 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                            |         |          | 8:40 pm     | 2023/07/14  |         |          |         |          |
| Synch. to Grid (or BC)                   |         |          | 8:50 pm     | 2023/07/15  |         |          |         |          |
| Fires in to BC (duration)                |         | DD:HH:MM | 01:00:10    | 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) |         | DD:HH:MM | n/a         | DD:HH:MM    |         | DD:HH:MM |         | DD:HH:MM |

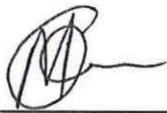
| Unit No. 5                               | Event 1     |             | Event 2 |          | Event 3 |          | Event 4 |          |
|--|-------------|-------------|---------|----------|---------|----------|---------|----------|
| Breaker Open (BO)                        |             |             |         |          |         |          |         |          |
| 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                            | 11:15 pm    | 2023/07/19  |         |          |         |          |         |          |
| Synch. to Grid (or BC)                   | 5:25 pm     | 2023/07/20  |         |          |         |          |         |          |
| Fires in to BC (duration)                | 00:18:10    | 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)                        | 4:40 pm     | 2023/07/03  |         |          |         |          |         |          |
| Draught Group (DG) Shut Down (SD)        | 4:40 pm     | 2023/07/03  |         |          |         |          |         |          |
| BO to DG SD (duration)                   |             | DD:HH:MM    |         | DD:HH:MM |         | DD:HH:MM |         | DD:HH:MM |
| Fires in time                            | 4:40 pm     | 2023/07/03  |         |          |         |          |         |          |
| Synch. to Grid (or BC)                   | 12:20 am    | 2023/07/04  |         |          |         |          |         |          |
| Fires in to BC (duration)                | 00:07:40    | 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 July-2023 in mg/Nm<sup>3</sup>

## 11 General

PM reliability on unit 5 and unit 6 below 80% due emissions at maxing out.  
Unit 6 PM curve expired and postponed to August due to plant breakdown. Testing completed awaiting for the report 08/09/2023  
Gases inaccurate and are reported using QAL 2 averages.  
South stack and unit 6 QAL 2 curves expired. South stack gas monitor faulty and repairs in progress. Target date 30/09/2023  
Unit 6 testing completed and awaiting for a report to be issued however it is delayed. New target date 05/09/2023



29/08/2023

Boiler Engineering Date



29/08/2023

Environmental Department Date



29/08/2023

General Manager Date

Compiled by: Boiler Engineering Department

ESP & SO<sub>3</sub> System Engineer

For: Department of Forestry, Fishery and the Environment

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 Team  
Performance and Test  
Production Manager

