

**Ms Nompumelelo Simelane**  
Nkangala District Municipality  
PO Box 437  
Middleburg  
1050

Date:

*June 2023*

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Ref: *Kusile Power Station AEL (17/4/AEL/MP311/12/01)*

Dear Ms. Simelane

**KUSILE POWER STATION'S MONTHLY EMISSIONS REPORT FOR APRIL 2023**

This serves as the monthly report required in terms of Section 7.6 in Kusile Power Station's Atmospheric Emission License: 17/4/AEL/MP311/12/01. The emissions are for the month of April 2023. Please take note that Unit 1, 2 and 3 are off due to the flue gas duct collapse incident that occurred in Oct 2022.

Hoping the above will meet your satisfaction.

Yours sincerely



Grace Olukune  
**ACTING GENERAL MANAGER**  
**DATE:** 07.06.2023

**1. KUSILE POWER STATION MONTHLY EMISSIONS REPORT: Atmospheric Emission License 17/4/AEL/MP311/12/01**



**2 Raw Materials and Products**

| Raw Materials and Products | Raw Material Type | Units | Maximum Permitted Consumption Rate | Consumption Rate Apr-2023 |
|----------------------------|-------------------|-------|------------------------------------|---------------------------|
|                            | Coal              | Tons  | 1 818 083                          | 145 647                   |
|                            | Fuel Oil          | Tons  | 5 533                              | 429.459                   |
|                            | Limestone         | Tons  | 72 917                             | 5929                      |

| Production Rates | Product / By-Product Name | Units  | Max. Production Capacity Permitted | Production Rate Apr-2023 |
|------------------|---------------------------|--------|------------------------------------|--------------------------|
|                  | Energy                    | GWh    | 3321.216                           | 279.99                   |
|                  | Ash                       | Tons   | 663 583                            | 42 237.7                 |
|                  | Gypsum                    | Tons   | 129 250                            | 3 320.2                  |
|                  | RE PM                     | kg/MWh | <i>not specified</i>               | 0.021                    |
|                  | RE SO <sub>2</sub>        | kg/MWh | <i>not specified</i>               | 0.046                    |

**3 Energy source characteristics**

| Fuel Characteristic | Units | Stipulated Range     | Monthly Average Content |
|---------------------|-------|----------------------|-------------------------|
| Coal CV             | MJ/kg | <i>not specified</i> | 21.140                  |
| Coal Sulphur        | %     | 1.3                  | 0.800                   |
| Ash in Coal         | %     | 38                   | 29.000                  |
| Fuel Oil (FO) CV    | MJ/kg | <i>not specified</i> | 41.900                  |
| Fuel Oil Sulphur    | %     | 3                    | 2.460                   |

#### 4 Emissions Limits (mg/Nm<sup>3</sup>)

| Associated Unit/Stack | PM | SO <sub>2</sub> | NO <sub>x</sub> |
|-----------------------|----|-----------------|-----------------|
| North                 | 50 | 500             | 750             |
| South                 | 50 | 500             | 750             |

#### 5 Abatement Technology (%)

| Associated Unit/Stack | Technology Type | Efficiency Apr-2023 | Technology Type | Efficiency Apr-2023 |
|-----------------------|-----------------|---------------------|-----------------|---------------------|
| Unit 1                | Unit on outage  |                     |                 |                     |
| Unit 2                | Unit on outage  |                     |                 |                     |
| Unit 3                | Unit on outage  |                     |                 |                     |
| Unit 4                | FFP             | 99.984%             | FGD             | 99.994%             |

Note: Both FFP and FGD does not have bypass mode operation, hence plant 100% utilised.

#### 6. Monitoring reliability (%)

| Associated Unit/Stack | PM             | SO <sub>2</sub> | NO   | O <sub>2</sub> |
|-----------------------|----------------|-----------------|------|----------------|
| Unit 1                | Unit on outage |                 |      |                |
| Unit 2                | Unit on outage |                 |      |                |
| Unit 3                | Unit on outage |                 |      |                |
| Unit 4                | 80.5           | 94.6            | 99.7 | 99.8           |

#### 7. Emissions Performance

Table 7.1: Monthly tonnages for the month of April - 2023

| Associated Unit/Stack | PM             | SO <sub>2</sub> | NO <sub>x</sub> |
|-----------------------|----------------|-----------------|-----------------|
| Unit 1                | Unit on outage |                 |                 |
| Unit 2                | Unit on outage |                 |                 |
| Unit 3                | Unit on outage |                 |                 |
| Unit 4                | 5.9            | 13              | 489             |
| <b>SUM</b>            | 5.9            | 13              | 489             |

Table 72: Operating days in compliance to PM AEL Limit - April 2023

| Associated Unit/Stack | Normal         | Grace | Section 30 | Contravention | Total Exceedance | Average PM (mg/Nm <sup>3</sup> ) |
|-----------------------|----------------|-------|------------|---------------|------------------|----------------------------------|
| Unit 1                | Unit on outage |       |            |               |                  |                                  |
| Unit 2                | Unit on outage |       |            |               |                  |                                  |
| Unit 3                | Unit on outage |       |            |               |                  |                                  |
| Unit 4                | 22             |       |            |               |                  | 6.7                              |
| <b>SUM</b>            | <b>22</b>      |       |            |               |                  |                                  |

Table 7.3: Operating days in compliance to SO<sub>2</sub> AEL Limit - April 2023

| Associated Unit/Stack | Normal         | Grace | Section 30 | Contravention | Total Exceedance | Average SO <sub>2</sub> (mg/Nm <sup>3</sup> ) |
|-----------------------|----------------|-------|------------|---------------|------------------|---|
| Unit 1                | Unit on outage |       |            |               |                  |   |
| Unit 2                | Unit on outage |       |            |               |                  |   |
| Unit 3                | Unit on outage |       |            |               |                  |   |
| Unit 4                | 25             |       |            |               |                  | 13.5  |
| <b>SUM</b>            | <b>25</b>      |       |            |               |                  |   |

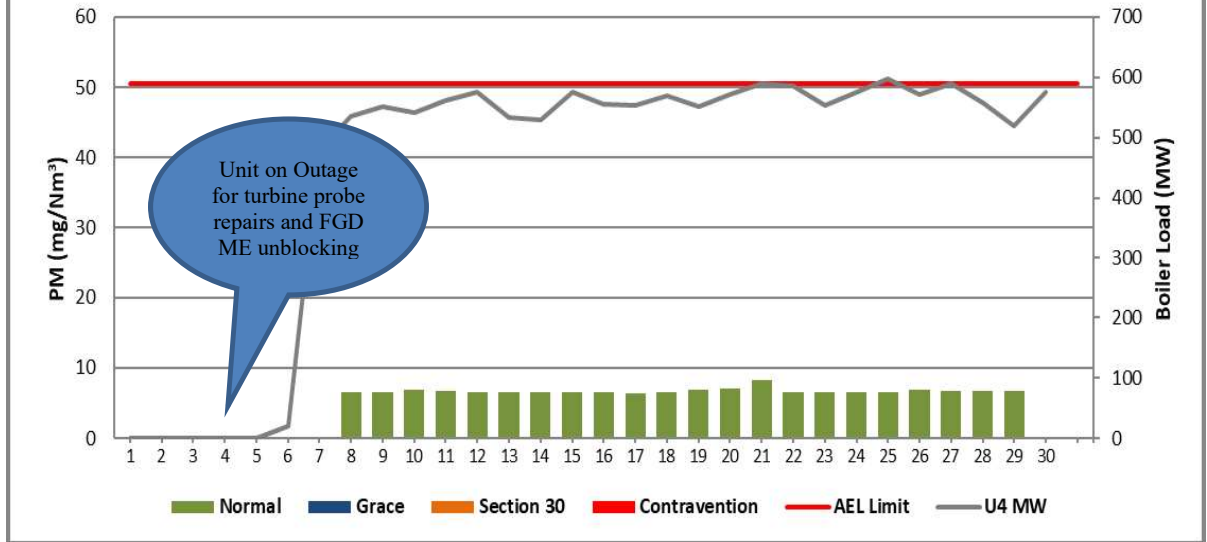
Table 7.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - April 2023

| Associated Unit/Stack | Normal         | Grace | Section 30 | Contravention | Total Exceedance | Average NO <sub>x</sub> (mg/Nm <sup>3</sup> ) |
|-----------------------|----------------|-------|------------|---------------|------------------|---|
| Unit 1                | Unit on outage |       |            |               |                  |   |
| Unit 2                | Unit on outage |       |            |               |                  |   |
| Unit 3                | Unit on outage |       |            |               |                  |   |
| Unit 4                | 25             |       |            |               |                  | 513.5   |
| <b>SUM</b>            | <b>25</b>      |       |            |               |                  |   |

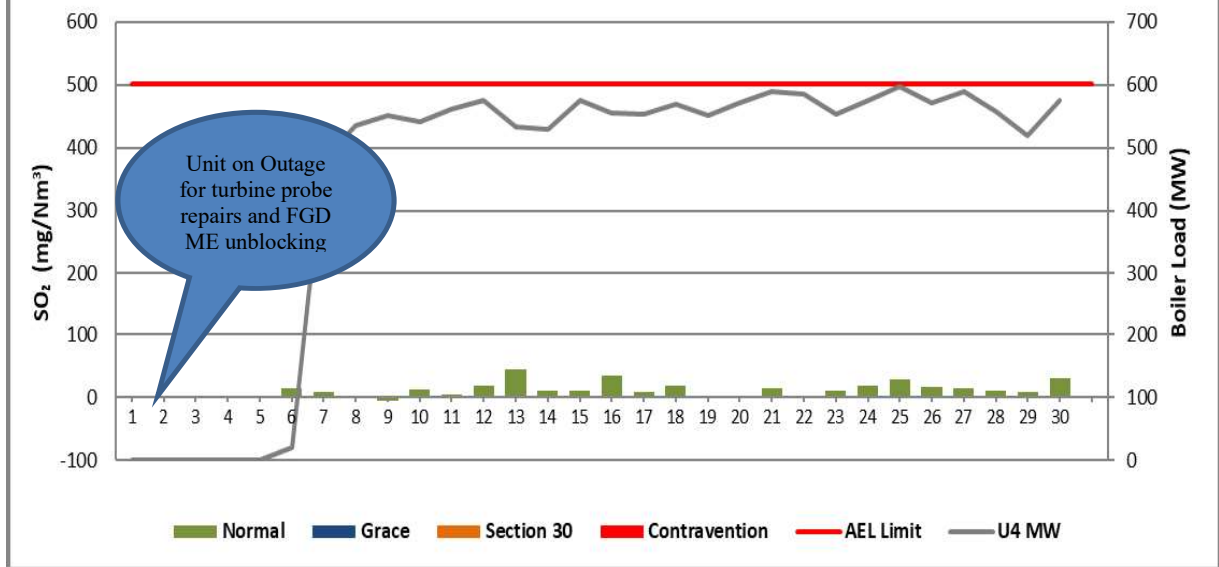
Table 7.5: Legend Description

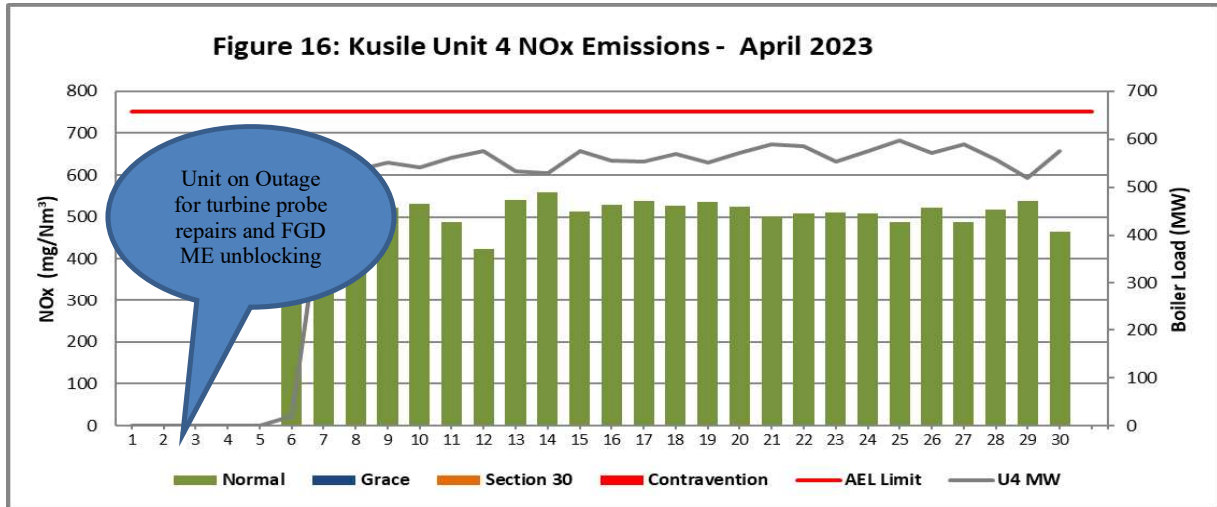
| Condition     | Colour | Description  |
|---------------|--------|--|
| Normal        |        | Emissions below Emission Limit Value (ELV)                       |
| Grace         |        | Emissions above the ELV during grace period                      |
| Section 30    |        | Emissions above ELV during a NEMA S30 incident                   |
| Contravention |        | Emissions above ELV but outside grace or S30 incident conditions |

**Figure 4: Kusile Unit 4 PM Emissions - April 2023**



**Figure 10: Kusile Unit 4 SO<sub>2</sub> Emissions - April 2023**





### 8. Shut down and Light up information

| Unit No. 4                               | Event 1       |               | Event 2     |             |
|--|---------------|---------------|-------------|-------------|
| Breaker Open (BO)                        | BO previously | BO previously | 6:50 pm     | 2023/04/29  |
| Draught Group (DG) Shut Down (SD)        | n/a           | n/a           | 6:50 pm     | 2023/04/29  |
| BO to DG SD (duration)                   | n/a           | DD:HH:MM      | 00:00:00    | DD:HH:MM    |
| Fires in time                            | 8:15 am       | 2023/04/07    | 3:05 am     | 2023/04/30  |
| Synch. to Grid (or BC)                   | 10:15 am      | 2023/04/07    | 6:00 am     | 2023/04/30  |
| Fires in to BC (duration)                | 00:02:00      | DD:HH:MM      | 00:02:55    | 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    |

### 9. Complaints

No complaints reported for the month of April 2023

| Date and time complaint was received | Complaint received | Source code name | Root cause analysis | Calculation of impact/emissions associated with incidents and dispersion modelling of pollutants where applicable. | Measures implemented or to be implemented to prevent recurrence | Date by which measures will be implemented |
|--------------------------------------|--------------------|------------------|---------------------|--|---|--|
| N/A                                  |                    |                  |                     |  |   |  |