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Date:
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Enquiries:
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Ref: ANK/2021/10

Dear Ian

ANKERLIG POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF SEPTEMBER 2021

This serves as the monthly report required in terms of Section 9 in Ankerlig Power Station's Atmospheric Emission License (WCCT036). The emissions are for the month of September, these being SO₂, CO₂, PM and NO_x (as NO₂).

1 Raw Materials and Products

Table 1. Quantity of Raw Materials and Products used/produced for the month of September 2021

| Raw Materials and Products used | Raw Material Type | Unit | Maximum Permitted Consumption/ Rate (Quantity) | Total consumption in Month of September |
|---------------------------------|---|----------------|--|---|
| | Fuel Diesel | Tons/hour/unit | 40 | 3 755 507.59L |
| Production Rates | Product/ By-Product Name | Unit | Maximum Production Capacity Permitted per unit (MW) | Total production/Power sent out in Month of September |
| | Energy | MWh | 170 MW per hour per unit | 11 940.85 MW/h |
| | Fuel use per hour per unit (L) | | Fuel efficiency Litres per MWH | |
| | <i>Unit 11: 32 027.13</i> <i>Unit 12: 33 588.17</i> <i>Unit 21: 28 867.04</i> <i>Unit 22: 32 538.22</i> <i>Unit 31: 29 571.55</i> <i>Unit 32: 34 877.66</i> <i>Unit 41: 32 308.07</i> <i>Unit 42: 30 750.89</i> <i>Unit 43: 29 426.70</i> | | <i>Unit 11: 311.37</i> <i>Unit 12: 316.87</i> <i>Unit 21: 307.96</i> <i>Unit 22: 311.97</i> <i>Unit 31: 321.85</i> <i>Unit 32: 321.85</i> <i>Unit 41: 304.29</i> <i>Unit 42: 314.45</i> <i>Unit 43: 316.14</i> | |

2 Abatement Technology

Table 2. Abatement Equipment Control Technology availability for the month of September

| Associated Unit | Technology Type | Actual Utilisation (%) for the month of September |
|-----------------|-----------------|---|
| Unit 11 | Low NOx burners | 100% |
| Unit 12 | Low NOx burners | 100% |
| Unit 21 | Low NOx burners | 100% |
| Unit 22 | Low NOx burners | 100% |
| Unit 31 | Low NOx burners | 100% |
| Unit 32 | Low NOx burners | 100% |
| Unit 41 | Low NOx burners | 100% |
| Unit 42 | Low NOx burners | 100% |
| Unit 43 | Low NOx burners | 100% |

Table 3: Tonnages and mg/Nm³ for the month of September

| | Date & time | CO (mg/Nm ³) | NO _x (mg/Nm ³) | PM (mg/Nm ³) | SO ₂ (mg/Nm ³) |
|---|---------------------|--------------------------|---------------------------------------|--------------------------|---------------------------------------|
| Hourly Licence Limit mg/Nm³ | | | 250 | 75 | 3500 |
| Unit 11 | 2021/09/21 20:00 | 5.1 | 142 | 0 | 5.1 |
| | 2021/09/21 19:00 | 5.9 | 140 | 0 | 5 |
| | 2021/09/08 22:00 | 123.8 | 159 | 0 | 0.1 |
| | 2021/09/08 21:00 | 123.6 | 163 | 0 | 0.1 |
| | 2021/09/08 20:00 | 124.1 | 162 | 0 | 0.1 |
| | 2021/09/07 22:00 | 119.7 | 166 | 0 | 0.1 |
| | 2021/09/07 21:00 | 119.8 | 167 | 0 | 0.1 |
| | 2021/09/07 20:00 | 120.3 | 167 | 0 | 0.1 |
| | | | | | |
| | | | | | |
| Unit 12 | 2021/09/07 22:00 | 1.7 | 152 | 0 | 0.1 |
| | 2021/09/07 21:00 | 2 | 153 | 0 | 0.1 |
| | 2021/09/07 20:00 | 1.7 | 151 | 0 | 0.2 |
| | | | | | |
| | | | | | |
| Unit 21 | 2021/09/21 | 2.7 | 150 | 0 | 0.2 |

| | | | | | |
|----------------|---------------------|-----|-----|-----|-----|
| | 20:00 | | | | |
| | 2021/09/08 22:00 | 2 | 145 | 0 | 0.8 |
| | 2021/09/08 21:00 | 2 | 149 | 0 | 0.7 |
| | 2021/09/08 20:00 | 2.7 | 152 | 0 | 0.4 |
| | 2021/09/07 22:00 | 1.6 | 151 | 0 | 0.2 |
| | 2021/09/07 21:00 | 1.8 | 151 | 0 | 0.3 |
| | 2021/09/07 20:00 | 3.2 | 157 | 0 | 0.6 |
| | | | | | |
| | | | | | |
| Unit 22 | 2021/09/08 21:00 | 1.9 | 114 | 0.1 | 1.3 |
| | 2021/09/08 20:00 | 2.2 | 119 | 0.1 | 1.5 |
| | 2021/09/07 22:00 | 2.3 | 115 | 0.1 | 1.4 |
| | 2021/09/07 21:00 | 2.2 | 119 | 0.1 | 0.9 |
| | 2021/09/07 20:00 | 2.5 | 124 | 0.1 | 1.3 |
| | | | | | |
| | | | | | |
| Unit 31 | 2021/09/08 22:00 | 5.5 | 118 | 0 | 2.2 |
| | 2021/09/08 21:00 | 5.3 | 154 | 0 | 1.8 |
| | 2021/09/08 20:00 | 5 | 154 | 0 | 1.6 |
| | 2021/09/08 19:00 | 4.8 | 154 | 0 | 2.4 |
| | 2021/09/08 18:00 | 4.7 | 151 | 0 | 1.7 |
| | 2021/09/07 22:00 | 3.3 | 109 | 0 | 0.5 |
| | 2021/09/07 21:00 | 3.3 | 114 | 0 | 0.4 |
| | 2021/09/07 20:00 | 3.2 | 145 | 0 | 0.5 |
| | 2021/09/07 13:00 | 5.9 | 147 | 0 | 3.1 |
| | 2021/09/07 12:00 | 5.2 | 147 | 0 | 2.1 |
| | | | | | |
| | | | | | |

| | | | | | |
|----------------|---------------------|-----|-----|-----|-----|
| Unit 32 | 2021/09/08 21:00 | 5.7 | 178 | 0 | 0.2 |
| | 2021/09/08 20:00 | 6.1 | 177 | 0 | 0 |
| | 2021/09/07 21:00 | 5.2 | 145 | 0 | 0 |
| | 2021/09/07 20:00 | 5.9 | 179 | 0 | 0 |
| | | | | | |
| | | | | | |
| | | | | | |
| Unit 41 | 2021/09/08 22:00 | 3.6 | 159 | 0 | 0.2 |
| | 2021/09/08 21:00 | 3.7 | 177 | 0 | 0.3 |
| | 2021/09/08 20:00 | 3.4 | 176 | 0 | 0.1 |
| | 2021/09/07 22:00 | 2.9 | 159 | 0 | 1.2 |
| | 2021/09/07 21:00 | 2.9 | 159 | 0.1 | 1 |
| | 2021/09/07 20:00 | 2.7 | 172 | 0 | 0.2 |
| | | | | | |
| | | | | | |
| Unit 42 | 2021/09/08 21:00 | 0.1 | 175 | 0.1 | 0.5 |
| | 2021/09/07 21:00 | 0.1 | 174 | 0 | 0.5 |
| | | | | | |
| | | | | | |
| Unit 43 | 2021/09/21 20:00 | 1.6 | 142 | 0 | 0.2 |
| | 2021/09/21 19:00 | 1.8 | 143 | 0 | 1.1 |
| | 2021/09/08 22:00 | 1.9 | 142 | 0 | 0 |
| | 2021/09/08 21:00 | 2.7 | 148 | 0 | 1.2 |
| | 2021/09/08 20:00 | 0.9 | 148 | 0 | 0 |
| | 2021/09/08 19:00 | 1 | 142 | 0 | 0.5 |
| | 2021/09/08 18:00 | 1.8 | 145 | 0 | 1.1 |
| | 2021/09/07 22:00 | 2.2 | 151 | 0 | 0.6 |
| | 2021/09/07 21:00 | 3 | 153 | 0 | 2.1 |
| | 2021/09/07 20:00 | 2 | 153 | 0 | 0.7 |
| | 2021/09/07 12:00 | 1.5 | 135 | 0 | 0 |

| | | | | | |
|-----------------------------------|--|-------|--------|---|-------|
| | | | | | |
| | | | | | |
| | | | | | |
| Total Emission mass (Tons) | | 3.148 | 14.295 | 0 | 0.111 |

COMMENT: All pollutants measured were within allowed limits and no non-conformances were registered for the month under review.

Table 4: Each unit and respective days operating under normal operation (Please note the units rarely run for the entire day)

| Unit | Hours operating under normal operation | Test-run hours | Total |
|--------------|--|----------------|------------|
| 11 | 8 | 6 | 14 |
| 12 | 3 | 2 | 5 |
| 21 | 7 | 10 | 17 |
| 22 | 5 | 5 | 10 |
| 31 | 12 | 13 | 25 |
| 32 | 4 | 4 | 8 |
| 41 | 6 | 4 | 10 |
| 42 | 2 | 6 | 8 |
| 43 | 10 | 15 | 25 |
| <i>Total</i> | <i>57</i> | <i>65</i> | <i>122</i> |

3 Monitoring Equipment: Continuous Emission Monitoring System (CEMS) availability

Table 5

| Associated Unit | Technology Type | Actual Utilisation (%) for the month of September |
|-----------------|-----------------|---|
| <i>Unit 11</i> | CEMS | <i>100%</i> |
| <i>Unit 12</i> | CEMS | <i>100%</i> |
| <i>Unit 21</i> | CEMS | <i>100%</i> |
| <i>Unit 22</i> | CEMS | <i>100%</i> |
| <i>Unit 31</i> | CEMS | <i>100%</i> |
| <i>Unit 32</i> | CEMS | <i>100%</i> |
| <i>Unit 41</i> | CEMS | <i>100%</i> |
| <i>Unit 42</i> | CEMS | <i>100%</i> |
| <i>Unit 43</i> | CEMS | <i>100%</i> |

4 Monitoring Equipment Calibration

Continuous Emission Monitoring System (CEMS) is always online unless a fault is reported. The system auto calibrates every four (4) hours and raises an alarm if auto calibration is out of spec. Onsite technicians calibrate the system with calibration gas annually.

5 Ambient Monitoring Station

The station has had the PM analyser installed and unfortunately due to weather related damages it had to be uninstalled. The analyser must still be repaired.

6 Load Factor: 1.25%

7 Leak Detection and Repair programme

No leaks were reported during September 2021

8 Complaints Register

Table 6. Complaints for the month of September 2021

| Source Code/ Name | Root Cause Analysis | Calculation of Impacts/ emissions associated with the incident | Dispersion modelling of pollutants where applicable | Measures implemented to prevent reoccurrence | Date by which measure will be implemented |
|-------------------|---------------------|--|---|--|---|
| None | N/A | N/A | N/A | N/A | N/A |

9 General

The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission reports sent to your office.

Trusting the above meets the reporting requirements specified within the stations' Atmospheric Emission License.

Do not hesitate to contact Maureen Dzulisa on 021 573 6162 for any related queries.

Yours sincerely



Pamela Mrubata
ANKERLIG POWER STATION