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Date  
07 September 2020

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Dear Mrs Mpho Nembilwi

Ref Kendal Power Station AEL (17/4/AEL/MP312/11/15)

**KENDAL POWER STATION'S EMISSIONS REPORT FOR THE MONTH OF JUNE 2020**

This is a monthly report required in terms of Section 7.4 in the Kendal Power Station's Atmospheric Emission License. The emissions are for Eskom Kendal Power Station.

**Note: This report was reviewed by Ebrahim Patel from Eskom Generation Division | Asset Management | Mechanical Engineering Centre of Excellence | Air Pollution Control**

**Compiled by:**

Tshilidzi Vilane  
**ENVIRONMENTAL OFFICER- KENDAL**

Date: 07/09/2020

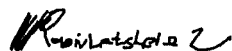
**Verified by:**

Hlonó Malatsi  
**SENIOR TECHNICIAN BOILER ENGINEERING- KENDAL**

Date: 07/09/2020

**KENDAL POWER STATION'S EMISSIONS REPORT FOR THE MONTH OF JUNE 2020**

**Validated by:**



Tendani Rasivhetshela  
**ACTING BOILER ENGINEERING MANAGER-KENDAL**

Date 08/09/2020

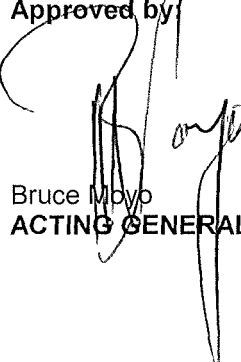
**Supported by:**



Malibongwe Mabizela  
**ACTING ENGINEERING MANAGER-KENDAL**

Date 08/09/2020

**Approved by:**



Bruce Moyo  
**ACTING GENERAL MANAGER-KENDAL**

Date

14/09/2020



1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Consumption Rate Jun-2020
	Coal	Tons	909 009
Fuel Oil	Tons	1663.11	

Production Rates	Product / By-Product Name	Units	Production Rate Jun-2020
	Energy	GWh	1 564.71
Ash	Tons	278 520.4	
RE Ash	kg/MWh	0.795	

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.7 TO >1 (%)	0.770
Ash Content	%	30 TO >40 (%)	30.640

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

Associated Unit/Stack	PM	SO <sub>x</sub>		NO <sub>x</sub>
Unit 1	100	3500		1100
Unit 2	100	3500		1100
Unit 3	100	3500		1100
Unit 4	100	3500		1100
Unit 5	100	3500		1100
Unit 6	100	3500		1100

4 ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jun-2020	Technology Type	Utilization Jun-2020
Unit 1	ESP + SO <sub>2</sub>	99.9%	SO <sub>2</sub>	100.0%
Unit 2	ESP + SO <sub>2</sub>	99.8%	SO <sub>2</sub>	98.8%
Unit 3	ESP + SO <sub>2</sub>	99.4%	SO <sub>2</sub>	62.7%
Unit 4	ESP + SO <sub>2</sub>	99.1%	SO <sub>2</sub>	96.0%
Unit 5	ESP + SO <sub>2</sub>	Unit off	SO <sub>2</sub>	Unit off
Unit 6	ESP + SO <sub>2</sub>	98.8%	SO <sub>2</sub>	Data not available (PI server frozen)

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO	O <sub>2</sub>
Unit 1	100.0	12.2	12.2	0.0
Unit 2	99.9	0.0	0.0	0.0
Unit 3	58.9	16.9	17.6	0.0
Unit 4	89.3	0.0	0.0	0.0
Unit 5	Unit off	Unit off	Unit off	Unit off
Unit 6	94.0	0.0	0.0	0.0

Note: Low gaseous monitor reliability is due to defective analysers as a result of unavailability of spares, Maintenance working on this issue.

6 EMISSION PERFORMANCE

Table 6 1 Monthly tonnages for the month of June 2020

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	60.8	3,884	1,380
Unit 2	100.8	3,763	1,663
Unit 3	297.3	2,343	885
Unit 4	369.5	3,401	1,169
Unit 5	Unit off	Unit off	Unit off
Unit 6	414.9	5,992	2,482
SUM	1,243.23	19,383	7,579

Table 6 2 Operating days in compliance to PM AEL Limit - June 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance			Average PM (mg/Nm <sup>3</sup> )	
Unit 1	29	0	0	0	0	0	0	32.6	
Unit 2	24	3	0	0	3	0	0	65.9	
Unit 3	0	2	0	20	22	0	0	215.6	
Unit 4	1	2	0	0	19	0	0	290.5	
Unit 5	Unit off	Unit off	0	Unit off	Unit off	Unit off	Unit off	Unit off	Unit off
Unit 6	0	0	0	30	30	0	0	228.6	
SUM	54	7	0	69	76	0	0		

Table 6 3 Operating days in compliance to SO<sub>x</sub> AEL Limit - June 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance			Average SO <sub>x</sub> (mg/Nm <sup>3</sup> )	
Unit 1	30	0	0	0	0	0	0	1,925.3	
Unit 2	28	0	0	0	0	0	0	2,458.1	
Unit 3	24	0	0	0	0	0	0	1,635.4	
Unit 4	22	0	0	0	0	0	0	2,661.2	
Unit 5	0	0	0	0	0	0	0	0	
Unit 6	30	0	0	0	0	0	0	2,441.1	
SUM	134	0	0	0	0	0	0		

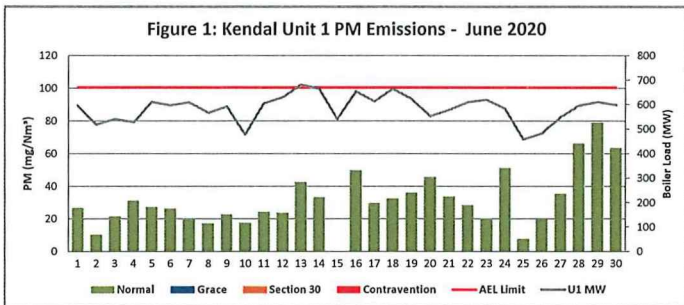
Table 6.4: Operating days in compliance to NOx AEL Limit - June 2020

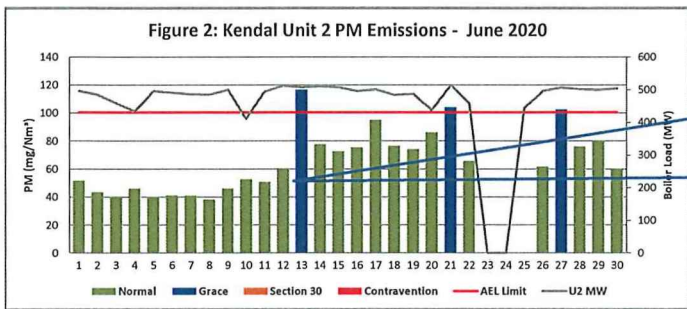
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
Unit 1	30	0	0	0	0	684.0
Unit 2	28	0	0	0	0	1 086.3
Unit 3	24	0	0	0	0	617.6
Unit 4	22	0	0	0	0	914.4
Unit 5	0	0	0	0	0	
Unit 6	30	0	0	0	0	1 011.4
SUM	134	0	0	0	0	

Table 6.5: Legend Description

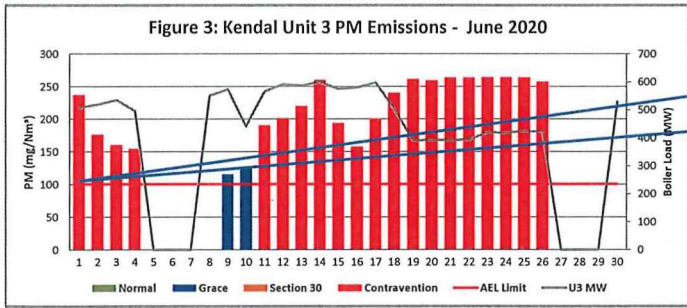
Condition	Colour	Description
Normal	Green	Emissions below Emission Limit Value (ELV)
Grace	Blue	Emissions above the ELV during grace period
Section 30	Orange	Emissions above ELV during a NEMA S30 incident
Contravention	Red	Emissions above ELV but outside grace or S30 incident conditions

Figure 1: Kendal Unit 1 PM Emissions - June 2020

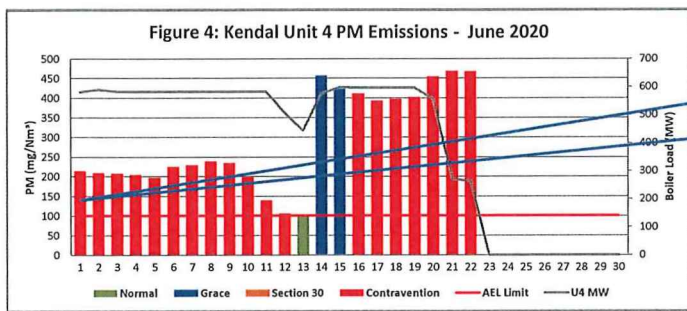




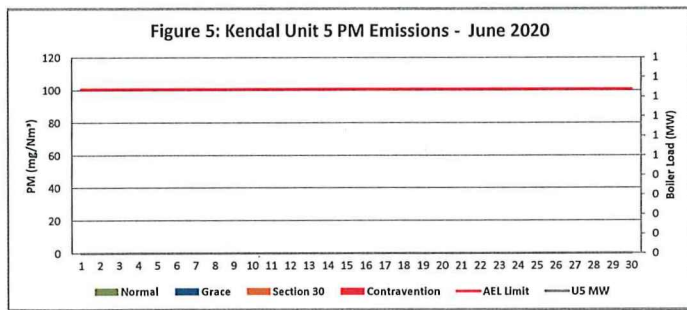
*High PM emissions can be attributed to poor availability of Dust Handling Plant resulting to ash backlogs causing poor performance of the electrostatic precipitators fields.*



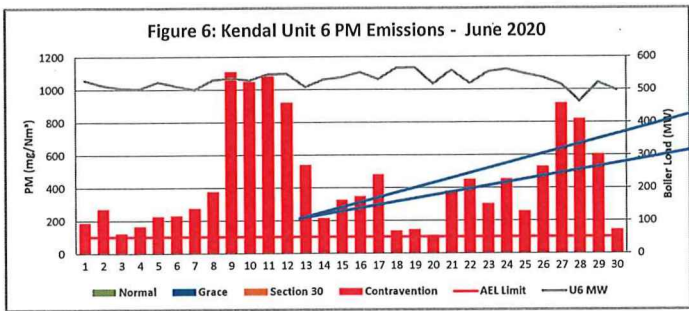
*Unit 3 high PM emissions can be attributed to poor availability of Dust Handling Plant resulting to ash backlogs causing poor performance of the electrostatic precipitators fields.*



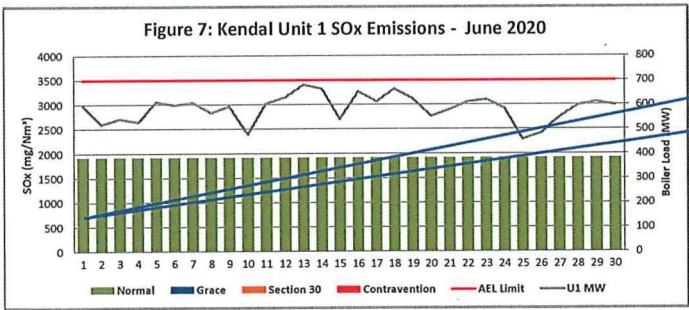
*Unit 4 high PM emissions can be attributed to poor availability of Dust Handling Plant resulting to ash backlogs causing poor performance of the electrostatic precipitators fields.*



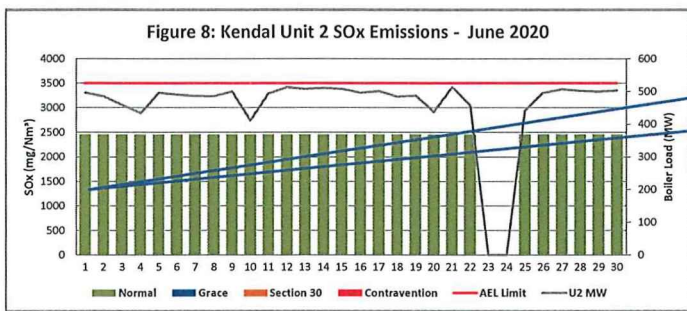




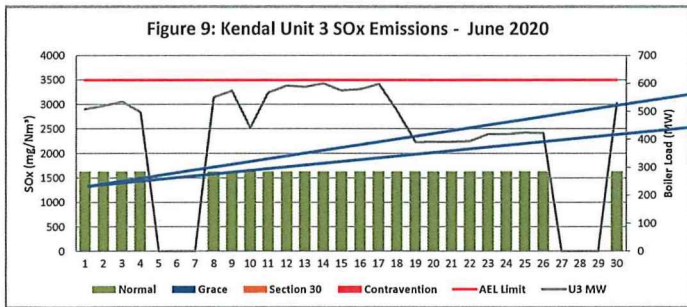
Unit 6 high PM emissions can be attributed to poor availability of Dust Handling Plant resulting to ash backlogs causing poor performance of the electrostatic precipitators fields.



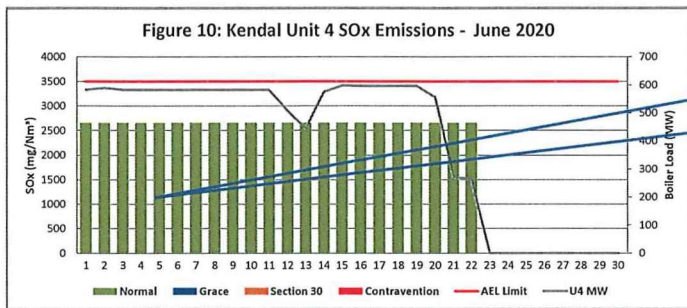
Note that gaseous emissions for units 1 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.



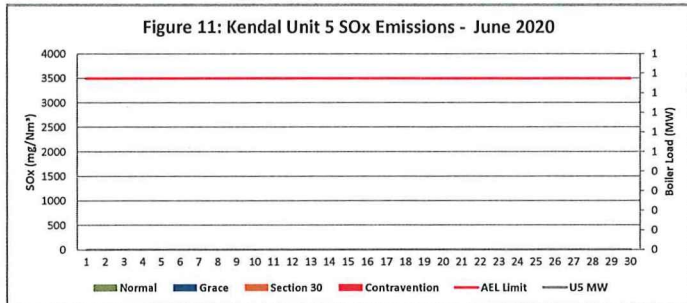
Note that gaseous emissions for unit 2 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.

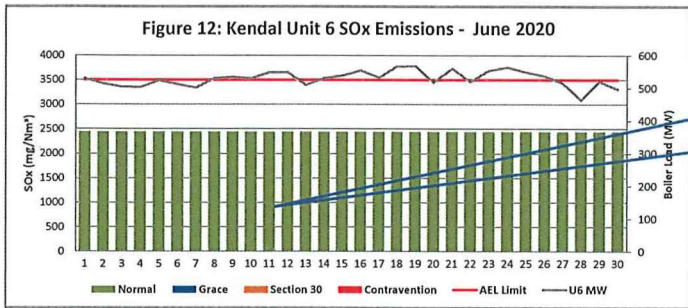


Note that gaseous emissions for unit 3 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.

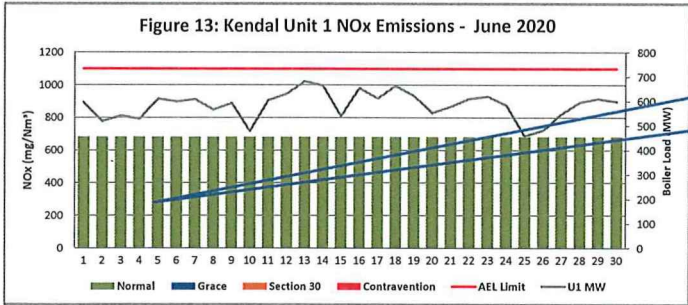


Note that gaseous emissions for unit 4 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.

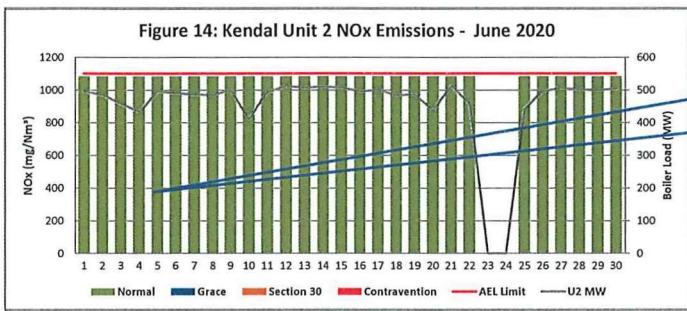




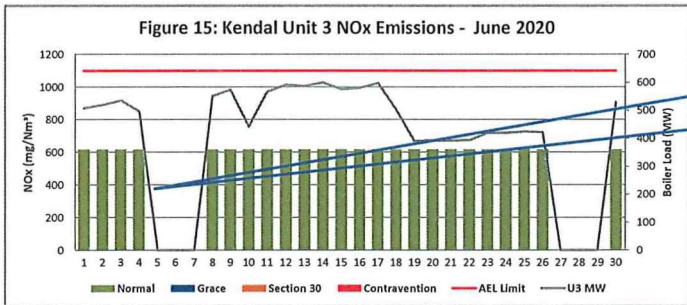
Note that gaseous emissions for unit 6 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.



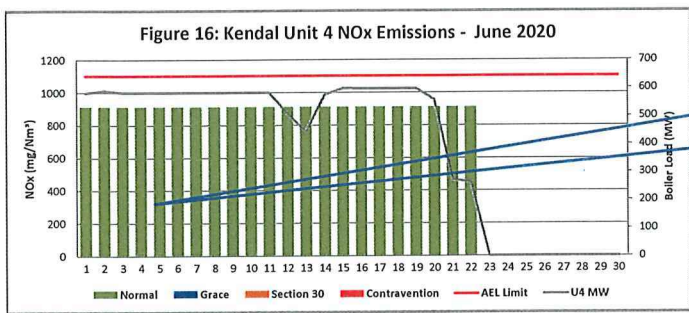
Note that gaseous emissions for unit 1 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.



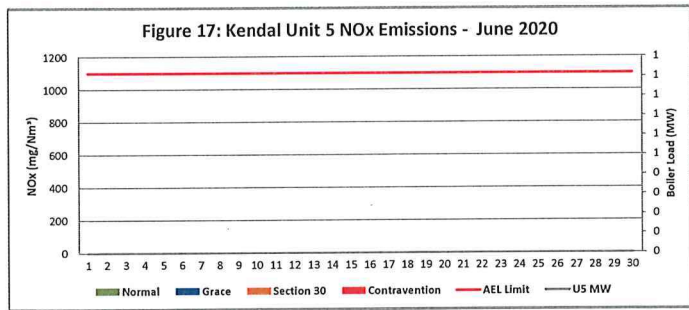
Note that gaseous emissions for unit 2 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.

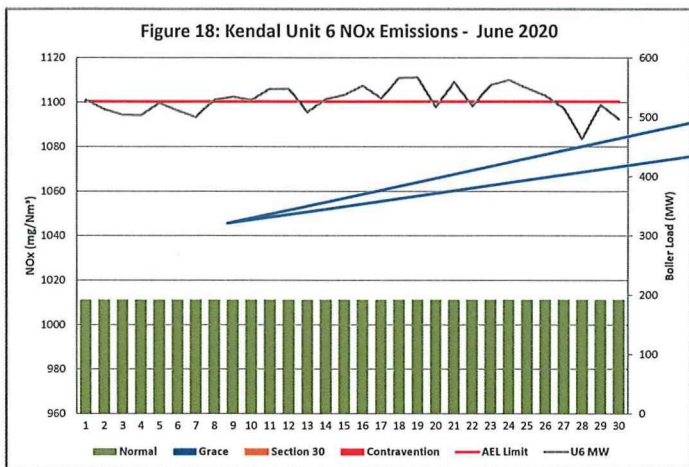


Note that gaseous emissions for unit 3 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.



Note that gaseous emissions for unit 4 were manually entered using independent third party QAL2 parallel test reports due to defective CEMS monitors.





Note that gaseous emissions for unit 6 were manually entered using Independent third party QAL2 parallel test reports due to defective CEMS monitors.

**7 COMMENTS**

Note that gaseous emissions for units 1,2,3, 4 & 6 were manually entered using Independent third party QAL2 parallel test reports due to defective CEMS monitors.

Unit 5 was still offload during the whole months of June 2020

Units 2,3,4 & 6 high PM emissions can be attributed to poor availability of Dust Handling Plant resulting to ash backlogs causing poor performance of the electrostatic precipitators fields.

Average SRM velocity values from the latest correlation report were used on the gaseous emissions on Unit 1, 2, 3 & 4 due to defective CEMS monitors and velocity correction factors were set M=1 and C=0

Average AMS velocity values from December 2019 correlation report were used for the gaseous emissions on unit 6 with the velocity correction factors

**8 COMPLAINTS**

There were no complaints for the months of June 2020