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Date
Dec 2022

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

Dear Ms Nembilwi

KUSILE POWER STATION'S MONTHLY EMISSIONS REPORT FOR NOVEMBER 2022

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 November 2022. Please take note that Unit 1 and 2 are off the grid due to the flue gas duct collapse incident and Unit 3 was only in operation on 01 Nov until 03 Nov 2022.

Hoping the above will meet your satisfaction.

Yours sincerely

Bongumusa A. Mashazi
GENERAL MANAGER
DATE: 29 December, 2022

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 Nov-2022
	Coal	Tons	1 818 083	89 986
	Fuel Oil	Tons	5 533	355.856
	Limestone	Tons	72 917	8642

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Nov-2022
	Energy	GWh	3214.08	509.62
	Ash	Tons	663 583	26 869.8
	Gypsum	Tons	129 250	4 839.5
	RE PM	kg/MWh	<i>not specified</i>	0.179
	RE SOx	kg/MWh	<i>not specified</i>	1.311

3. Energy source characteristics

Fuel Characteristic	Units	Stipulated Range	Monthly Average Content
Coal CV	MJ/kg	<i>not specified</i>	21 030
Coal Sulphur	%	1.3	0.840
Ash in Coal	%	38	29.860

4. Emissions Limits (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NOx
North	50	500	750
South	50	500	750

5. Abatement Technology (%)

Associated Unit/Stack	Technology Type	Efficiency Nov-2022	Technology Type	Efficiency Nov-2022
Unit 1	<i>Unit on outage</i>			
Unit 2	<i>Unit on outage</i>			
Unit 3	FFP	99.607%	FGD	99.393%
Unit 4	FFP	96.802%	FGD	98.775%

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

6. Monitor reliability (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	<i>Unit on outage</i>			
Unit 2	<i>Unit on outage</i>			
Unit 3	0.0	0.0	0.0	0.0
Unit 4	100.0	100.0	100.0	100.0

Note: Due to chimney flue gas incidents CEMS for Unit 1,2 and 3 was on available. Average value from QAL2 for U3 for period 01 Nov until 03 Nov 2022 was used.

7. Emission Performance

Table 7.1. Monthly tonnages for the month of November-2022

Associated Unit/Stack	PM	SO ₂	NO _x
Unit 1	Unit on outage		
Unit 2	Unit on outage		
Unit 3	2 2	60	84
Unit 4	89 2	608	924
SUM	91 4	668	1 008

Table 7 2. Operating days in compliance to PM AEL Limit - November 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	Unit on outage					
Unit 2	Unit on outage					
Unit 3	3	0	0	0	0	11 1
Unit 4	30	0	0	0	0	31 4
SUM	33	0	0	0	0	

Table 7 3 Operating days in compliance to SO₂ AEL Limit - November 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	Unit on outage					
Unit 2	Unit on outage					
Unit 3	3	0	0	0	0	306 3
Unit 4	30	0	0	0	0	204 9
SUM	33	0	0	0	0	

Table 7 4 Operating days in compliance to NO_x AEL Limit - November 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	Unit on outage					
Unit 2	Unit on outage					
Unit 3	3	0	0	0	0	426 5
Unit 4	30	0	0	0	0	314 0
SUM	33	0	0	0	0	

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

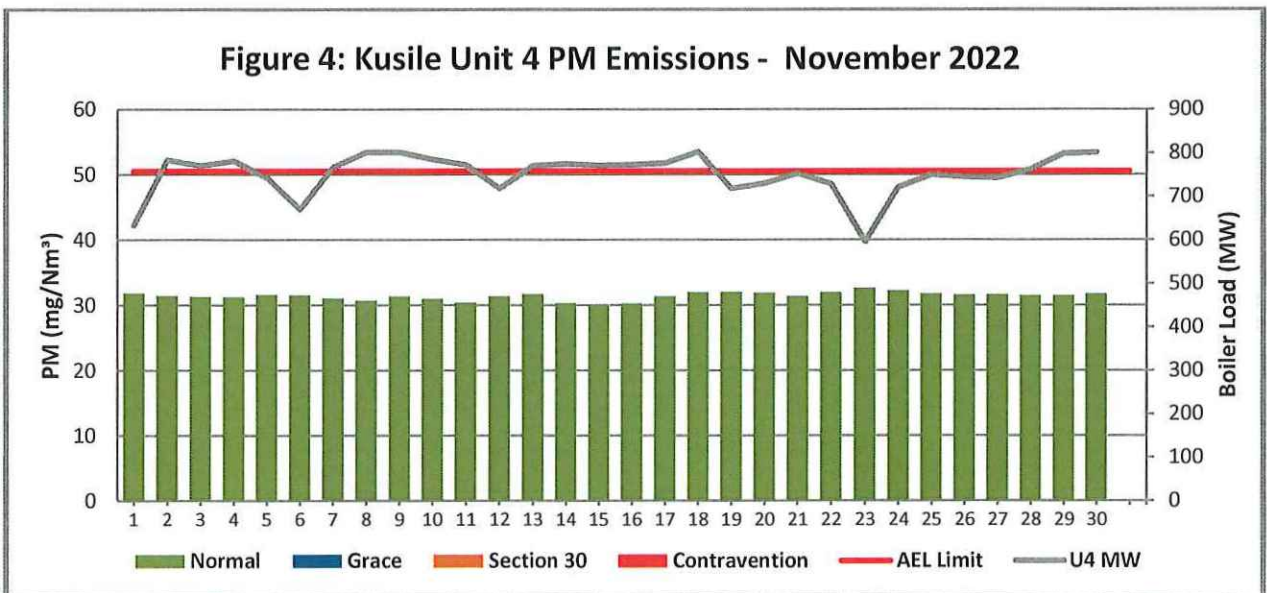
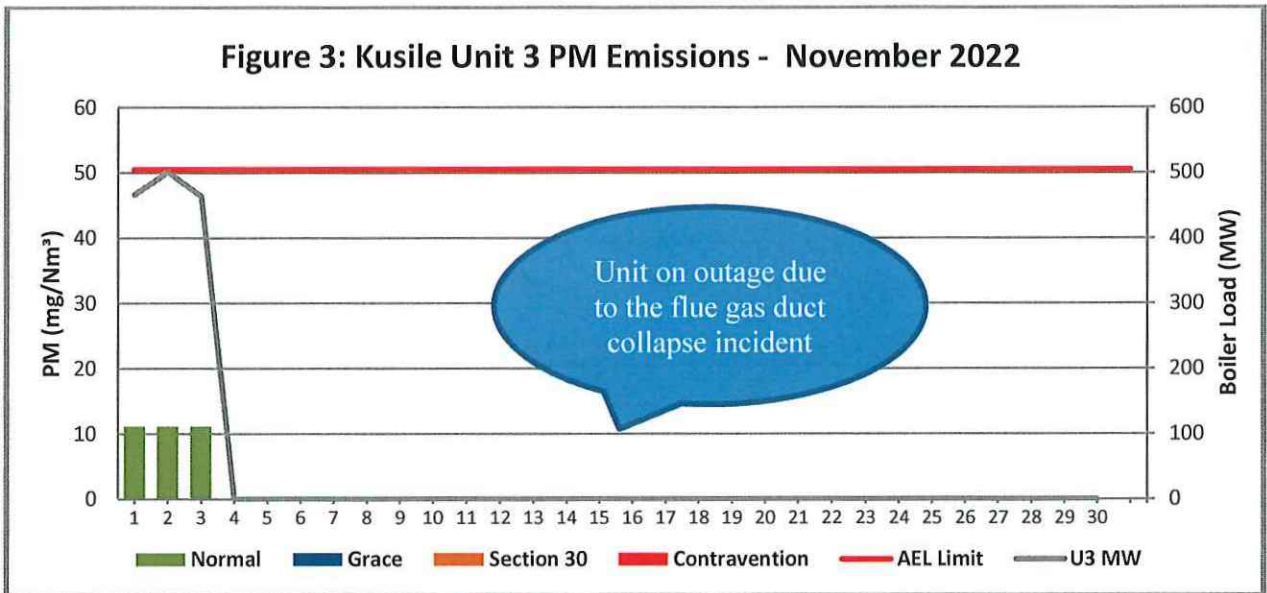


Figure 9: Kusile Unit 3 SO₂ Emissions - November 2022

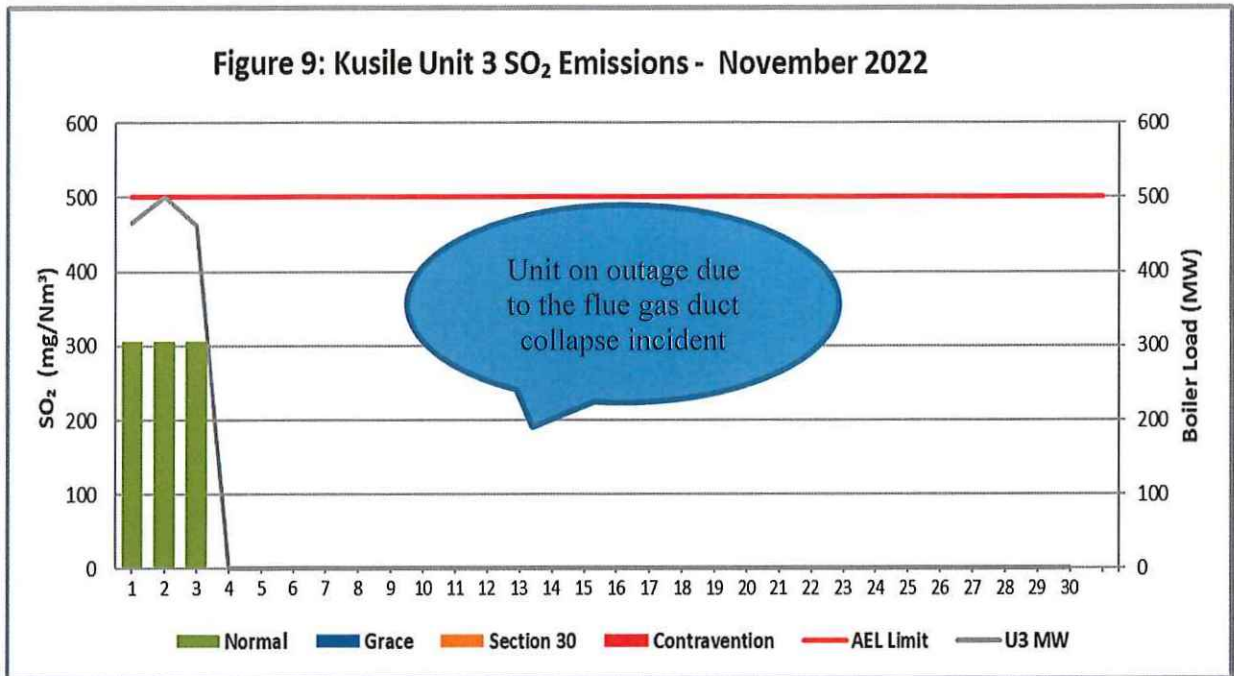


Figure 10: Kusile Unit 4 SO₂ Emissions - November 2022

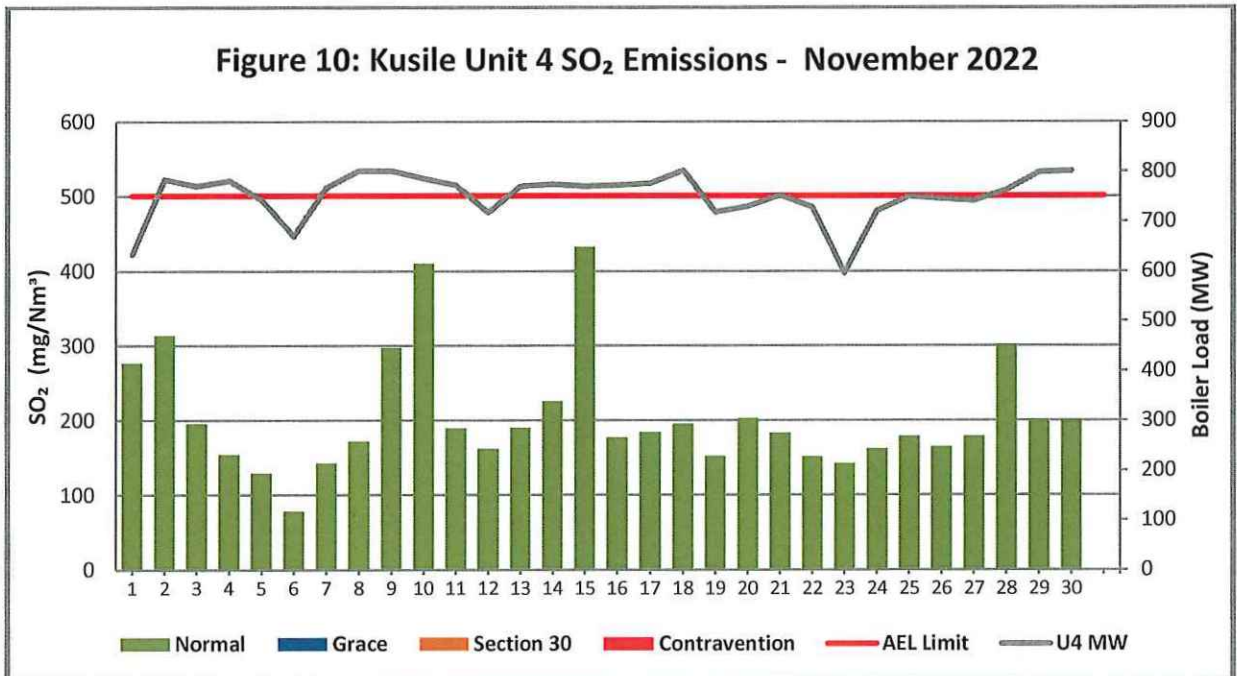


Figure 15: Kusile Unit 3 NOx Emissions - November 2022

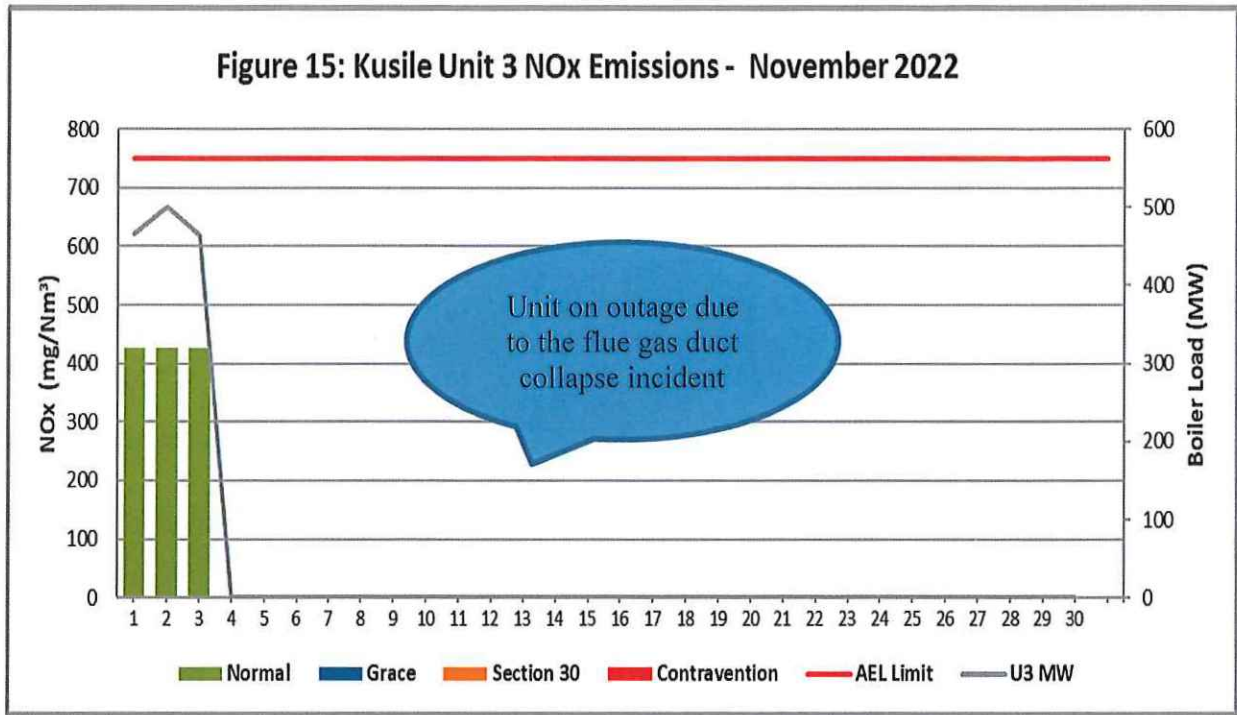
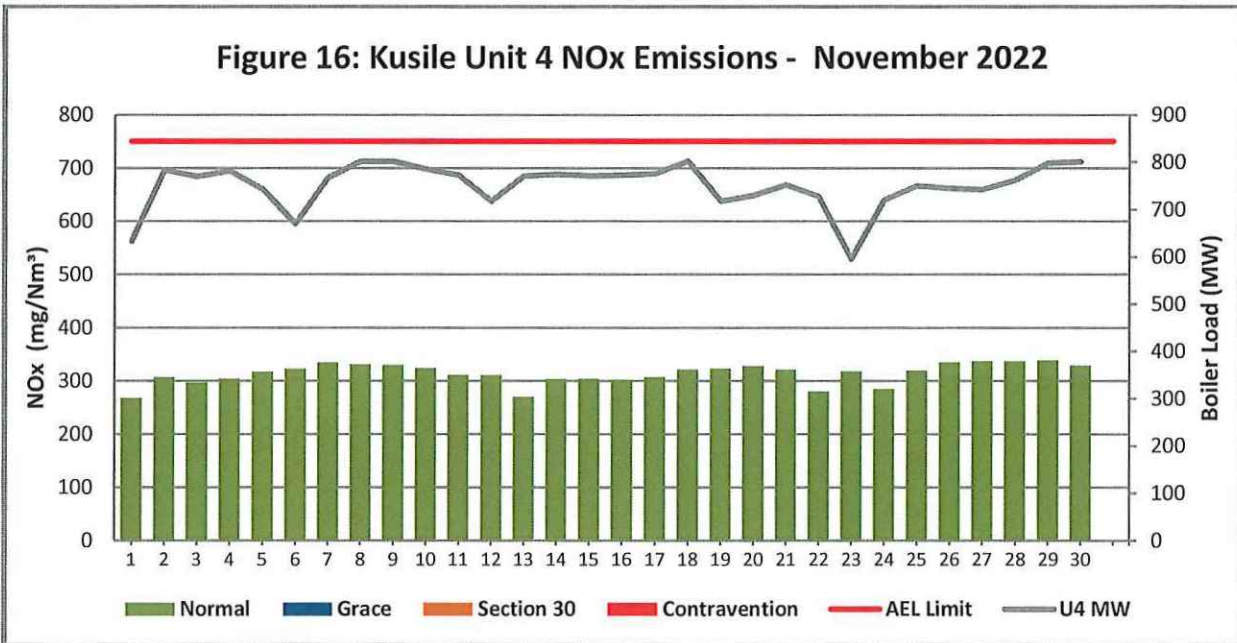


Figure 16: Kusile Unit 4 NOx Emissions - November 2022



8. Shut down and light up information

Unit No. 3	Event 1	
Breaker Open (BO)	11 55 pm	2022/11/03
Draught Group (DG) Shut Down (SD)	1 45 am	2022/11/04
BO to DG SD (duration)	00 01 50	DD HH MM
Fires in time		
Synch. to Grid (or BC)		
Fires in to BC (duration)		DD HH MM
Emissions below limit from BC (end date)		
Emissions below limit from BC (duration)		DD HH MM

Unit No. 4	Event 1		Event 2	
Breaker Open (BO)	BO previously	BO previously	4 25 am	2022/11/12
Draught Group (DG) Shut Down (SD)	n/a	n/a	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD HH MM	n/a	DD HH MM
Fires in time			7 20 am	2022/11/12
Synch. to Grid (or BC)			8 10 am	2022/11/12
Fires in to BC (duration)		DD HH MM	00 00 50	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

9. Complaints

No complaints reported for the month of Nov 2022

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						