



Ms Nompumelelo Simelane
Nkangala District Municipality
PO Box 437
Middleburg
1050

Date:

March 2024

Enquiries: Lesiba Kgobe
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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 SEPTEMBER 2023

Resubmission of monthly emissions report for September 2023. Please take note that Unit 1 and 2 were off due to flue gas duct collapse incident that occurred in Oct 2022.

Hoping the above will meet your satisfaction.

Yours sincerely

Christopher Nani
ACTING GENERAL MANAGER
DATE: *3/4/2024*

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	Max Permitted Consumption Rate	Consumption Rate Sep-2023
	Coal	Tons	1 818 083	88 195
	Fuel Oil	Tons	5 533	45.017
	Limestone	Tons	72 917	3776
Production Rates	Product / By-Product Name	Units	Max Production Capacity Permitted	Indicative Production Rate Sep-2023
	Energy	GWh	3 321.216	179.143
	Ash	Tons	663 583	25 488.364
	Gypsum	Tons	129 250	2 114.600
	RE PM	kg/MWh	not specified	0.017
	RE SO ₂	kg/MWh	not specified	1.131

3 Energy source characteristics

Fuel Characteristic	Units	Stipulated Range	Monthly Average Content
Coal Sulphur	%	1.3	1.000
Ash in Coal	%	38	28.900
Fuel Oil Sulphur	%	3.5	2.290
Ash in FO	%	0.02	0.012

4 Emissions Limits (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
East	50	3500	750
West	50	1000	750

5 Abatement Technology (%)

Associated Unit/Stack	Technology Type	Efficiency Sep-2023	Utilisation Sep - 2023	Technology Type	Efficiency Sep-2023	Utilisation Sep - 2023
Unit 1	FFP	Off	Off	FGD	Out of service	Out of service
Unit 2	FFP	Off	Off	FGD	Out of service	Out of service
Unit 3	FFP	Off	Off	FGD	Out of service	Out of service
Unit 4	FFP	99.987%	100%	FGD	99.894%	100%

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

6. Monitoring reliability (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	Off	Off	Off
Unit 2	Off	Off	Off
Unit 3	Exempt	93.1	100.0
Unit 4	100.0	96.4	100.0

7. Emissions Performance

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

Associated Unit/Stack	PM	SO ₂	NO _x
Unit 1	Off	Off	Off
Unit 2	Off	Off	Off
Unit 3	Exempt	36	7
Unit 4	3.0	167	364
SUM	3.0	203	371

Table 7.2: Operating days in compliance to PM AEL Limit - September 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	Off	Off	Off	Off	Off	Off
Unit 2	Off	Off	Off	Off	Off	Off
Unit 3	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt
Unit 4	13	0	0	0	0	4.3
SUM	13	0	0	0	0	

Table 7.3: Operating days in compliance to SO₂ AEL Limit – September 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	Off	Off	Off	Off	Off	Off
Unit 2	Off	Off	Off	Off	Off	Off
Unit 3	1	0	0	0	0	1 603.4
Unit 4	14	0	0	0	0	194.1
SUM	15	0	0	0	0	

Table 7.4: Operating days in compliance to NO_x AEL Limit – September 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	Off	Off	Off	Off	Off	Off
Unit 2	Off	Off	Off	Off	Off	Off
Unit 3	1	0	0	0	0	336.8
Unit 4	14	0	0	0	0	440.0
SUM	15	0	0	0	0	

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 3: Kusile Unit 3 PM Emissions - September 2023

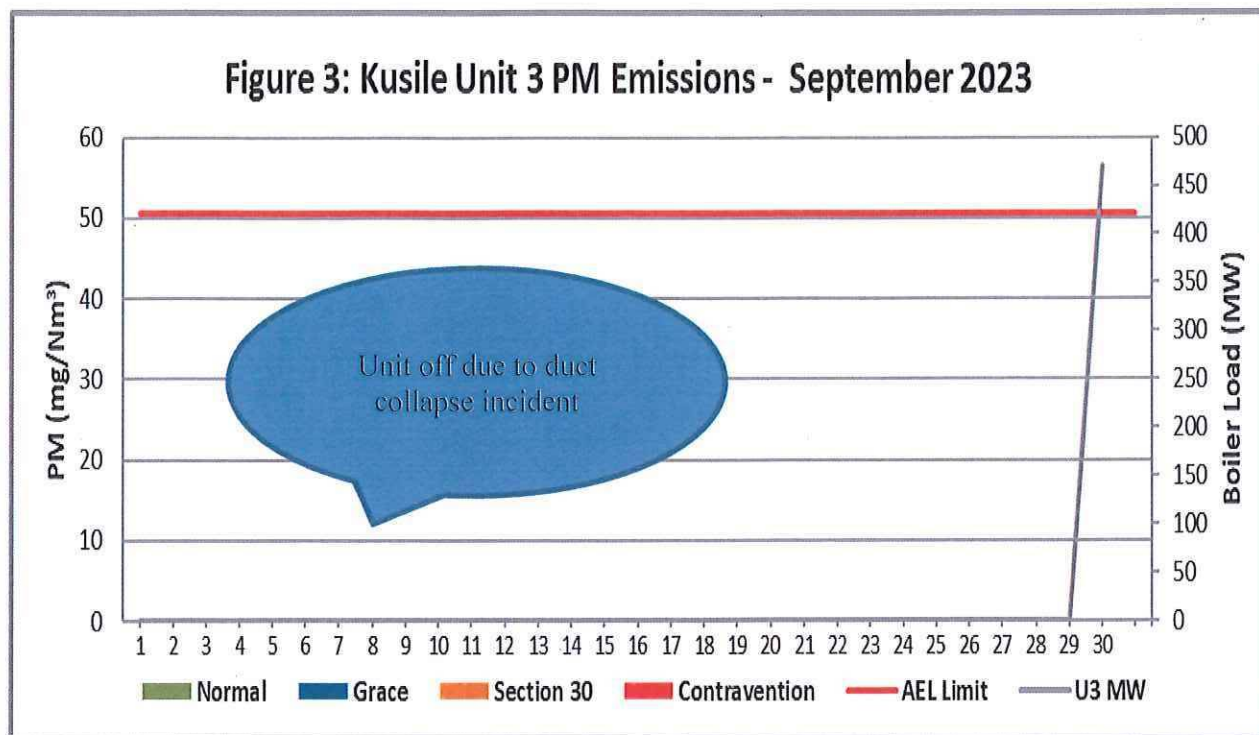


Figure 4: Kusile Unit 4 PM Emissions - September 2023

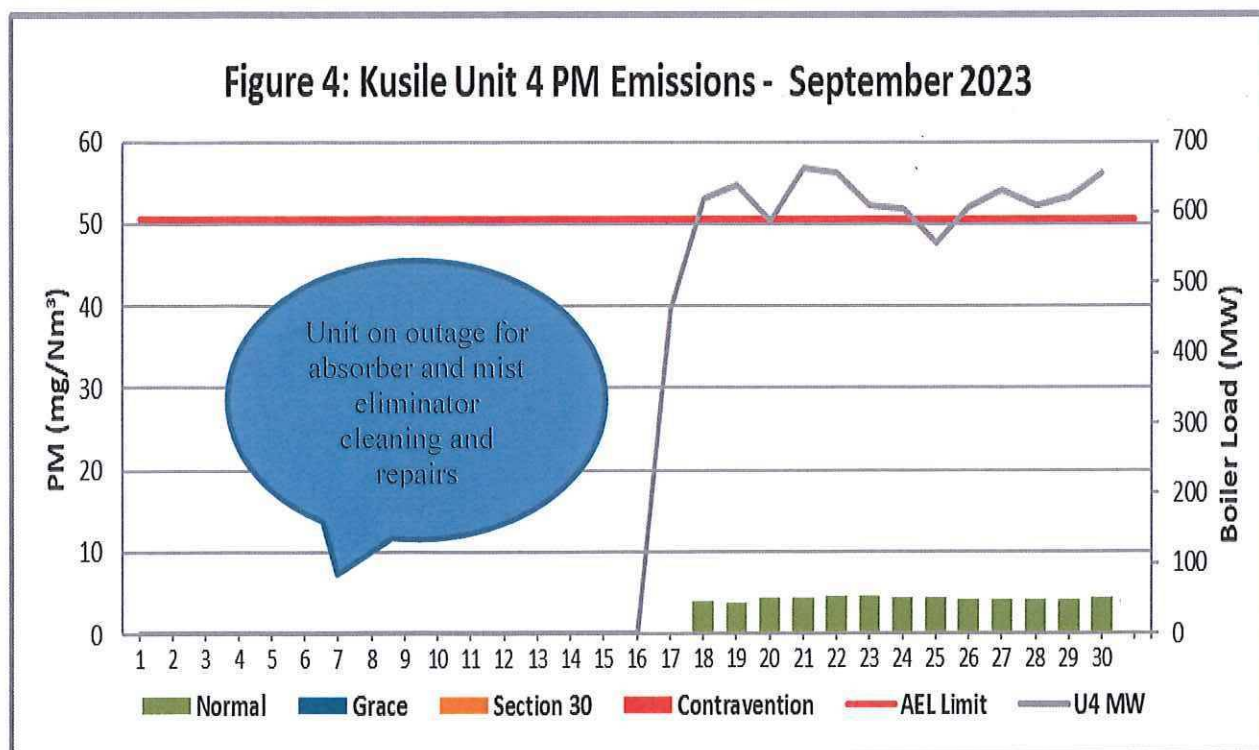


Figure 9: Kusile Unit 3 SO₂ Emissions - September 2023

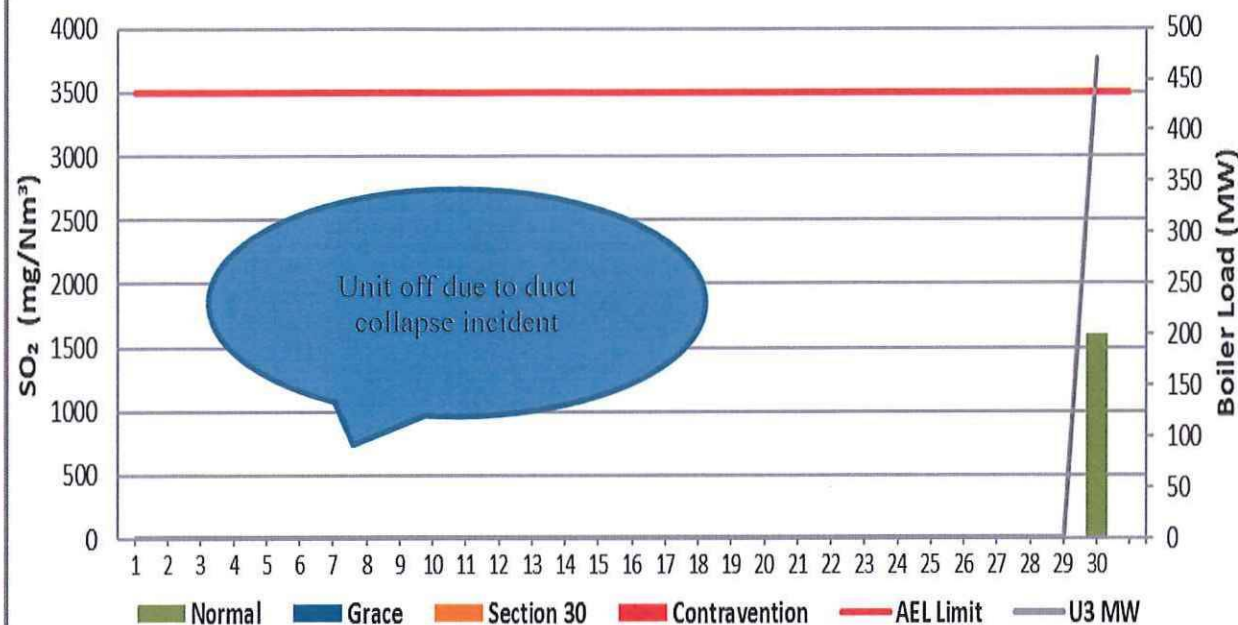
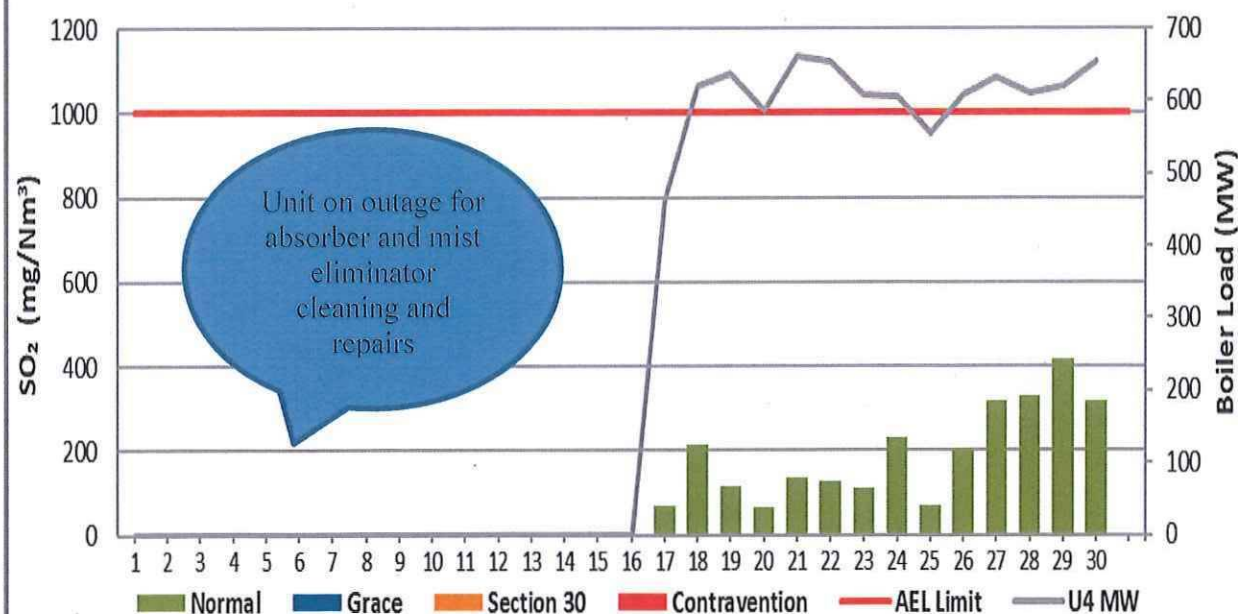
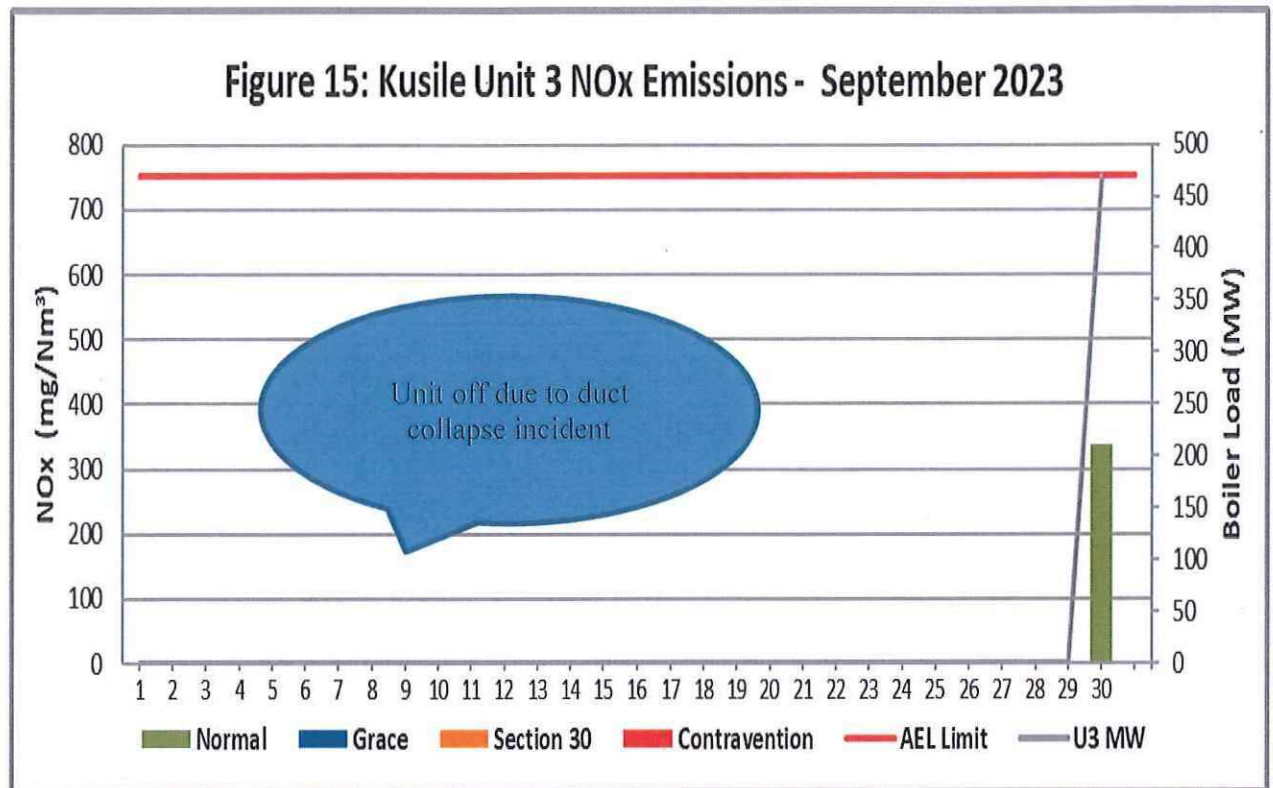
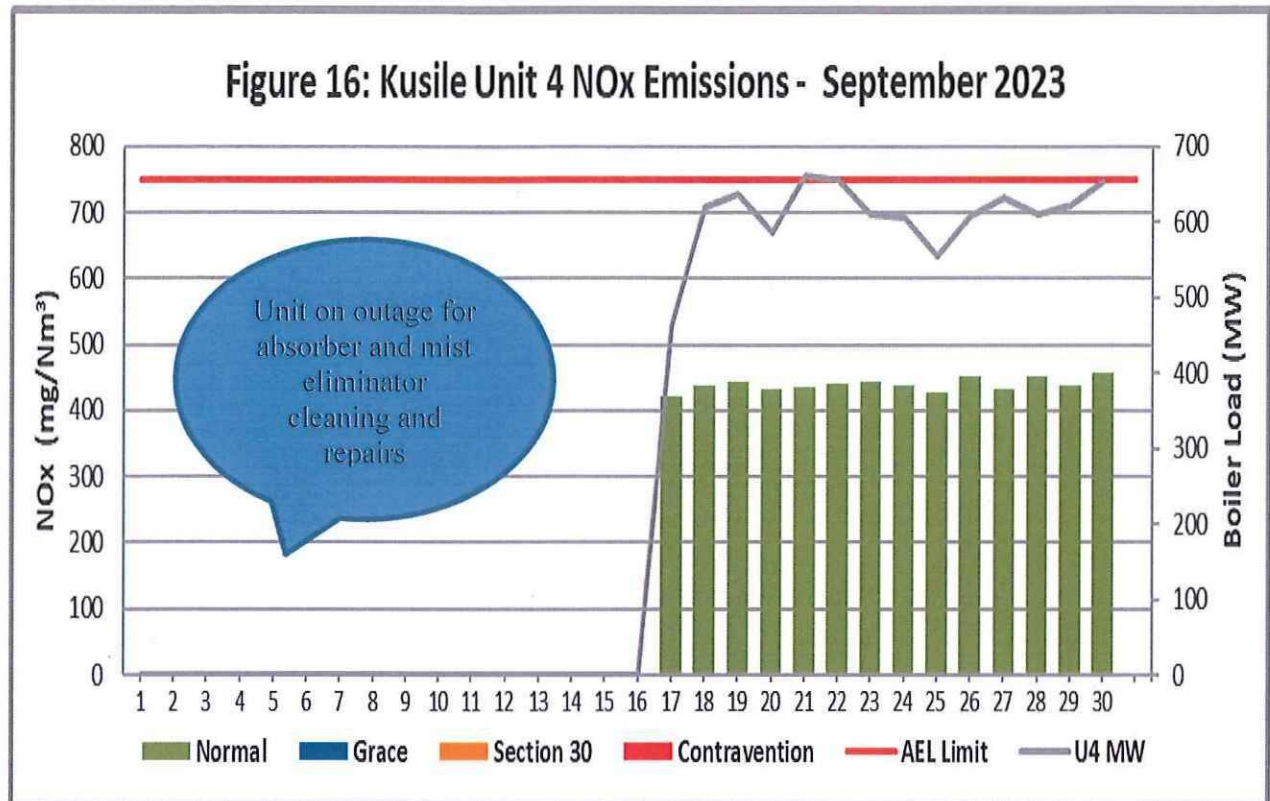


Figure 10: Kusile Unit 4 SO₂ Emissions - September 2023







8. Shut down and Light up information

Unit No. 3	Event 1	
Breaker Open (BO)	BO previously	BO previously
Draught Group (DG) Shut Down (SD)	n/a	n/a
BO to DG SD (duration)	n/a	DD:HH:MM
Fires in time	4:16 am	2023/09/29
Synch. to Grid (or BC)	2:19 pm	2023/09/30
Fires in to BC (duration)	01:10:03	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

9. Complaints

Unit No. 4	Event 1		Event 2	
Breaker Open (BO)	BO previously	BO previously	12:25 am	
Draught Group (DG) Shut Down (SD)	n/a	n/a	5:05 am	2023/09/19
BO to DG SD (duration)	n/a	DD:HH:MM	00:04:40	DD:HH:MM
Fires in time	4:52 am	2023/09/17	5:30 am	2023/09/19
Synch. to Grid (or BC)	9:40 am	2023/09/17	5:35 am	2023/09/19
Fires in to BC (duration)	00:04:48	DD:HH:MM	00:00:05	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

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
No complaints reported for the month of September 2023						