

Dan Hlanyane
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Gert Sibande District Municipality
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Date:
13 March 2024

Enquiries:
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Dear Mr. Hlanyane

TUTUKA POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF FEBRUARY 2024.

This serves as the monthly report required in terms of Section 7.4 in Tutuka Power Station's Atmospheric Emission License (16/4/Lekwa/Eskom H SOC Ltd TPS/0013/2019/F03 Dated 25 April 2019). The emissions are for the month of February 2024. Verified emissions of particulates matter, SO_x and NO_x are also included.

1. RAW MATERIALS

Raw Materials and Products	Raw Material type	Units	Max. Permitted	Actual Consumption
	Coal	Tons	1 200 000	250 322.26
	Fuel Oil	Tons	10 000	5 699.61
Production Rates	Product/By-Product Name	Units	Mx. Production Capacity Permitted	Indicative production rate
	Energy	GWh	2 5727.200	444.6
	Ash	Tons	350 000	64057
	Re Ash	Kg/MWh	Not specified	1.02

Note: Maximum energy rate is as per the maximum capacity stated in the AEL:[30748MW]/12x 24hrsx 31days in month/1000 to convert to GWh.

2. ENERGY SOURCES CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	21 190
Sulphur Content	%	0.6 TO >2.6	0.890
Ash Content	%	21 TO >33	25.590

3. EMISSIONS LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
Unit 1	300	3400	1200
Unit 2	300	3400	1200
Unit 3	300	3400	1200
Unit 4	300	3400	1200
Unit 5	300	3400	1200
Unit 6	300	3400	1200

4. ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Feb-2024
Unit 1	Electro Static Precipitators (ESP)	-233.9%
Unit 2	Electro Static Precipitators (ESP)	-393.5%
Unit 3	Electro Static Precipitators (ESP)	-410.7%
Unit 4	Electro Static Precipitators (ESP)	Unit Off
Unit 5	Electro Static Precipitators (ESP)	Unit Off
Unit 6	Electro Static Precipitators (ESP)	Unit Off

Note: The ESP does not have bypass mode operating, hence plant considered 100% Utilised

5. MONITOR RELIABILITY

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	99.7	100.0	100.0	93.9
Unit 2	100.0	85.4	19.6	83.6
Unit 3	100.0	73.4	71.7	73.4
Unit 4	Off	Off	Off	Off
Unit 5	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off

6. EMISSION PERFORMANCE

Table 6 1 Monthly tonnages for the month of February-2024

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	76 0	1 029	384
Unit 2	127 1	1 251	601
Unit 3	251 1	2 898	1 524
Unit 4	Off	Off	Off
Unit 5	Off	Off	Off
Unit 6	Off	Off	Off
SUM	454 3	5 177	2 509

Table 6 2 Operating days in compliance to PM AEL limit - February 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	14	0	0	0	0	149 3
Unit 2	13	0	0	0	0	177 6
Unit 3	28	0	0	0	0	164 1
Unit 4	Off	Off	Off	Off	Off	Off
Unit 5	Off	Off	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off	Off	Off
SUM	55	0	0	0	0	

Table 6 3 Operating days in compliance to SO₂ AEL Limit - February 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	16	0	0	0	0	1 965 7
Unit 2	14	0	0	0	0	1 866 0
Unit 3	28	0	0	0	0	1 904 5
Unit 4	Off	Off	Off	Off	Off	Off
Unit 5	Off	Off	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off	Off	Off
SUM	58	0	0	0	0	

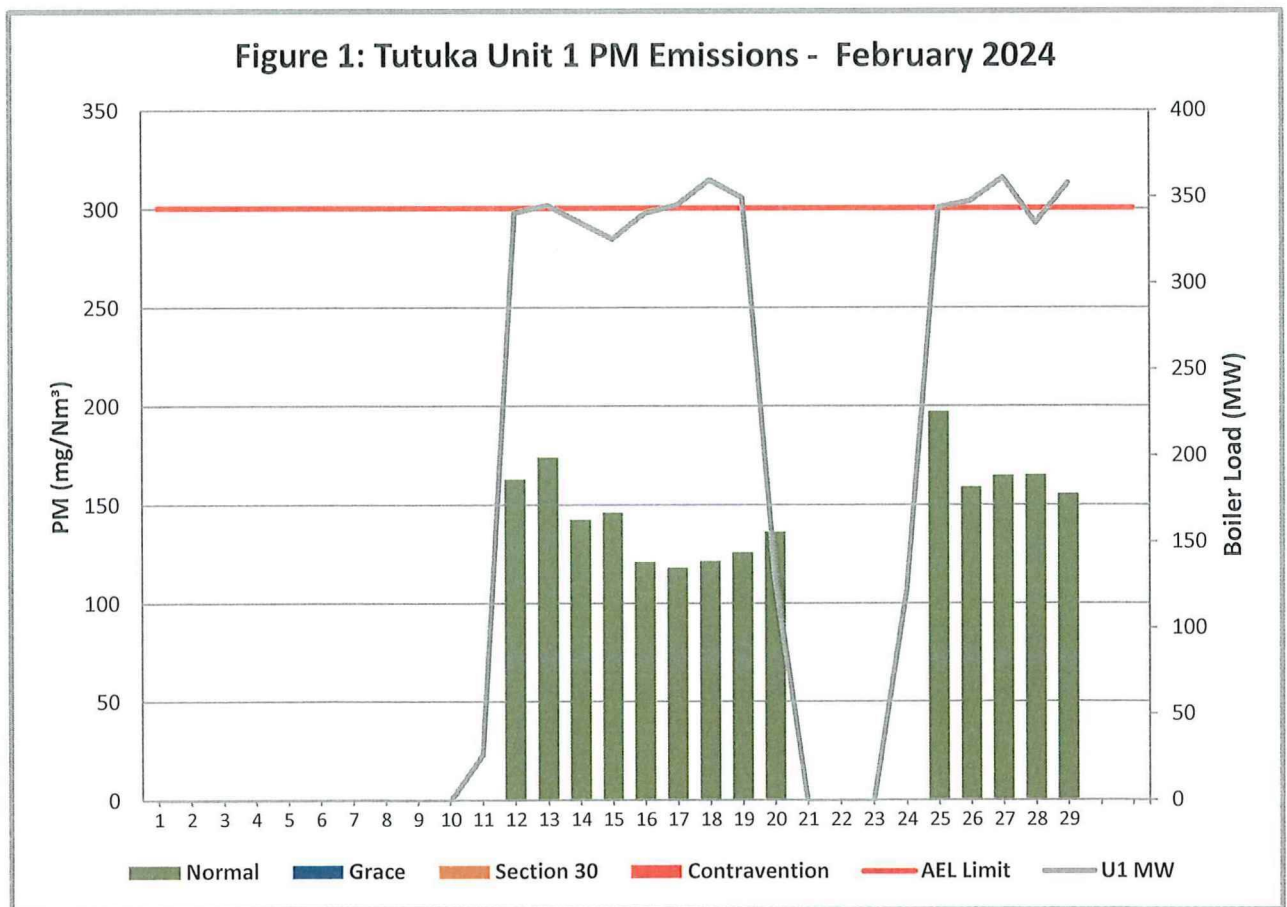
Table 6.4: Operating days in compliance to NOx AEL Limit - February 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	16	0	0	0	0	713.4
Unit 2	14	0	0	0	0	806.3
Unit 3	28	0	0	0	0	1 006.1
Unit 4	Off	Off	Off	Off	Off	Off
Unit 5	Off	Off	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off	Off	Off
SUM	58	0	0	0	0	

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO₂

Table 6.5: Legend

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



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Figure 2: Tutuka Unit 2 PM Emissions - February 2024

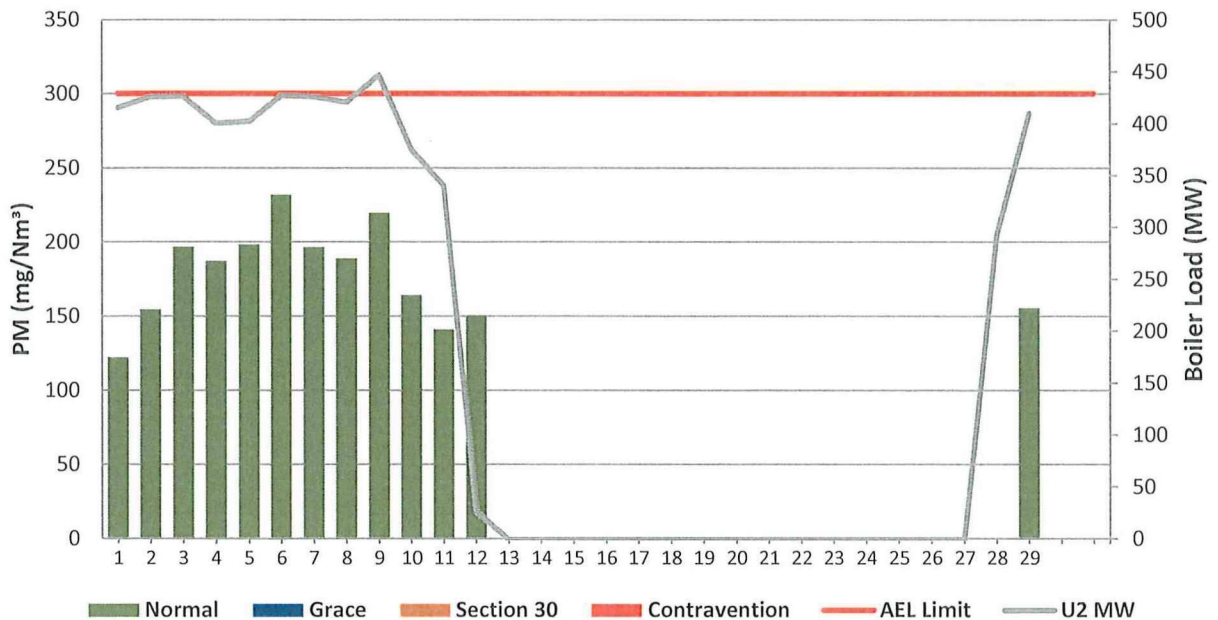
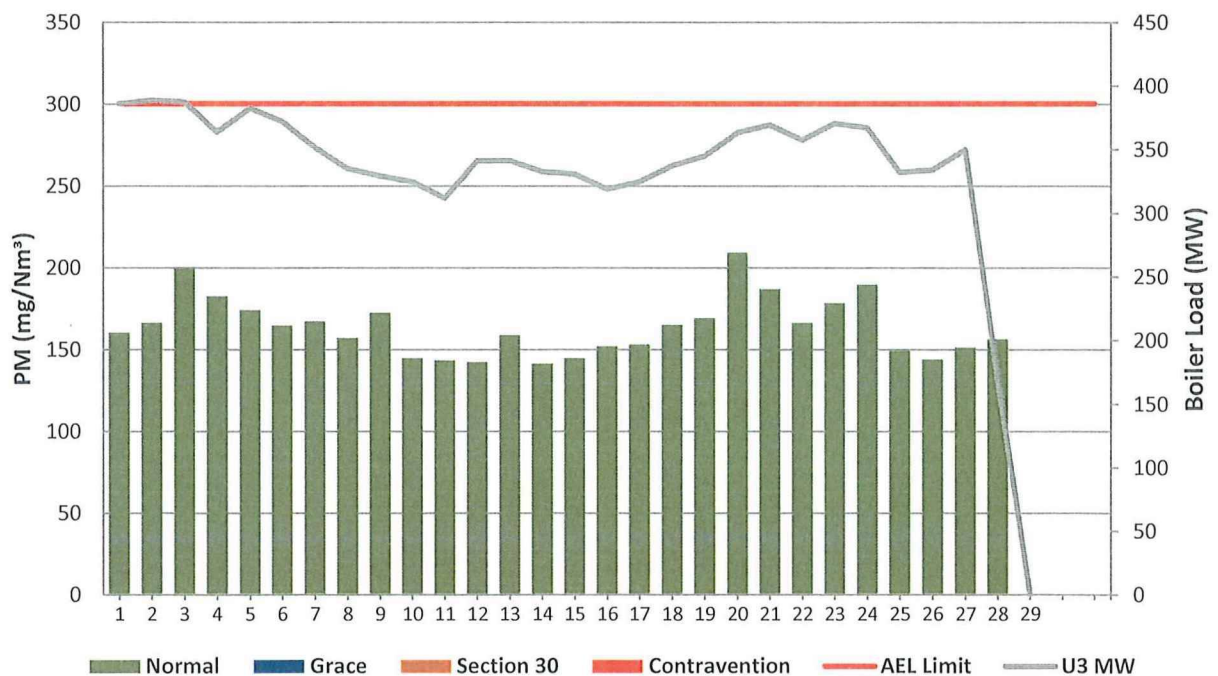


Figure 3: Tutuka Unit 3 PM Emissions - February 2024



Note: Unit 4,5 and 6 were not on load in February 2024

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Figure 7: Tutuka Unit 1 SO₂ Emissions - February 2024

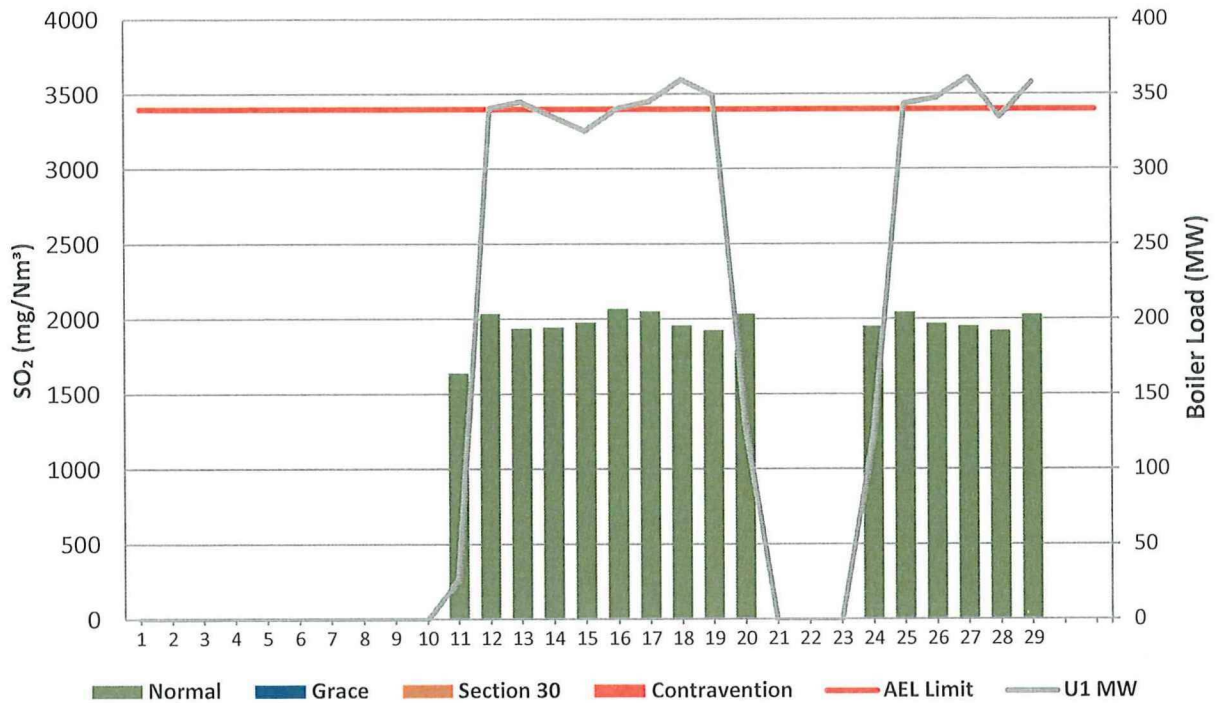
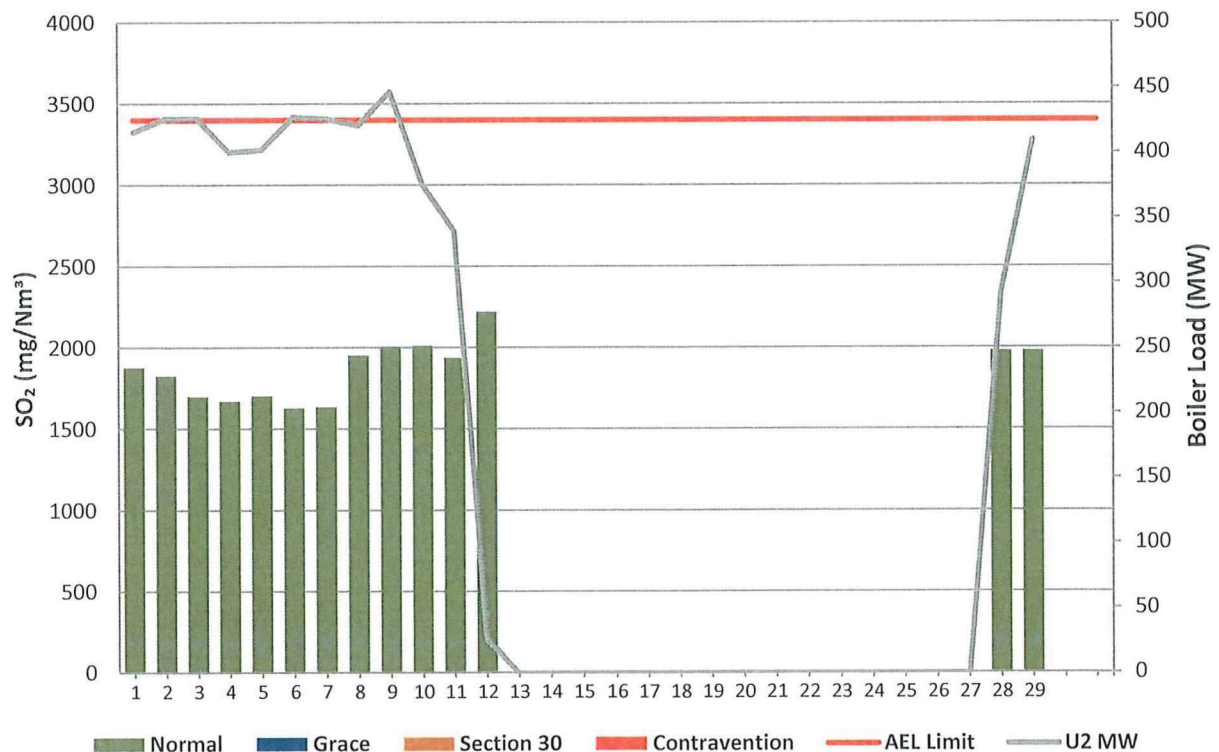


Figure 8: Tutuka Unit 2 SO₂ Emissions - February 2024



Generation

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 Private Bag X2016 Standerton 2430 SA
 Tel +27 17 749 9237 www.eskom.co.za
 Eskom Holdings SOC Ltd Reg No 2002/015527/30

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Figure 9: Tutuka Unit 3 SO₂ Emissions - February 2024

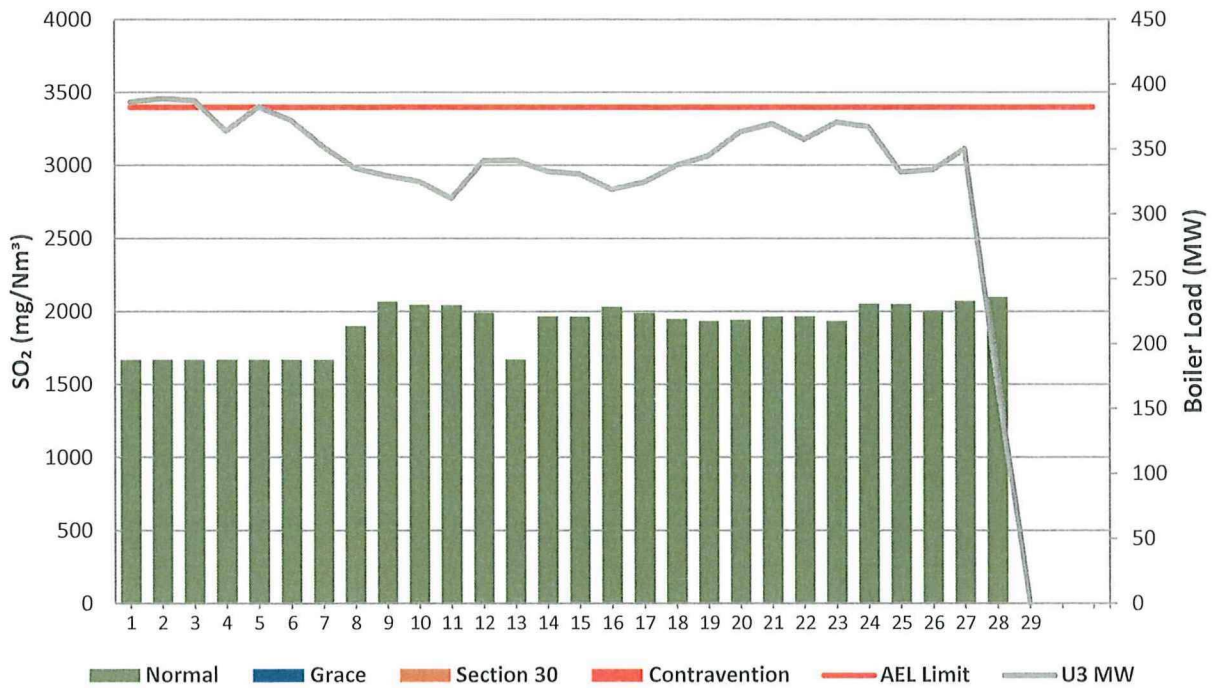
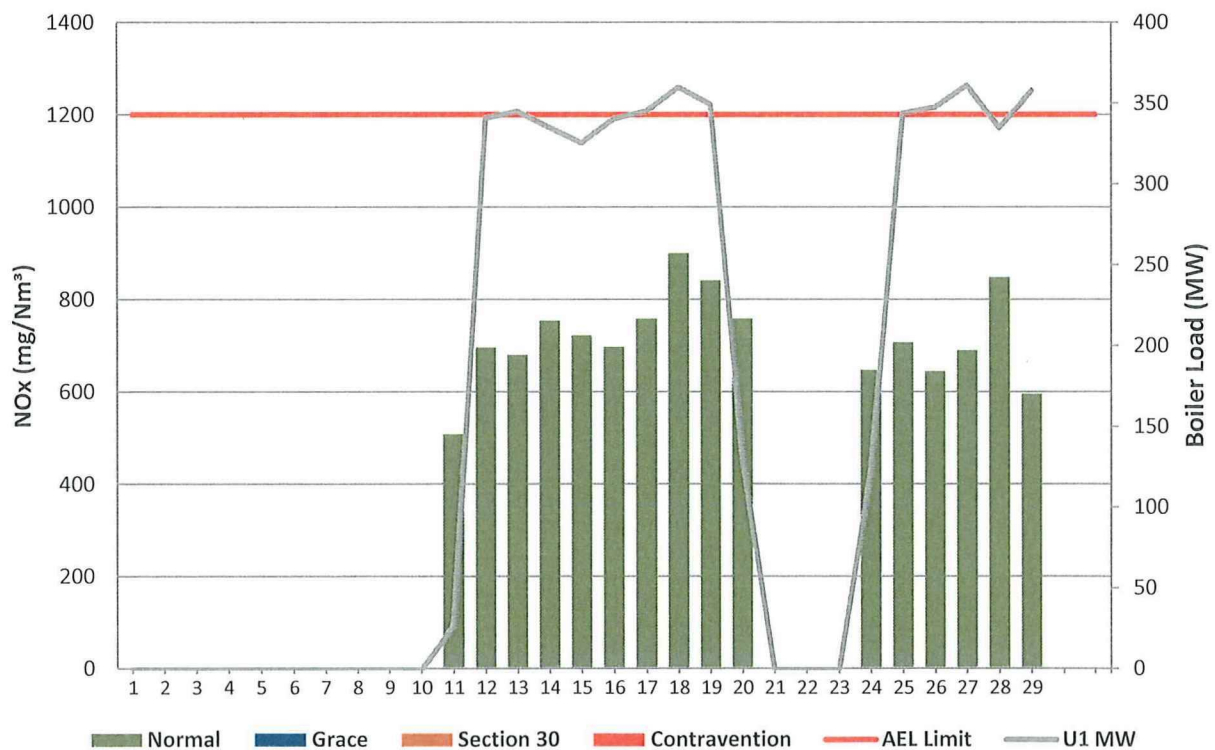


Figure 13: Tutuka Unit 1 NO_x Emissions - February 2024



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Figure 14: Tutuka Unit 2 NOx Emissions - February 2024

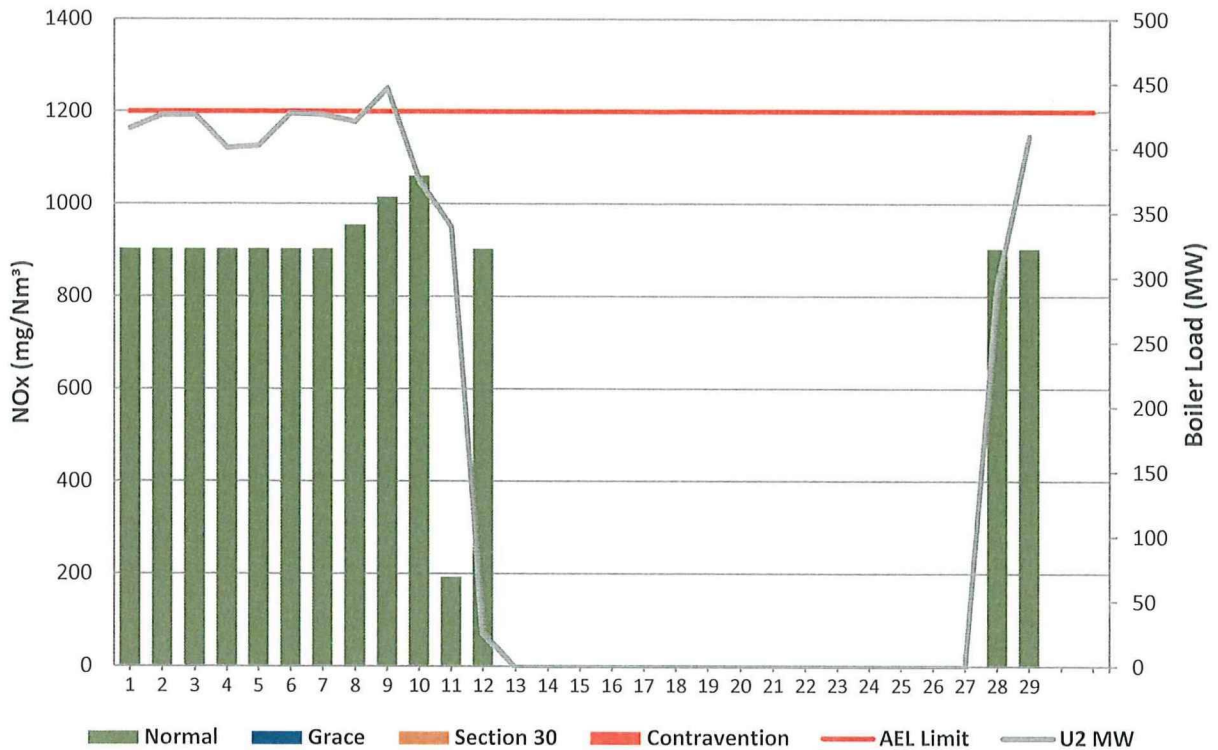
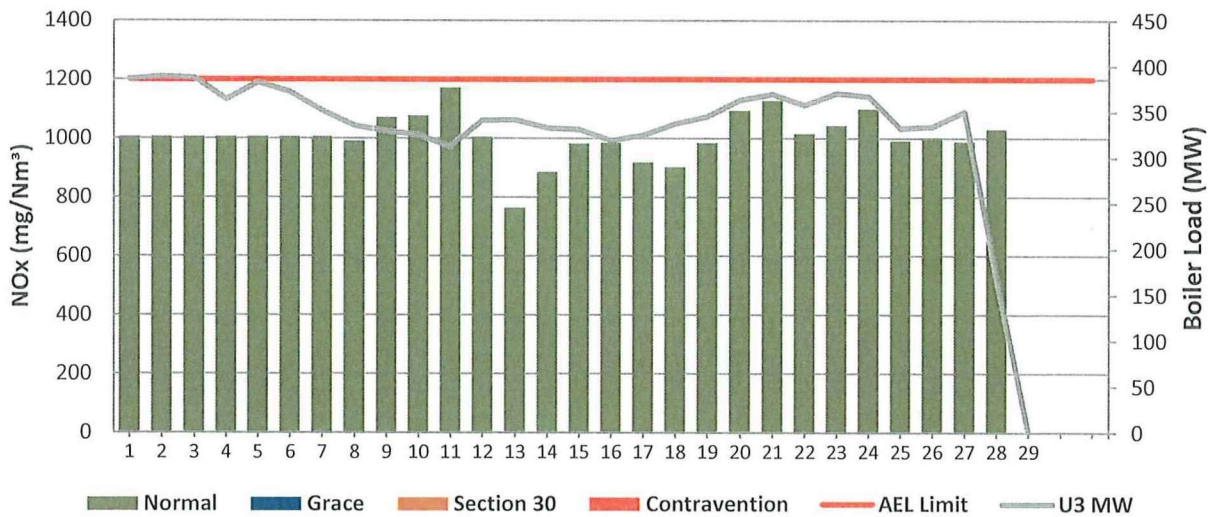


Figure 15: Tutuka Unit 3 NOx Emissions - February 2024



Light up information

PM Start-up information for the month of fabricate February 2024

Number & Type of Starts	Unit	1	2	3	4	5	6
Number Of Hot Starts (Off-Load < 30 Hrs)	-	0.00	0.00	0.00	0.00	0.00	0.00
Number Of Cold Starts (Off-Load > 30 hrs)	-	0.00	0.00	0.00	0.00	0.00	0.00

General

Particulate matter (PM10) emissions on unit 01, 02, and 03 were within the daily limit during the month of February 2024 Unit 4,5 and 6 were off-load as indicated on the graphs above The gaseous SOx emissions on unit 01, 02 and 03 were within the daily limit and U3 O2 is 0% reliable, so it's affecting the Nox limits, the station is busy with the parallel test

7. COMPLAINTS REGISTER

Source Code/Name	Root Cause Analysis	Calculation of impacts/emissions associated with the incident	Dispersion modelling of pollutants where applicable	Measures implemented to prevent recurrence	Date by which measure will be implemented
No Complaints received for the month of February 2024					

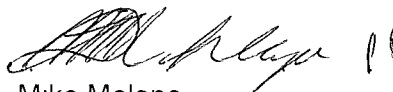
Tutuka Power station reiterate its commitment to comply with the atmospheric emission license, which to us is not just a matter of compliance, but also a commitment which is core in our principles of doing business

Compiled by



Monica Mokgawa

Verified by



Mike Molepo

**ENVIRONMENTAL
POWER STATION**

MANAGER: TUTUKA

**SENIOR CHEMIST (BOILER ENGINEERING):
TUTUKA POWER STATION**

Approved by



Bruce Moyo

GENERAL MANAGER: TUTUKA POWER STATION