JANUARY 2024

HENDRINA POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License 17/4/AEL/MP312/11/16

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted Consumption Rate	Consumption Rate Jan-2024
	Coal	Tons	*820,000*	*119,141.0*
	Fuel Oil	Tons	*3,200*	*624 066*
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jan-2024
	Energy	GWh	*1488*	*192.04*
	Ash	Tons	*290,000*	*27,665*
	RE PM	kg/MWh	*not specified*	*0.208*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.6 to < 1*	*0.68*
Ash Content	%	*20 to < 35*	*23.22*

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO_2	NOx
North	*75*	*3500*	*1200*
South	*75*	*3500*	*1200*

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jan-2024
Unit 1	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 2	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 3	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 4	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 5	*Fabric Filter Plant (FFP)*	*99.928%*
Unit 6	*Fabric Filter Plant (FFP)*	*99.936%*
Unit 7	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 8	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 9	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 10	*Fabric Filter Plant (FFP)*	*Unit Off-line*

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	O_2	CO2
North	97 9	100 0	100 0	99 8	0
South	99 6	0 0	0 0	99 9	0

Note NOx emissions is measured as NO in PPM Final NOx value is expressed as total NO_2

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SOx (tons)	NOx (tons)
North	8 4	1,283 6	828 3
South	31 5	0 0	0 0
SUM	40 0	1,283 6	828 3

Table 6 2 Operating days in compliance to PM AEL Limit - January 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
North	26	0	0	0	0	18 1
South	31	0	0	0	0	48 1
SUM	57	0	0	0	0	

Table 6 3 Operating days in compliance to SO_2 AEL Limit - January 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
North	27	0	0	0	0	2,519 0
South	0	0	0	0	0	
SUM	27	0	0	0	0	

Table 6 4 Operating days in compliance to NOx AEL Limit - January 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
North	3	0	0	24	24	1,576 0
South	0	0	0	0	0	
SUM	3	0	0	24	24	

Table 6.5: 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

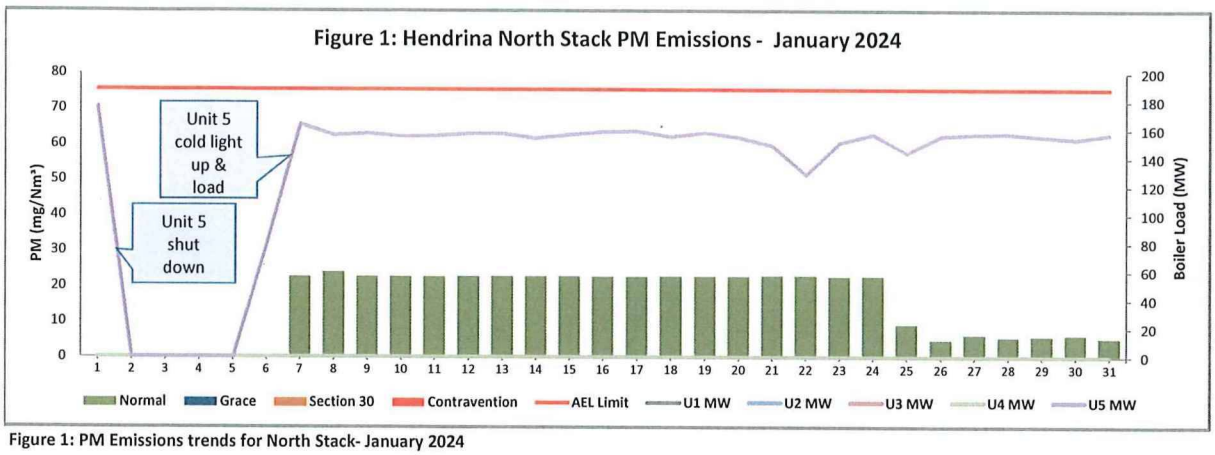

Figure 1: PM Emissions trends for North Stack- January 2024

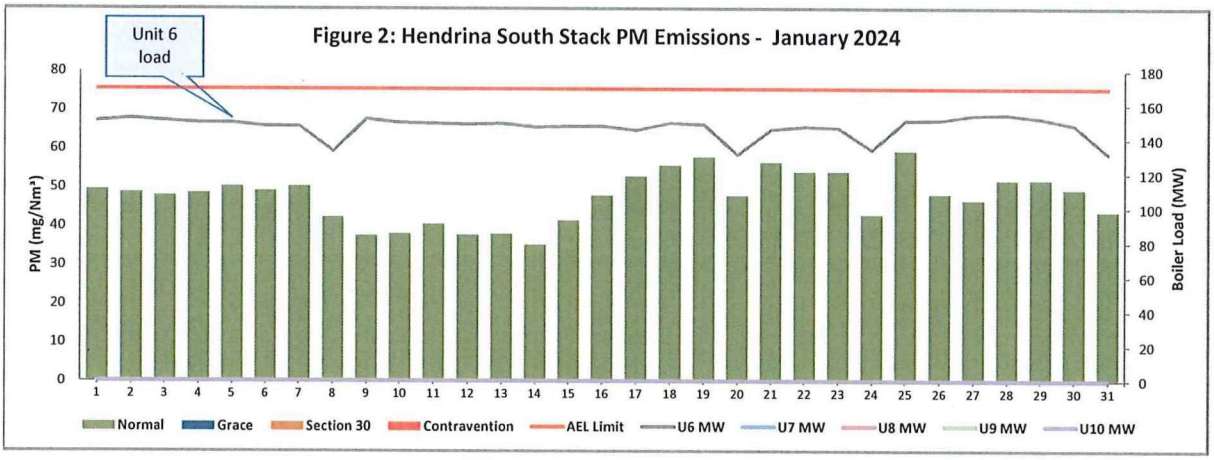

Figure 2: PM Emissions trends for South Stack- January 2024

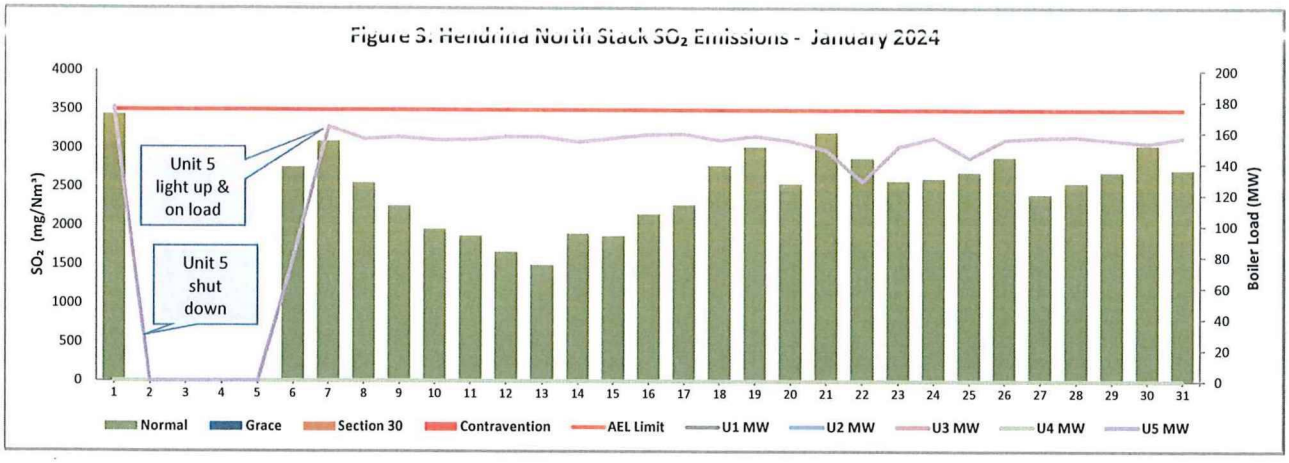

Figure 4: Sulphur dioxide Emissions trends for North Stack- January 2024

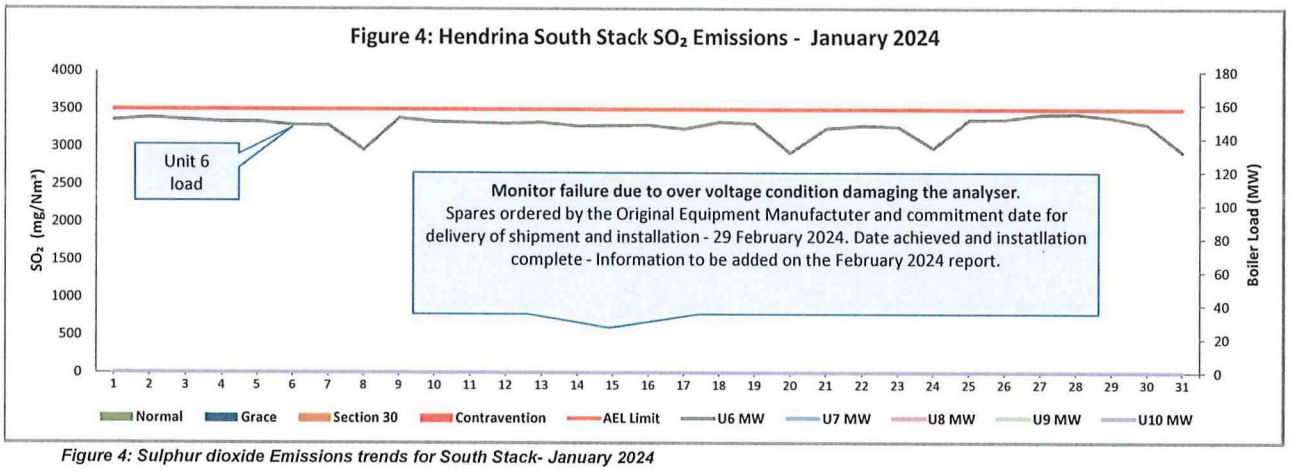

Figure 4: Sulphur dioxide Emissions trends for South Stack- January 2024

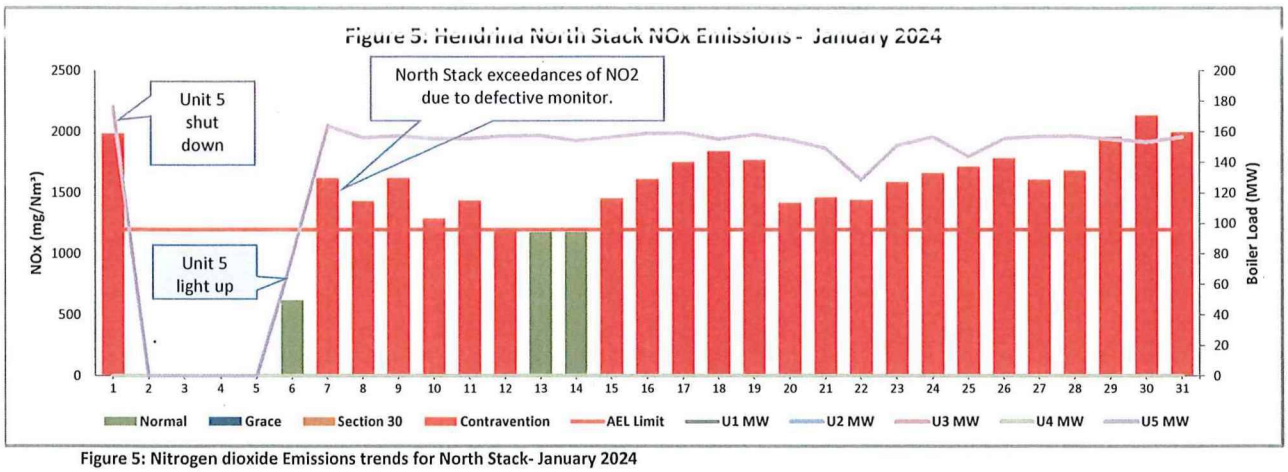

Figure 5: Nitrogen dioxide Emissions trends for North Stack- January 2024

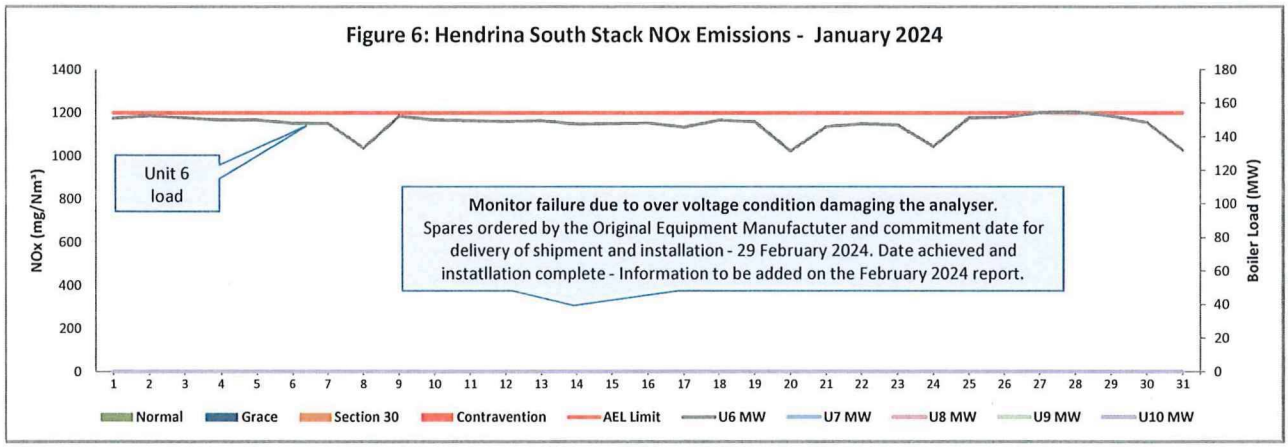

Figure 6: Nitrogen dioxide Emissions trends for South Stack- January 2024

7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7 1 PM Start-up information for the month of January-2024

North Stack	*Event 1*	
Unit No	*Unit 5*	
Breaker Open (BO)	*3 25 PM*	*01/01/2024*
Draught Group (DG) Shut Down (SD)	*3 25 PM*	*01/01/2024*
BO to DG SD (duration)		DD HH MM
Fires in time	*8 10 AM*	*06/01/2024*
Synch to Grid (or BC)	*8 10 PM*	*06/01/2024*
Fires in to BC (duration)	*00 12 00*	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

South Stack	*Event 1*	
Unit No	*Unit 6*	
Breaker Open (BO)	*1 25 PM*	*08/01/2024*
Draught Group (DG) Shut Down (SD)	*1 25 PM*	*08/01/2024*
BO to DG SD (duration)		DD HH MM
Fires in time	*6 30 PM*	*08/01/2024*
Synch to Grid (or BC)	*8 30 PM*	*08/01/2024*
Fires in to BC (duration)	*00 02 00*	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

8 Complaints register

Source Code / Name	Root Cause Analysis	Calculation of Impacts / emissions associated with the incident	Dispersion modeling of pollutants where applicable	Date measure will be implemented	Measures implemented to prevent reoccurrence
The Station did not receive complaints related to air quality during the month of January 2024					

9 General

Hendrina Power Station has noted the exceedances of NO2 for North Stack due to monitor defects and the monitor failure on the South Stack was due to over voltage which damaged the analyser A contributory factor to monitor issues at Hendrina Power Station is the ageing of the equipment
The station has taken to execute short term and long term mitigations to ensure reliability of the Continuous Emissions Monitoring System Short term actions include interim repairs and replacement for the damaged equipment - which the Original Equipment Manufacturer contracted with the station is sourcing spares which have lengthy lead times for delivery For the long term, the station has submitted a request for quote from the Original Equipment Manufacturer for a complete overhaul of the system An authorisation for this activity shall be sought from the Licencing Authority as per Condition 4 1 of the AEL prior commencement of any activities, including procurement Following that, the station shall provide progress on to the Licencing Authority on the monthly reports

05/03/2024

Compiled. Environmental Officer Date
B Madiope

Boiler/ FFP Date
Moyahabo Cetlyff Mapto

2024/03/07

Authorised by: GM Date
T Lekalakala

05/03/2024

Validated by Manager: Environmental Date
L Ntila

Compiled by	Boiler Engineering Department	FFP SE/ Environmental Officer
For	Nkangala District Municipality	Air Quality Officer
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	Group Technology Engineering	R Rampiar E Patel
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