

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 Mar-2024
	Coal	Tons	820,000	203,299.0
	Fuel Oil	Tons	3,200	947.58
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Mar-2024
	Energy	GWh	1488	369.50
	Ash	Tons	290,000	45,885
	RE PM	kg/MWh	not specified	0.108

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	0.61
Ash Content	%	20 to < 35	22.57

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
North	75	3500	1200
South	75	3500	1200

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Mar-2024
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.96%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	99.96%
Unit 6	Fabric Filter Plant (FFP)	99.96%
Unit 7	Fabric Filter Plant (FFP)	99.94%
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	CO ₂
North	100.0	100.0	100.0	100.0	86.9
South	100.0	98.8	70.7	98.2	98.8

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

6 EMISSION PERFORMANCE

Table 6.1 Monthly tonnages for the month of March-2024

Associated Unit/Stack	PM (tons)	SO _x (tons)	NO _x (tons)
North	8.4	3,788.6	3,165.7
South	31.4	1,658.2	483.3
SUM	39.9	5,446.8	3,649.1

Table 6.2: Operating days in compliance to PM AEL Limit - March 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	29	0	0	0	0	8.0
South	30	0	0	0	0	30.2
SUM	59	0	0	0	0	

North Stack SO₂ exceedance due to monitor defects. Mitigation measure outline at section 9 of this report: General

Table 6.3: Operating days in compliance to SO₂ AEL Limit - March 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
North	18	0	0	12	12	3,272.4
South	31	0	0	0	0	1,426.3
SUM	49	0	0	12	12	

North Stack NO_x exceedance due to monitor defects. Mitigation measure outline at section 9 of this report: General

Table 6.4: Operating days in compliance to NO_x AEL Limit - March 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
North	0	0	0	30	30	2,745.3
South	31	0	0	0	0	428.7
SUM	31	0	0	30	30	

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

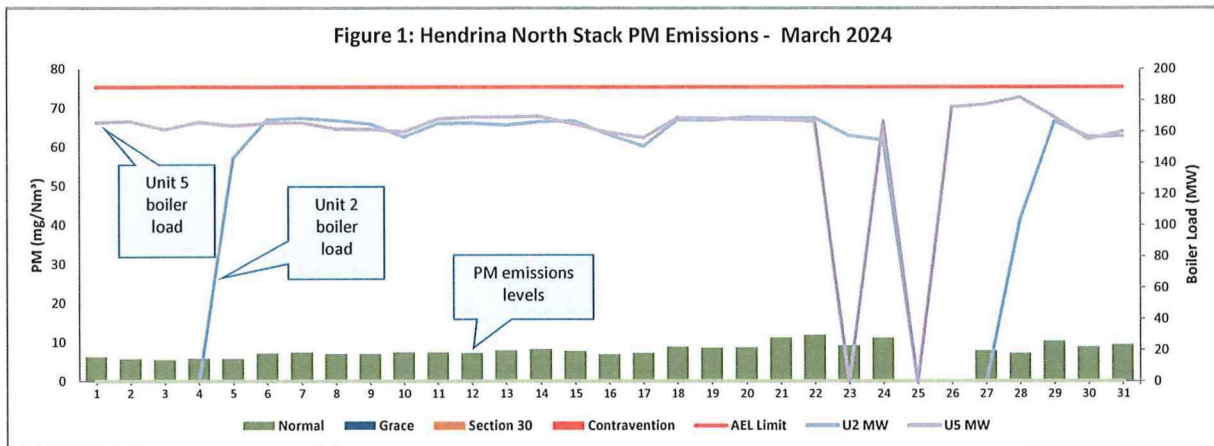


Figure 1: PM Emissions trends for North Stack- March 2024

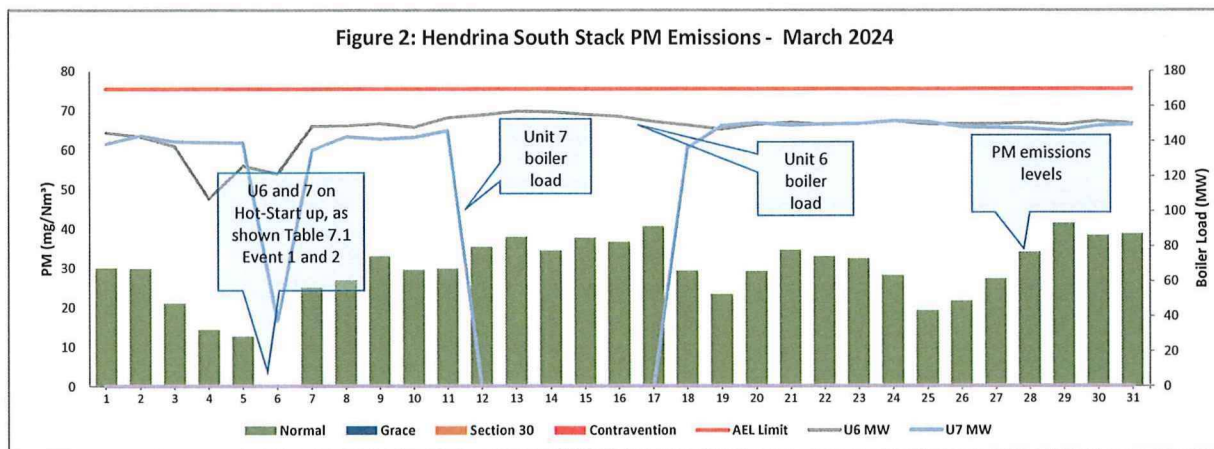


Figure 2: PM Emissions trends for South Stack- March 2024

Gaseous Emission Trends (NOx and SOx) for the North Stack have been removed due to suspected erroneous data from the Continuous Emission Monitoring System (CEMS).

Spot Checks measurements have been performed internally and they confirm the error.

The Station has conducted correlation and parallel tests for both stacks via services of a SANAS Accredited service provider and the final report is awaited. The station shall implement the correlation factors once the reports are received from the service provider and they shall be shared with the Licencing Authority.

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

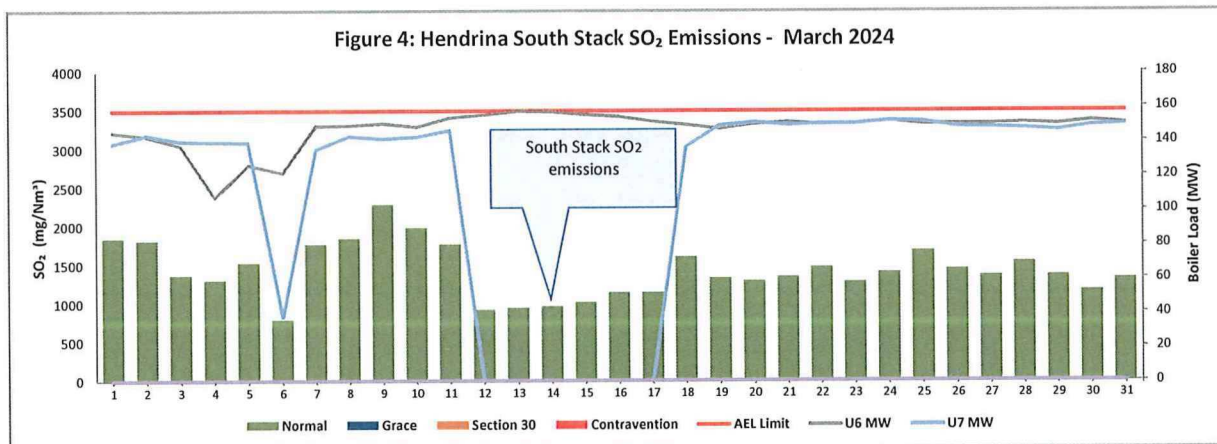


Figure 4: Sulphur dioxide Emissions trends for South Stack- March 2024

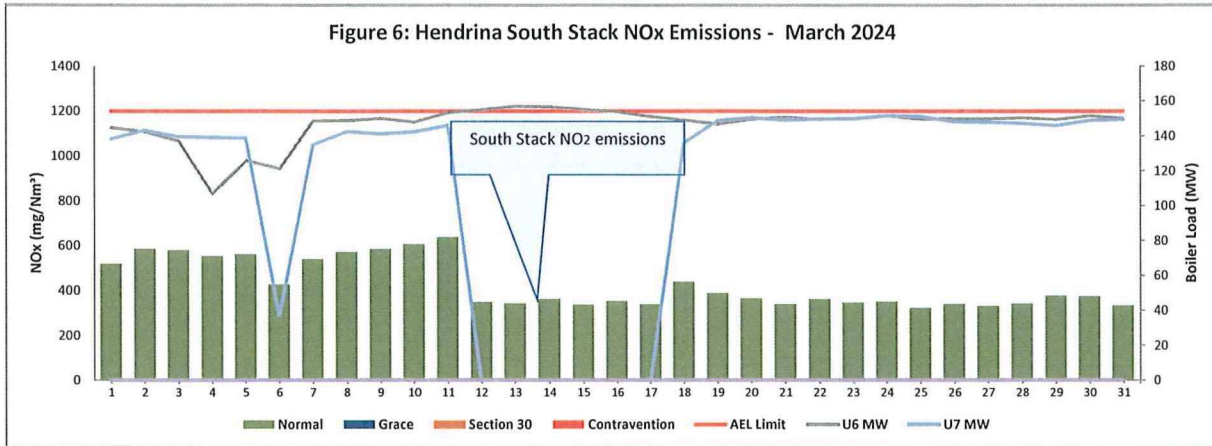


Figure 6: Nitrogen dioxide Emissions trends for South Stack- March 2024

7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of March-2024

North Stack	Event 1		Event 2		Event 3	
Unit No.	Unit 2		Unit 2		Unit 5	
Breaker Open (BO)	BO previously	BO previously	9:35 PM	24/03/2024	10:55 PM	22/03/2024
Draught Group (DG) Shut Down (SD)	n/a	n/a	9:35 PM	24/03/2024	10:55 PM	22/03/2024
BO to DG SD (duration)	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	2:00 AM	05/03/2024	28/03/2024	28/03/2024	25:12:40	25/03/2024
Synch. to Grid (or BC)	2:00 PM	05/03/2024	5:30 PM	28/03/2024	12:40 AM	26/03/2024
Fires in to BC (duration)	00:12:00	DD:HH:MM	00:12:00	DD:HH:MM	00:12:00	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

South Stack	Event 1		Event 2		Event 3	
Unit No.	Unit 6		Unit 7		Unit 7	
Breaker Open (BO)	3:05 PM	05/03/2024	10:25 AM	05/03/2024	4:25 PM	11/03/2024
Draught Group (DG) Shut Down (SD)	3:05 PM	05/03/2024	10:25 AM	05/03/2024	4:25 PM	11/03/2024
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	8:20 PM	05/03/2024	06/03/2024	06/03/2024	17:20:40	17/03/2024
Synch. to Grid (or BC)	1:20 AM	06/03/2024	11:10 PM	06/03/2024	12:40 AM	18/03/2024
Fires in to BC (duration)	00:05:00	DD:HH:MM	00:06:00	DD:HH:MM	00:04:00	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit

Emissions below limit from BC (duration)	n/a	DD HH MM	n/a	DD HH MM	n/a	DD HH MM
--	-----	----------	-----	----------	-----	----------

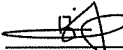
8 Complaints register


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 March 2024


09 General

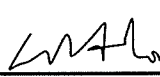
The station has taken to execute short term and long term mitigations to ensure reliability of the CEMS. The short term actions include interim repairs and replacement of damaged components, which are now complete, by the Original Equipment Manufacturer. For the long term, the station will engage the Licencing Authority regarding a complete overhaul of the CEMS as required by Paragraph 2 of General Condition 4.1 of the AEL.

 03/06/2024
Compiled by Environmental Officer
B Madiope

 18/06/2024
Verified by C&I Engineer Date
Simphiwe Kubheka

 04/06/2024
Verified by Boiler FFP Engineer Date
Moyahabo Cetlyff Maoto

 2024.06.19
Authorised by GM Date
T Lekalakala

 2024/06/11
Validated by Manager Environmental Date
L Ntla

Compiled by Boiler Engineering Department

For Nkangala District Municipality

Copies Eskom Environmental Management

Group Technology Engineering

Hendrina Power Station

FFP SE/ Environmental Officer

Air Quality Officer

D Herbst
B Mccourt

R Rampiar
E Patel

Engineering Manager
Operating Manager
Maintenance Manager
Production Manager
Environmental Manager
PGM