JANUARY 2025

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-2025
	Coal	Tons	*820 000*	*216 189.0*
	Fuel Oil	Tons	*3 200*	*2146.05*
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jan-2025
	Energy	GWh	*1488*	*311.11*
	Ash	Tons	*290 000*	*62 904*
	RE PM	kg/MWh	*not specified*	*0.202*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.6 to < 1*	*0.66*
Ash Content	%	*20 to < 35*	*21.63*

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO_2	NOx
North	*50*	*3200*	*1100*
South	*50*	*3200*	*1100*

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jan-2025
Unit 1	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 2	*Fabric Filter Plant (FFP)*	*100%*
Unit 3	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 4	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 5	*Fabric Filter Plant (FFP)*	*100%*
Unit 6	*Fabric Filter Plant (FFP)*	*100%*
Unit 7	*Fabric Filter Plant (FFP)*	*100%*
Unit 8	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 9	*Fabric Filter Plant (FFP)*	*Unit Off-line*
Unit 10	*Fabric Filter Plant (FFP)*	*100%*

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

5 MONITOR RELIABILITY (%)

-O2 monitor faulty.
-SO2, and NO not available due to monitor defects.

Associated Unit/Stack	PM	SO_2	NO	O_2	CO2
North	*99.9*				
South	*100.0*	*100.0*	*99.9*	*99.9*	99.9

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-2025

Associated Unit/Stack	PM (tons)	SOx (tons)	NOx (tons)
North	37.9	1 500.2	783.0
South	25.0	1 517.5	819.8
SUM	62.9	3 017.7	1 602.8

-North Stack SO2, and NOx: Surrogate values measured from QAL 2 Parallel Test Report (RSL411) were used due to monitor defects. Mitigation measures outlined at section 9 of this report: General

Table 6.2: Operating days in compliance to PM AEL Limit - January 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
North	20	6	2	0	8	45.4
South	28	2	1	0	3	26.9
SUM	48	8	3	0	11	

-North Stack SO2: Surrogate values measured from QAL 2 Parallel Test Report (RSL411) were used due to monitor defects. Mitigation measures outlined at section 9 of this report: General

Table 6.3: Operating days in compliance to SO_2 AEL Limit - January 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
North	31	0	0	0	0	1 561.0
South	31	0	0	0	0	1 604.2
SUM	62	0	0	0	0	

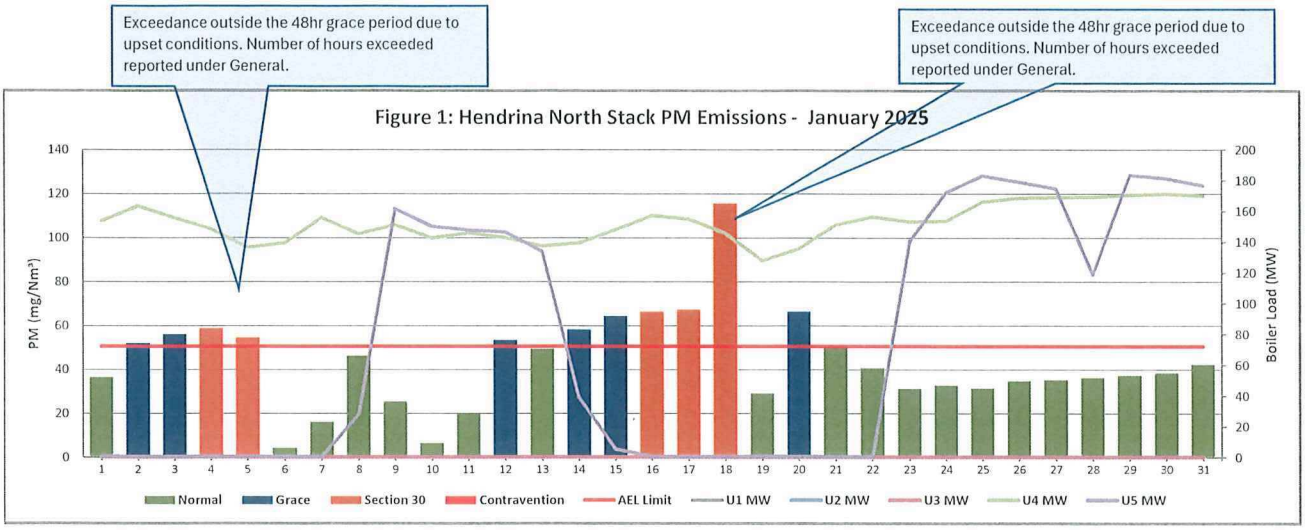
-North Stack NOx: Surrogate values measured from QAL 2 Parallel Test Report (RSL411) were used due to monitor defects. Mitigation measures outlined at section 9 of this report: General

Table 6.4: Operating days in compliance to NOx AEL Limit - January 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
North	31	0	0	0	0	814.8
South	31	0	0	0	0	856.6
SUM	62	0	0	0	0	

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


Exceedance outside the 48hr grace period due to upset conditions. Number of hours exceeded reported under General.
Exceedance outside the 48hr grace period due to upset conditions. Number of hours exceeded reported under General.
Figure 1: Hendrina North Stack PM Emissions - January 2025
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW
U4 MW
U5 MW

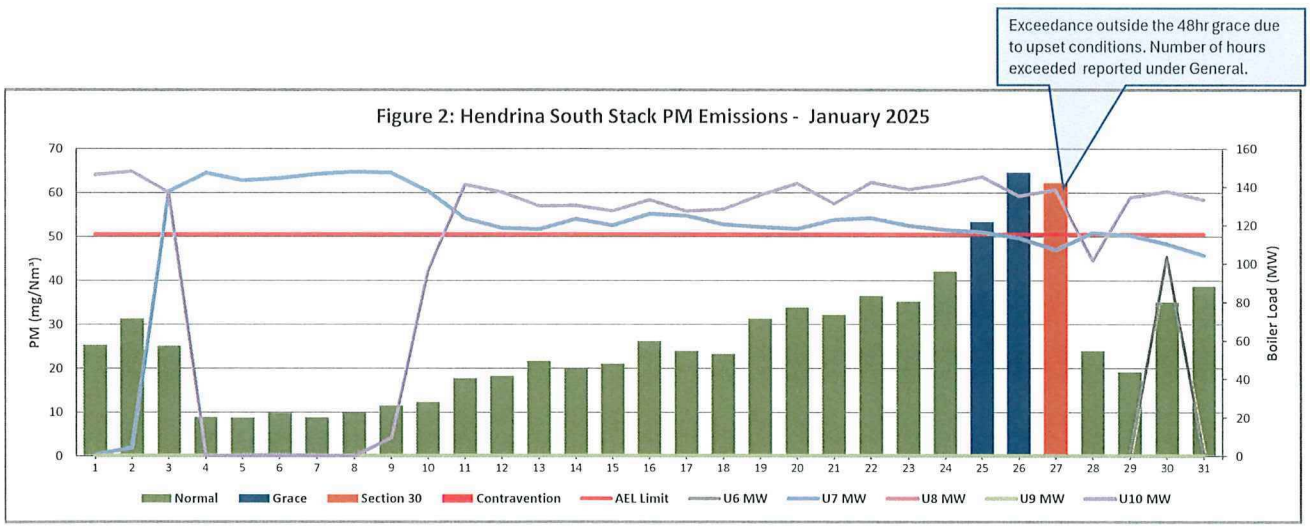

Exceedance outside the 48hr grace due to upset conditions. Number of hours exceeded reported under General.
Figure 2: Hendrina South Stack PM Emissions - January 2025
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW
U7 MW
U8 MW
U9 MW
U10 MW

Figure 3: Hendrina North Stack SO_2 Emissions - January 2025

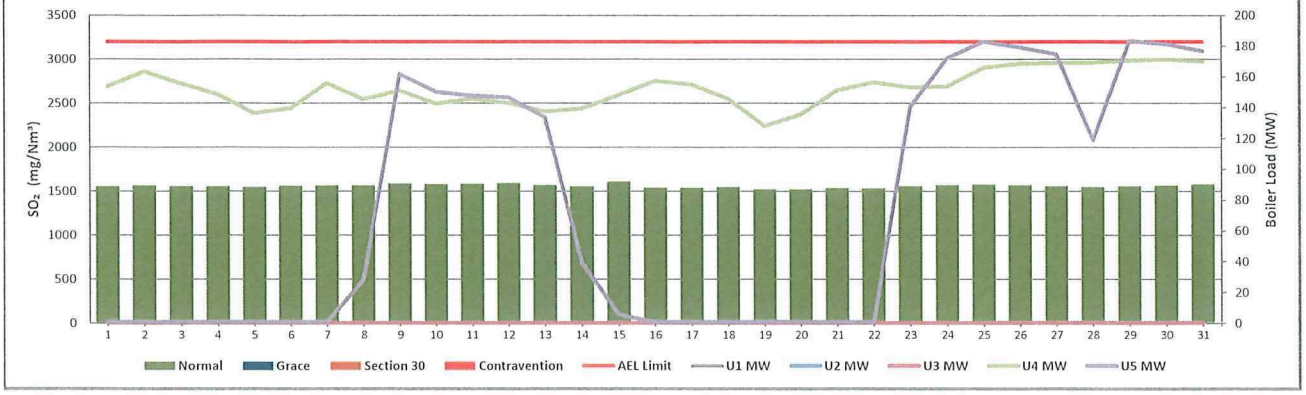


Figure 4: Hendrina South Stack SO_2 Emissions - January 2025

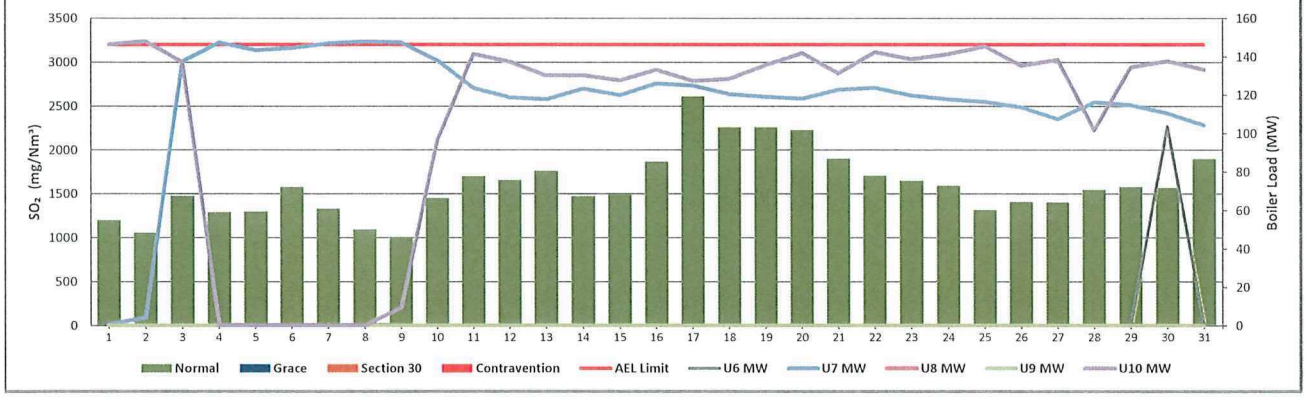


Figure 5: Hendrina North Stack NOx Emissions - January 2025

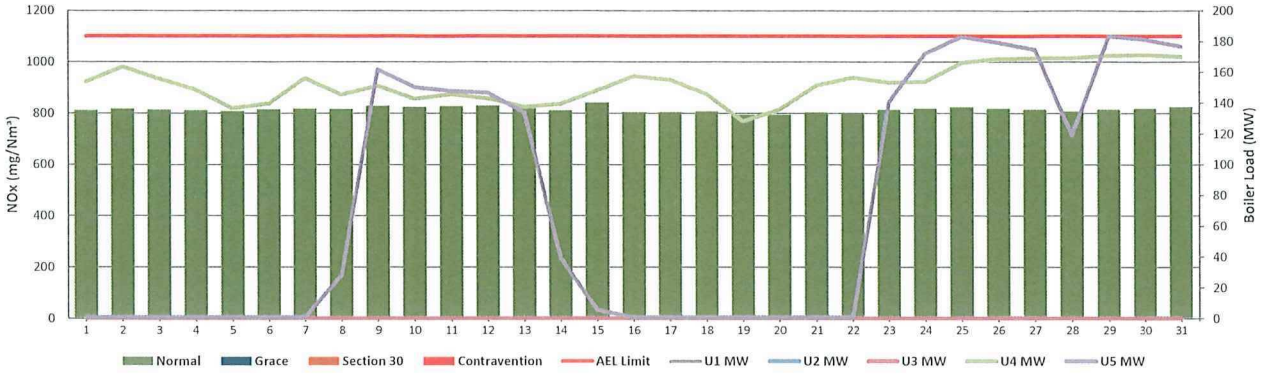
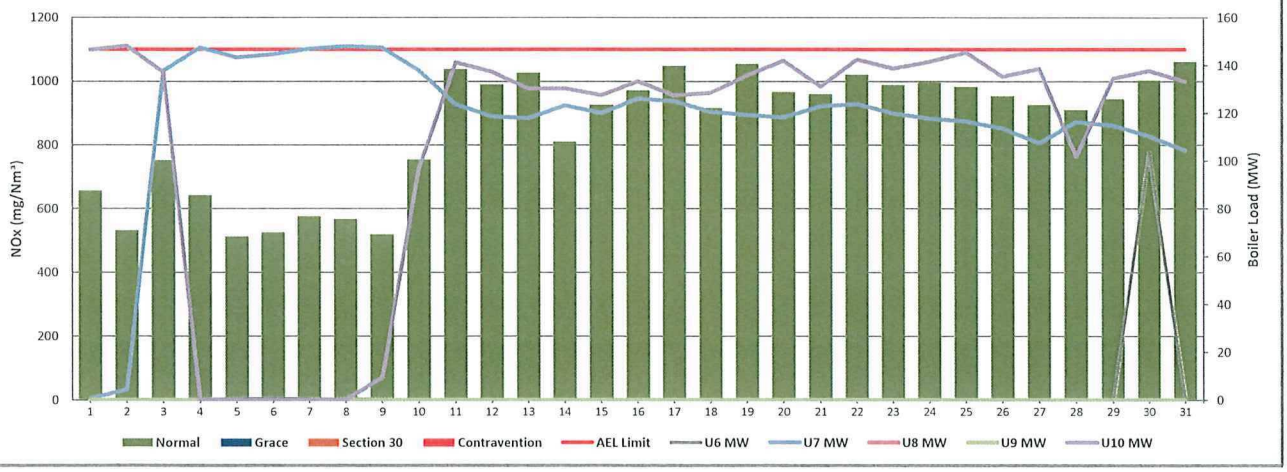


Figure 6: Hendrina South Stack NOx Emissions - January 2025



Gaseous Emission Trends (NOx and SOx) for the North Stack: Surrogate values from QAL2 (RSL 411) have been used due to erronous data from the Continuous Emission Monitoring System (CEMS) .

Spot Check measurements have been performed internally and they confirm the error. The parrallel tests reports review has been completed, however it was discovered that during the testing period the monitors were faulty and therefore the tests for the North Stack must be conducted again.

The Station has conducted correlation tests for both stacks via services of a SANAS accredited service provider and the reports are still in review phase. The station shall implement the correlation factors once the review phase of the report is complete and identified comments addressed. The report will be shared with the Licencing Authority.

7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of January-2025

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 4		Unit 5		Unit 5		Unit 5	
Breaker Open (BO)	1:35 pm	2025/01/05	BO previously	BO previously	8:05 am	2025/01/14	8:35 am	2025/01/28
Draught Group (DG) Shut Down (SD)	1:35 pm	2025/01/05	n/a	n/a	6:55 am	2025/01/16	8:45 am	2025/01/28
BO to DG SD (duration)		DD:HH:MM	n/a	DD:HH:MM	01:22:50	DD:HH:MM	00:00:10	DD:HH:MM
Fires in time	1:55 pm	2025/01/05	2025/01/08	2025/01/08	22:09:55	2025/01/22	2025/01/28	2025/01/28
Synch. to Grid (or BC)	11:50 pm	2025/01/05	6:20 pm	2025/01/08	12:00 am	2025/01/23	3:50 pm	2025/01/28
Fires in to BC (duration)	00:09:55	DD:HH:MM	00:15:55	DD:HH:MM	00:14:05	DD:HH:MM	00:06:35	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	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	n/a	DD:HH:MM

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 7		Unit 10		Unit 10		no event	
Breaker Open (BO)	BO previously	BO previously	7:55 am	2025/01/03	4:15 pm	2025/01/14		
Draught Group (DG) Shut Down (SD)	n/a	n/a	DG did not trip or SD	DG did not trip or SD	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	n/a	DD:HH:MM		DD:HH:MM
Fires in time	8:05 am	2025/01/02						
Synch. to Grid (or BC)	10:40 pm	2025/01/02						
Fires in to BC (duration)	00:14:35	DD:HH:MM		DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM		DD:HH:MM

08 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 2025.					

09 General

The station has taken to execute short term and long term mitigations to ensure reliability of the CEMS. The short term action include implementation of the parallel curves.
For the long term, the station will engage the Licencing Authority regarding replacement of the CEMS as required by Paragraph b) of General Condition 4.1 of the AEL.

Reporting as per AEL Conditin 7.2.8:
North Stack Hours exceeded between 04-05/01/2025: 30
North Stack Hours Exceeded between 16-18/01/2025: 64
South Stack Hours Exceeded on the 27/01/2025: 14

18 February 2025		18/02/2025	
Compiled: Environmental Officer Azola Boja	Date	**Checked by: System Engineer Boiler/ FFP** **Moyahabo Cetlyff Maoto**	Date
		18/02/2025	
		Validated by Manager: Boiler Engineering Manager G. Kgwatlhe	Date
05/05/2025		30/04/2025	
Authorised by: GM T. Lekalakala	Date	**Supported by:** Environmental Manager L. Ntila	Date

Compiled by:	Boiler Engineering Department	FFP SE/ Environmental Officer
For:	Nkangala District Municipality	Air Quality Officer
Copies:	Eskom Environmental Management	D Herbst B Mccourt
	Group Technology Engineering	R Rampiar E. Patel
	Hendrina Power Station:	Engineering Manager Operating Manager Maintenance Manager Unit Production Manager Boiler Engineering Manager System Engineer: Boiler Engineering Environmental Officer C & I Engineering Manager Production Manager Environmental Manager PSM