JUNE 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 Jun-2024
	Coal	Tons	*820*	*281.7*
	Fuel Oil	Tons	*3200*	*866.94*
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jun-2024
	Energy	GWh	*1440*	*453.43*
	Ash	Tons	*290000*	*61665*
	RE PM	kg/MWh	*not specified*	*0.181*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.6 to < 1*	*0.58*
Ash Content	%	*20 to < 35*	*21.89*

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO_2	NOx
North	*50*	*3500*	*1200*
South	*50*	*3500*	*1200*

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jun-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 95%*
Unit 6	*Fabric Filter Plant (FFP)*	*99 96%*
Unit 7	*Fabric Filter Plant (FFP)*	*99 93%*
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 (%)

Associated Unit/Stack	PM	SO_2	NO	O_2	CO2
North	*100 0*	*100 0*	*100 0*	*100*	100
South	*96 7*	*100 0*	*100 0*	*100*	100

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 June-2024

Associated Unit/Stack	PM (tons)	SOx (tons)	NOx (tons)
North	11 1	6521 9	3167 9
South	70 8	2953 5	1538 9
SUM	81 9	9475 4	4706 8

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
North	30	0	0	0	0	9.8
South	23	2	5	0	7	53.0
SUM	53	2	5	0	7	

North Stack SO2 issue 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 - June 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
North						
South	30	0	0	0	0	1,973.8
SUM	30	0	0	30	30	

North Stack NO2 issue 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 - June 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
North						
South	29	0	0	1	1	1,024.9
SUM	29	0	0	31	31	

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

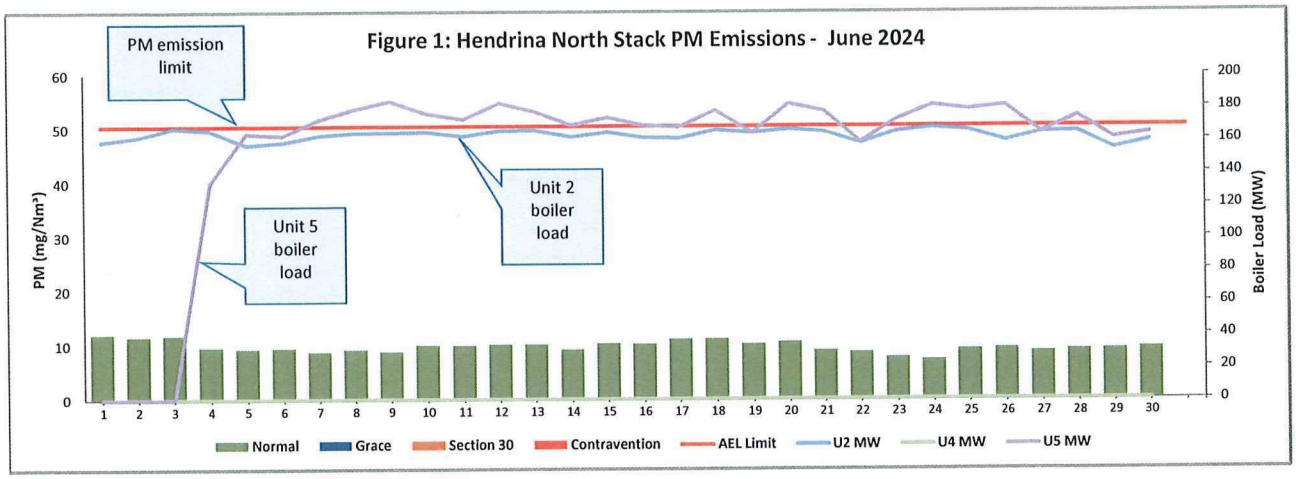

Figure 1: PM Emissions trends for North Stack- June 2024

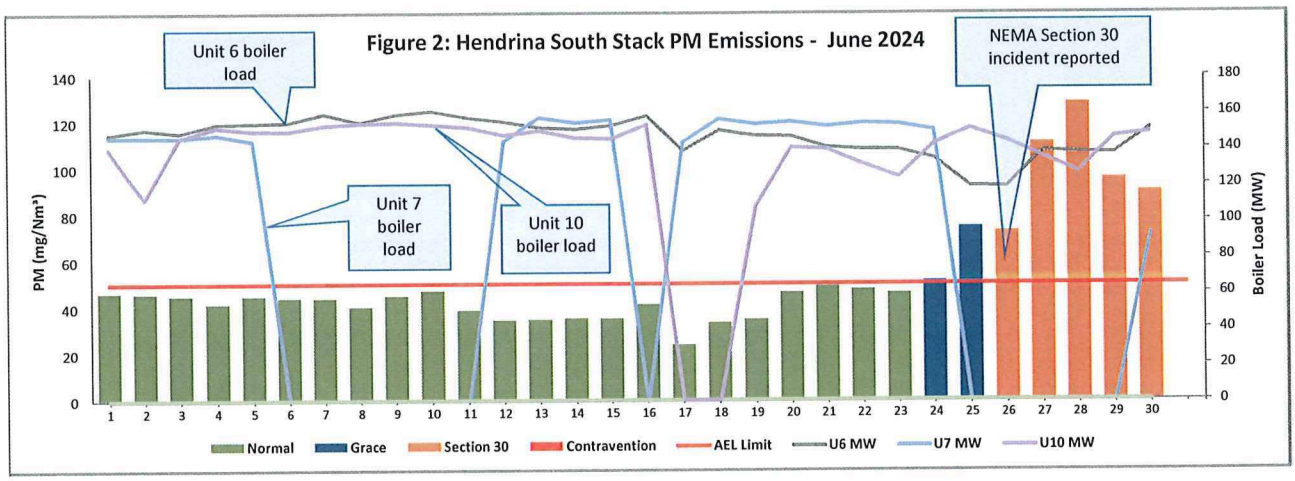

Figure 2: PM Emissions trends for South Stack- June 2024

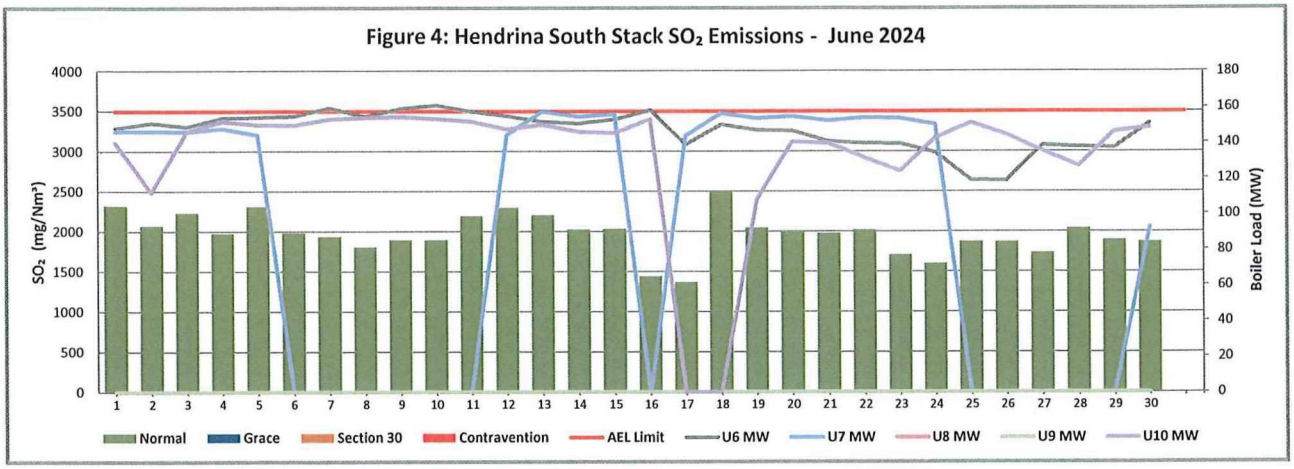

Figure 4: Sulphur dioxide Emissions trends for South Stack- June 2024

Gaseous Emission Trends (NOx and SOx) for the North Stack have been removed due to suspected erronous 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 Acrredited 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.

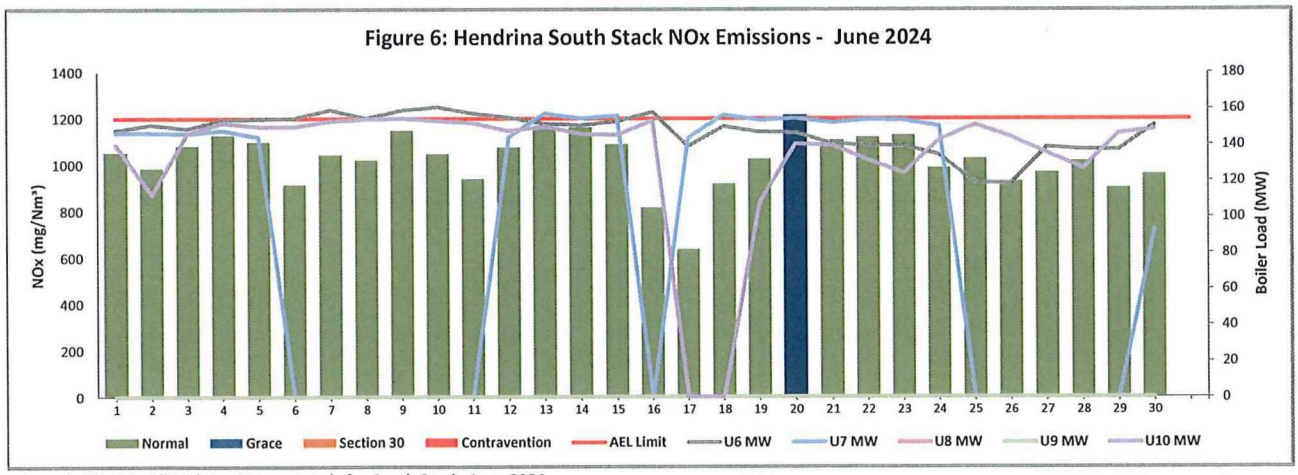

Figure 6: Nitrogen dioxide Emissions trends for South Stack- June 2024

7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	Event 1		Event 2	
Unit No	Unit 5		Unit 5	
Breaker Open (BO)	BO previously	BO previously	5 15 AM	27/06/2024
Draught Group (DG) Shut Down (SD)	n/a	n/a	1 05 PM	27/06/2024
BO to DG SD (duration)	n/a	DD HH MM	00 07 50	DD HH MM
Fires in time	12 00 AM	04/06/2024	27/06/2024	27/06/2024
Synch to Grid (or BC)	12 00 PM	04/06/2024	11 30 PM	27/06/2024
Fires in to BC (duration)	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
Emissions below limit from BC (duration)	n/a	DD HH MM	n/a	DD HH MM

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No	Unit 6		Unit 7		Unit 7		Unit 7	
Breaker Open (BO)	1 35 PM	17/06/2024	11 25 PM	05/06/2024	10 25 PM	15/06/2024	7 35 AM	24/06/2024
Draught Group (DG) Shut Down (SD)	1 55 PM	17/06/2024	10 45 AM	06/06/2024	6 25 AM	16/06/2024	6 05 PM	24/06/2024
BO to DG SD (duration)	00 00 20	DD HH MM	00 11 20	DD HH MM	00 08 00	DD HH MM	00 10 30	DD HH MM
Fires in time	4 00 PM	17/06/2024	11/06/2024	11/06/2024	17 01 00	17/06/2024		
Synch to Grid (or BC)	10 00 PM	17/06/2024	1 30 AM	12/06/2024	7 00 AM	17/06/2024		
Fires in to BC (duration)	00 06 00	DD HH MM	00 06 00	DD HH MM	00 06 00	DD HH MM		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		DD HH MM

South Stack Continued	Event 1		Event 2	
Unit No	Unit 10		Unit 10	
Breaker Open (BO)	3 25 AM	02/06/2024	4 15 PM	16/06/2024
Draught Group (DG) Shut Down (SD)	3 25 AM	02/06/2024	4 15 PM	16/06/2024
BO to DG SD (duration)		DD HH MM		DD HH MM
Fires in time	7 20 AM	02/06/2024	18/06/2024	18/06/2024
Synch to Grid (or BC)	1 20 PM	02/06/2024	4 10 AM	19/06/2024
Fires in to BC (duration)	00 06 00	DD HH MM	00 06 00	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

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 June 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

	2024/07/30	2024/07/31
Compiled Environmental Officer	**Checked by System Engineer**	**C/I Engineer**
Azola Boja	**Boiler/ FFP**	S Kubheka
	Moyahabo Cetlyff Maoto	
31/07/2024		30/07/2024
Authorised by. GM Date	**Validated by Manager**	**Environmental** Date
T. Lekalakala		**L Ntila**

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