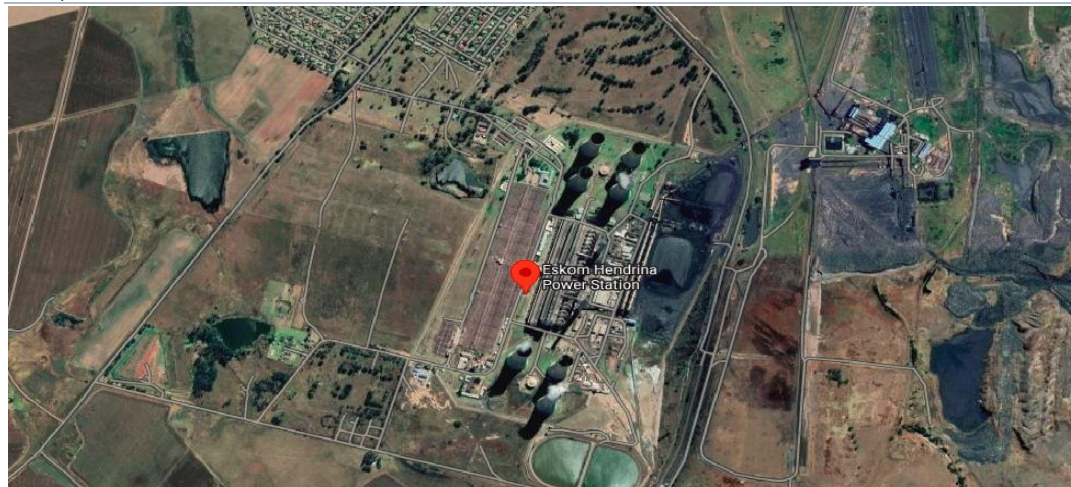


HENDRINA POWER STATION MONTHLY EMISSIONS REPORT

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 Aug-2024
	Coal	Tons	820 000	178 933.0
	Fuel Oil	Tons	3 200	2156.34
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Aug-2024
	Energy	GWh	1488	256.06
	Ash	Tons	290 000	43 268
	RE PM	kg/MWh	not specified	0.169

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	0.65
Ash Content	%	20 to < 35	21.58

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
North	50	3200	1100
South	50	3200	1100

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Aug-2024
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	100.0%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	100.0%
Unit 6	Fabric Filter Plant (FFP)	100.0%
Unit 7	Fabric Filter Plant (FFP)	100.0%
Unit 8	Fabric Filter Plant (FFP)	Unit Off-line
Unit 9	Fabric Filter Plant (FFP)	Unit Off-line
Unit 10	Fabric Filter Plant (FFP)	100.0%

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	96.0	100.0	100.0	92.6	52.5
South	100.0	100.0	98.7	100.0	100

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 August-2024

Associated Unit/Stack	PM (tons)	SO _x (tons)	NO _x (tons)
North	4.3		
South	39.0	1 592.6	1 035.8
SUM	43.3	1 592.6	1 035.8

-North Stack SO₂, and NO not available 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 - August 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	25	0	0	0	0	10.0
South	24	5	0	0	5	41.8
SUM	49	5	0	0	5	

-North Stack SO₂ not available due to monitor defects. Mitigation measures outlined at section 9 of this report: General

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
North						
South	30	0	0	0	0	1 350.5
SUM	30	0	0	0	0	

-North NO not available due to monitor defects. Mitigation measures outlined at section 9 of this report: General

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
North						
South	30	0	0	0	0	874.7
SUM	30	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

Figure 1: Hendrina North Stack PM Emissions - August 2024

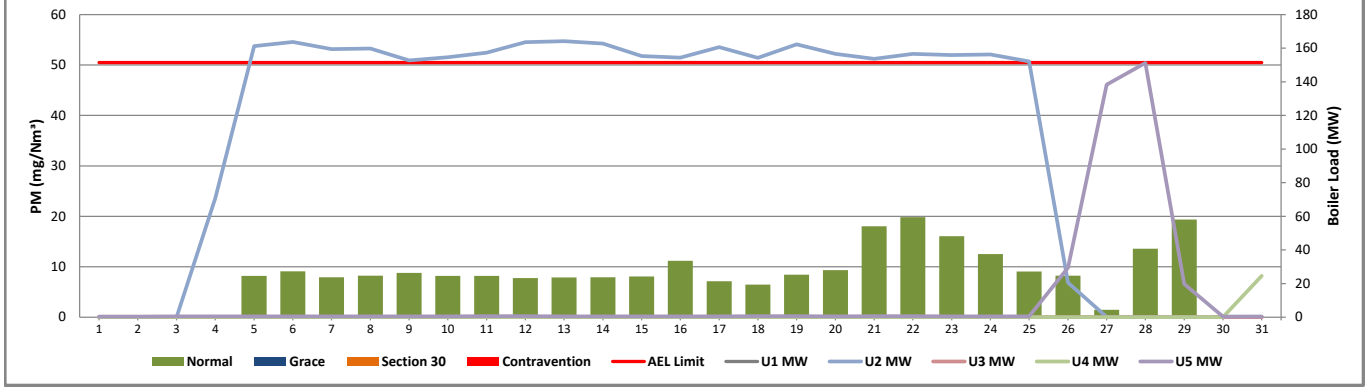


Figure 2: Hendrina South Stack PM Emissions - August 2024

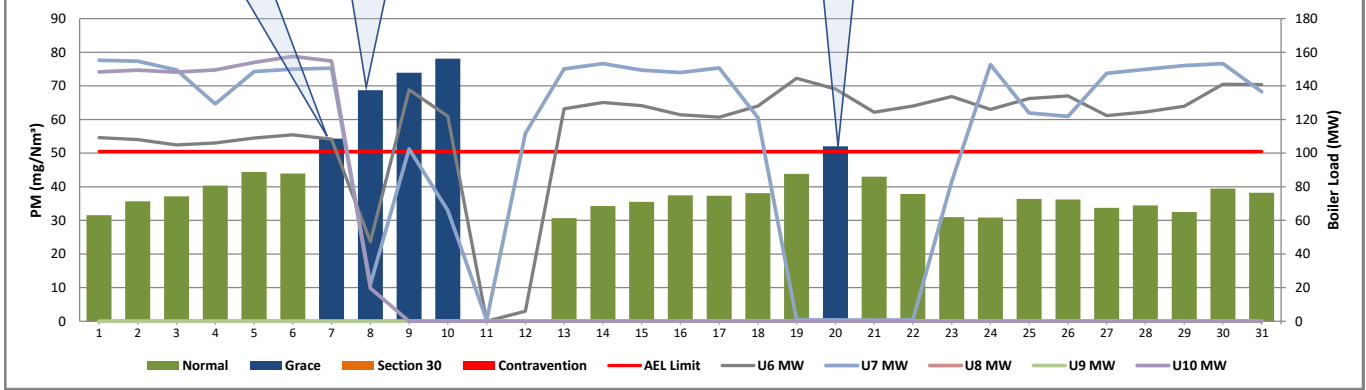


Figure 4: Hendrina South Stack SO₂ Emissions - August 2024

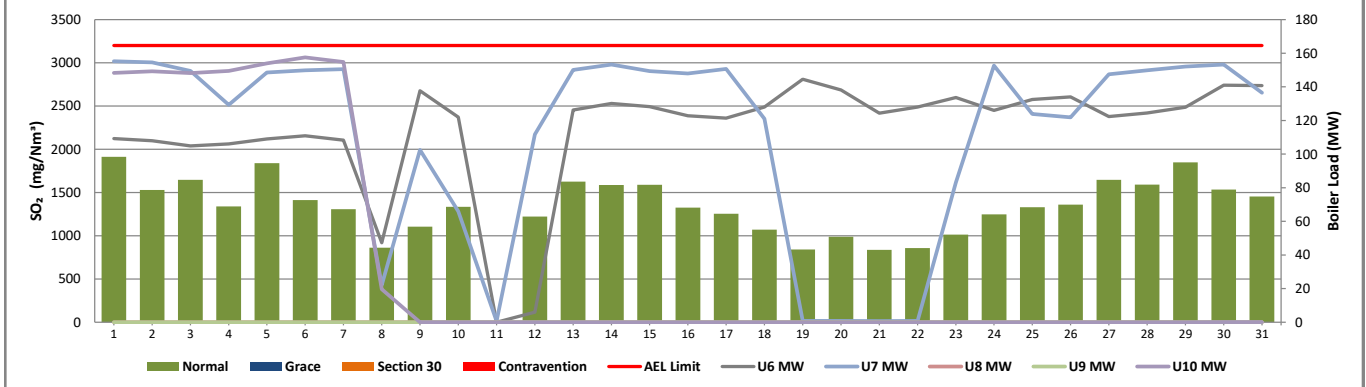
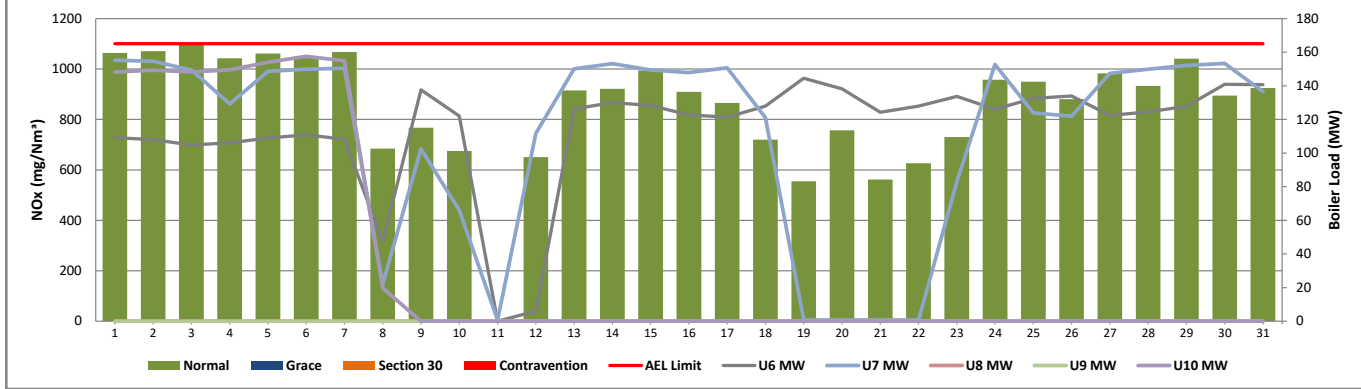


Figure 6: Hendrina South Stack NOx Emissions - August 2024



Gaseous Emission Trends (NOx and SOx) for the North Stack and NOx for the South 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.

7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 2		Unit 2		Unit 4		Unit 5	
Breaker Open (BO)	BO previously	BO previously	3:15 am	2024/08/26	BO previously	BO previously	BO previously	BO previously
Draught Group (DG) Shut Down (SD)	n/a	n/a	2:35 pm	2024/08/26	n/a	n/a	n/a	n/a
BO to DG SD (duration)	n/a	DD:HH:MM	00:11:20	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM
Fires in time	3:35 am	2024/08/04			28:01:45	2024/08/28	2024/08/25	2024/08/25
Synch. to Grid (or BC)	3:10 pm	2024/08/04			11:50 pm	2024/08/28	5:00 pm	2024/08/26
Fires in to BC (duration)	00:11:35	DD:HH:MM		DD:HH:MM	00:22:05	DD:HH:MM	00:23:35	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		DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

North Stack ...Continued	Event 5		Event 2		Event 3		Event 4	
Unit No.	Unit 5		no event		no event		no event	
Breaker Open (BO)	5:15 am	2024/08/29						
Draught Group (DG) Shut Down (SD)	8:25 am	2024/08/29						
BO to DG SD (duration)	00:03:10	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 6		Unit 6		Unit 7		Unit 7	
Breaker Open (BO)	1:55 am	2024/08/08	7:15 am	2024/08/10	1:55 am	2024/08/08	11:05 am	2024/08/10
Draught Group (DG) Shut Down (SD)	2:35 am	2024/08/08	8:05 am	2024/08/10	4:25 am	2024/08/08	12:25 am	2024/08/11
BO to DG SD (duration)	00:00:40	DD:HH:MM	00:00:50	DD:HH:MM	00:02:30	DD:HH:MM	00:13:20	DD:HH:MM
Fires in time	1:15 pm	2024/08/08	2024/08/12	2024/08/12	08:15:35	2024/08/08	2024/08/11	2024/08/11
Synch. to Grid (or BC)	7:30 pm	2024/08/08	11:30 pm	2024/08/12	7:50 am	2024/08/09	5:30 am	2024/08/12
Fires in to BC (duration)	00:06:15	DD:HH:MM	00:07:55	DD:HH:MM	00:16:15	DD:HH:MM	00:19:55	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 ...Continued	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 7		Unit 7		Unit 7		Unit 10	
Breaker Open (BO)	3:45 pm	2024/08/18	5:05 pm	2024/08/25	11:50 pm	2024/08/29	1:55 am	2024/08/08
Draught Group (DG) Shut Down (SD)	5:35 am	2024/08/19	5:05 pm	2024/08/25	DG did not trip or SD	DG did not trip or SD	11:50 pm	2024/08/25
BO to DG SD (duration)	00:13:50	DD:HH:MM		DD:HH:MM	n/a	DD:HH:MM	17:21:55	DD:HH:MM
Fires in time	9:25 pm	2024/08/22	2024/08/25	2024/08/25			2024/08/26	2024/08/26
Synch. to Grid (or BC)	1:00 pm	2024/08/23	4:20 am	2024/08/26				
Fires in to BC (duration)	00:15:35	DD:HH:MM	00:11:05	DD:HH:MM		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		DD:HH:MM		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
<i>The Station did not receive complaints related to air quality during the month of August 2024.</i>					

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 b) of General Condition 4.1 of the AEL.



09 October 2024

Compiled: Environmental Officer

Date

A. Boja**Authorised by: GM**

Date

T. Lekalakala

Compiled by: Boiler Engineering Department

For: Nkangala District Municipality

Copies: Eskom Environmental Management

Group Technology Engineering

Hendrina Power Station:

Checked by: System Engineer Boiler/ FFP

Date

Moyahabo Cetlyff Maoto**Validated by Manager:****Boiler Engineering
G. Kgwathe**

Date

Supported by Manager:**Environmental
L. Ntila**

Date

FFP SE/ Environmental Officer

Air Quality Officer

D Herbst
B MccourtR Rampiar
E. Patel

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