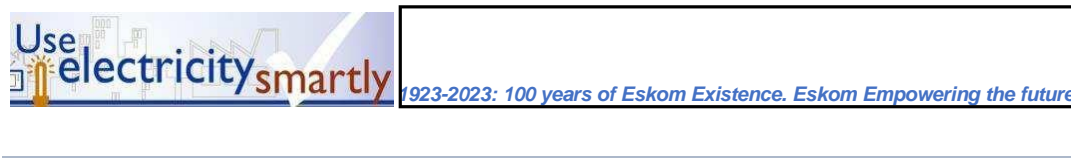


**HENDRINA POWER STATION MONTHLY EMISSIONS REPORT**

Atmospheric Emission License 17/4/AEL/MP313/11/16

**1 RAW MATERIALS AND PRODUCTS**

Raw Products	Raw Material Type	Units	Max. Permitted Consumption Rate	Consumption Rate Jan-2023
	Coal	Tons	820 000	85 600.0
	Fuel Oil	Tons	3 200	1000.95

Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jan-2023
	Energy	GWh	1488	131.68
	Ash	Tons	290 000	22 273
	RE PM	kg/MWh	not specified	0.086

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	0.63
Ash Content	%	31 to < 35	26.02

**3 EMISSION LIMITS (mg/Nm<sup>3</sup>)**

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>x</sub>
North	75	3200	1200
South	75	3200	1200

**4 ABATEMENT TECHNOLOGY (%)**

Associated Unit/Stack	Technology Type	Efficiency Jan-2023
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.970%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	Unit Off-line
Unit 6	Fabric Filter Plant (FFP)	Unit Off-line
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)	100.000%

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

**5 MONITOR RELIABILITY (%)**

Associated Unit/Stack	PM	SO <sub>2</sub>	NO	O <sub>2</sub>
North	100.0	100.0	93.2	0.0
South	100.0	100.0	100.0	34.4

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO<sub>x</sub>.

## 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of January-2023

Associated Unit/Stack	PM (tons)	SOx (tons)	NOx (tons)
North	2.3	0.0	0.0
South	9.0	659.9	358.1
SUM	11.3	659.9	358.1

Table 6.2: Operating days in compliance to PM AEL Limit - January 2023

Associated Unit/Stack	Total Calendar days	Days under normal operation	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	31	14	0	0	0	0	10.2
South	31	29	0	0	0	0	20.9
<b>SUM</b>	<b>62</b>	<b>43</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Boiler unit 2 on the North Stack and Boiler Unit 10 on the South Stack were off or on start-up/ shutdown process for the remaining days of the month

Table 6.3: Operating days in compliance to SO<sub>2</sub> AEL Limit - January 2023

Associated Unit/Stack	Total Calendar days	Days under normal operation	Grace	Section 30	Contravention	Total Exceedance	Average SO <sub>2</sub> (mg/Nm <sup>3</sup> )
North	31	17	0	0	0	0	1 673.7
South	31	31	0	0	0	0	896.2
<b>SUM</b>	<b>62</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - January 2023

Associated Unit/Stack	Total Calendar days	Days under normal operation	Grace	Section 30	Contravention	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
North	31	17	0	0	0	0	798.5
South	31	31	0	0	0	0	486.3
<b>SUM</b>	<b>62</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.5: Legend Description

Condition	Color	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

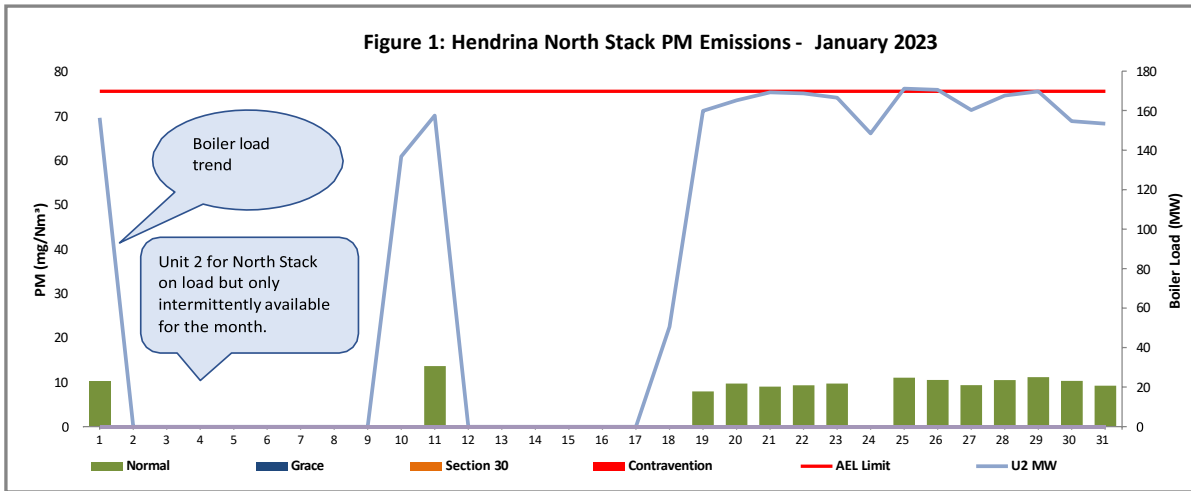


Figure 1: PM emissions for the month of January 2023 against emission limit for the North Stack. The monthly average was 10.2mg/Nm3

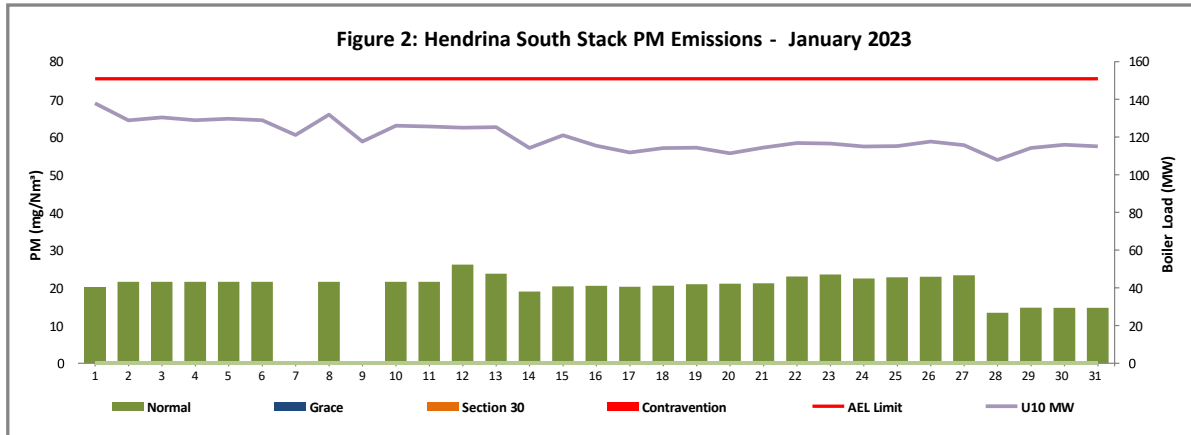


Figure 2: PM emissions for the month of January 2023 against emission limit for the South Stack. The monthly average was 20.9mg/Nm3

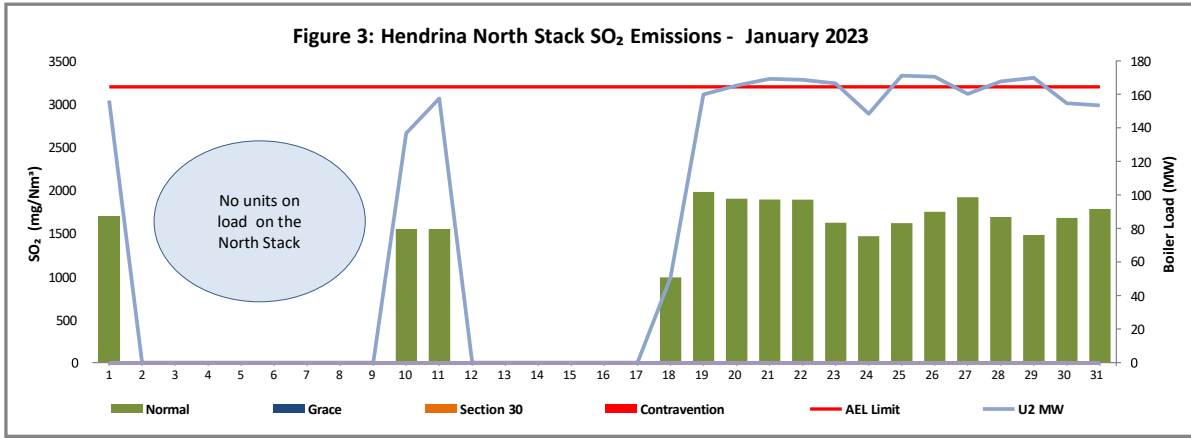


Figure 3: SO<sub>x</sub> emissions for the month of January 2023 against emission limit for the North Stack.

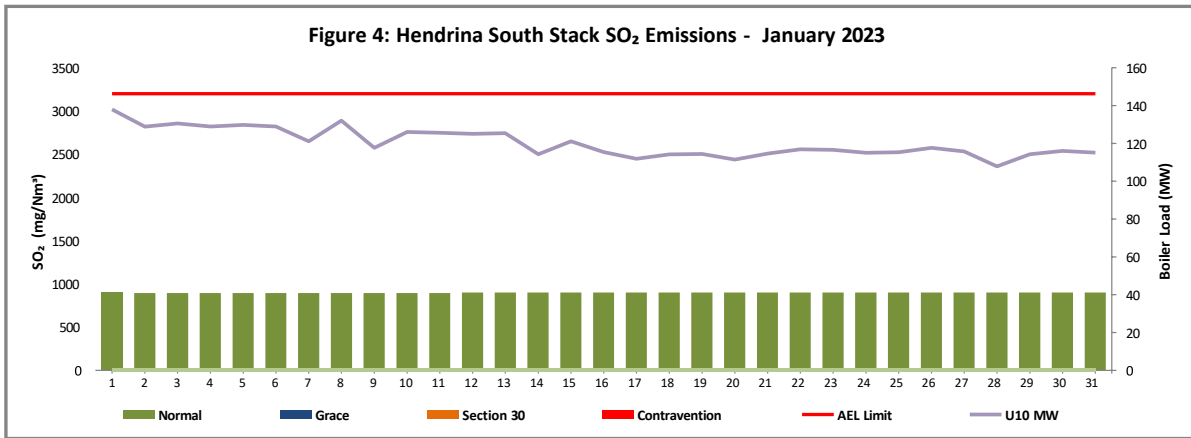


Figure 4: SO<sub>x</sub> emissions for the month of January 2023 against emission limit for the South Stack.

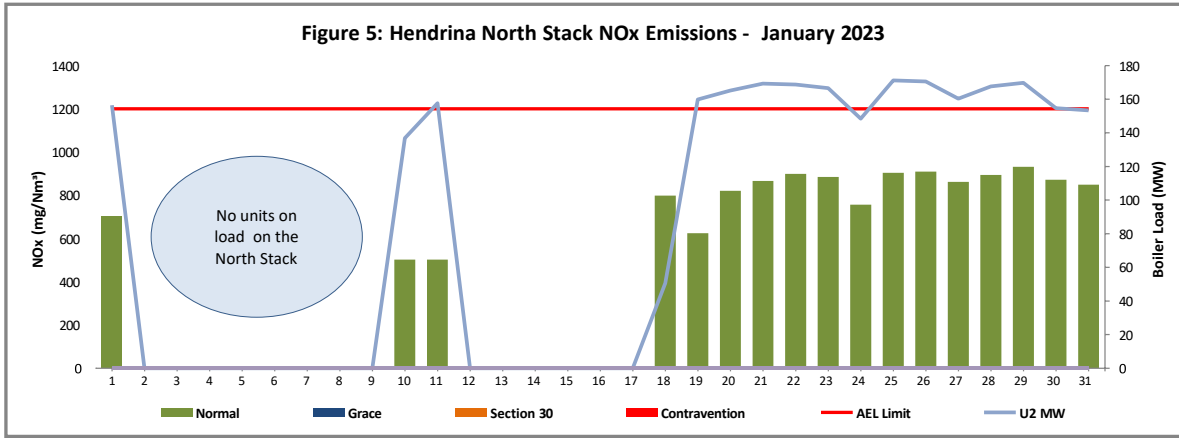


Figure 5: NOx emissions for the month of January 2023 against emission limit for the North Stack. The NOx limit is 1200mg/Nm3

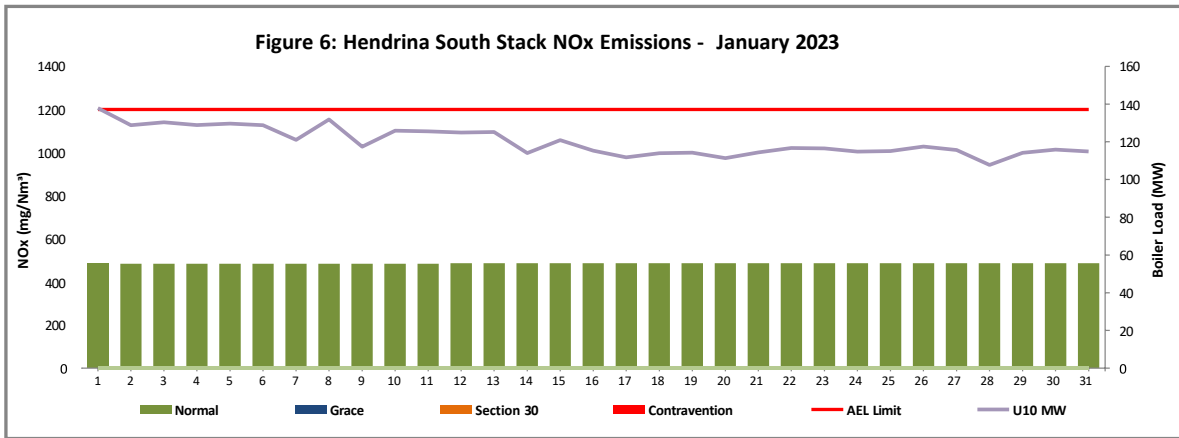


Figure 6: NOx emissions for the month of January 2023 against emission limit for the South Stack. The NOx limit is 1200mg/Nm3

## 7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of January-2023

North Stack	Event 1		Event 2		Event 3	
Unit No.	Unit 2		Unit 2		Unit 2	
Breaker Open (BO)	11:45 pm	2023/01/01	12:25 pm	2023/01/11	2:05 am	2023/01/31
Draught Group (DG) Shut Down (SD)	11:45 pm	2023/01/01	7:35 pm	2023/01/11	6:25 pm	2023/01/31
BO to DG SD (duration)		DD:HH:MM	00:07:10	DD:HH:MM	00:16:20	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
Emissions below limit from BC (end date)						
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack	Event 1	
Unit No.	Unit 10	
Breaker Open (BO)	8:55 pm	2023/01/08
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD:HH:MM
Fires in time		
Synch. to Grid (or BC)		
Fires in to BC (duration)		DD:HH:MM
Emissions below limit from BC (end date)		
Emissions below limit from BC (duration)		DD:HH:MM

**7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of January-2023 in mg/Nm<sup>3</sup>**

There was no high emissions during boiler start-up or shut-down process



**8 EMERGENCY GENERATION**

There was no emergency generation

**9 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
There were no complaints related to air quality received during the month of January 2023.					

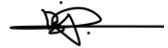
**10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER**

There was no incident reported for January 2023


**11 General**

The particulate matter (PM10) emissions on the North and South Common Stack were within the monthly limit; North stack recorded PM10 average emissions figure of 10.2 mg/Nm<sup>3</sup> while south stack recorded PM10 average figure of 20.9 mg/Nm<sup>3</sup>.


NB: The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission reports sent to your office.

 06/03/2023  
 \_\_\_\_\_  
 Date

**Compiled: Environmental Officer**  
**B. Madiop**

 06/03/2023  
 \_\_\_\_\_  
 Date

**Boiler/ FFP**  
**Marco Cossa**

 2023-03-09  
 \_\_\_\_\_  
 Date

**Authorised by: GM**  
**P Ndwandwe**

\_\_\_\_\_  
 Validated by Manager: 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