

**HENDRINA POWER STATION MONTHLY EMISSIONS REPORT**  
 Atmospheric Emission License 17/4/AEL/MP313/11/16



**1 RAW MATERIALS AND PRODUCTS**

Raw Materials and Products	Raw Material Type	Units	Max. Permitted Consumption Rate	Consumption Rate Jan-2020
	Coal	Tons	820 000	198 510.0
	Fuel Oil	Tons	3 200	359.03

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jan-2020
	Energy	GWh	1488	305.25
	Ash	Tons	290 000	54 610
	RE PM	kg/MWh	not specified	0.071

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	
Sulphur Content	%	0.6 to < 1	1.65
Ash Content	%	31 to < 35	27.51

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

Associated Unit/Stack	PM	SOx	NOx
North	75	3200	1200
South	75	3200	1200

**4 ABATEMENT TECHNOLOGY (%)**

Associated Unit/Stack	Technology Type	Efficiency Jan-2020
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.941%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.954%
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	CO <sub>2</sub>	O <sub>2</sub>
North	100.0	51.2	77.6		97.2
South	100.0	75.3	96.4		99.5

## 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of January-2020

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)	CO <sub>2</sub> (tons)
North	17.3	2 404.6	1 342.6	
South	4.3	1 088.8	381.5	
SUM	21.6	3 493.4	1 724.0	

Table 6.2: Operating days in compliance to PM AEL Limit - January 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	13.9
South	31	0	0	0	0	5.2
SUM	62	0	0	0	0	

Table 6.3: Operating days in compliance to SOx AEL Limit - January 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	1 824.6
South	31	0	0	0	0	1 319.4
SUM	62	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - January 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
North	23	8	0	0	8	996.0
South	31	0	0	0	0	463.3
SUM	54	8	0	0	8	

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 - January 2020

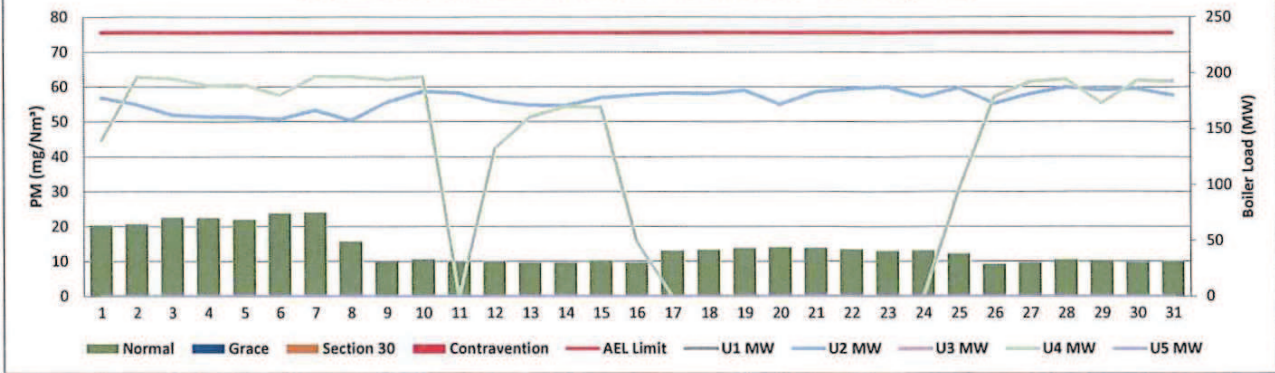


Figure 2: Hendrina South Stack PM Emissions - January 2020

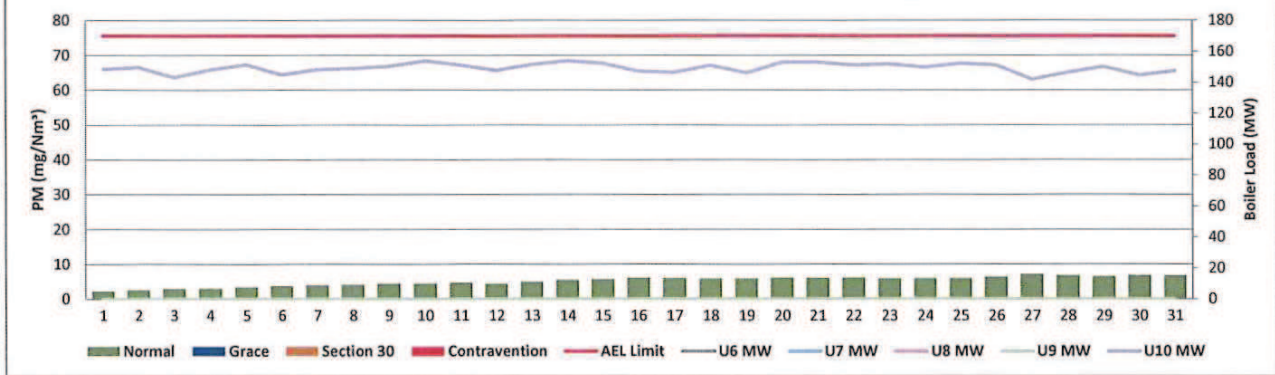


Figure 3: Hendrina North Stack SOx Emissions - January 2020

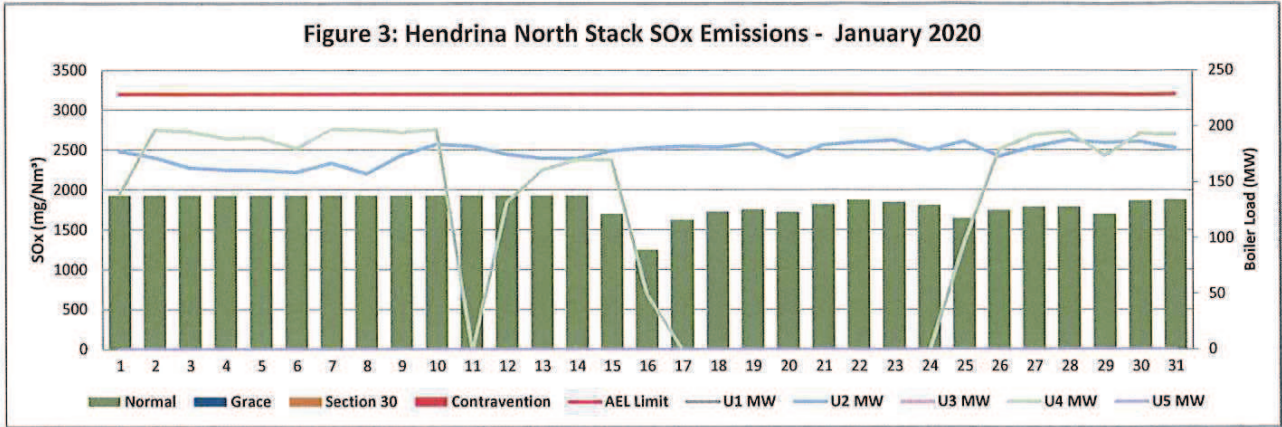
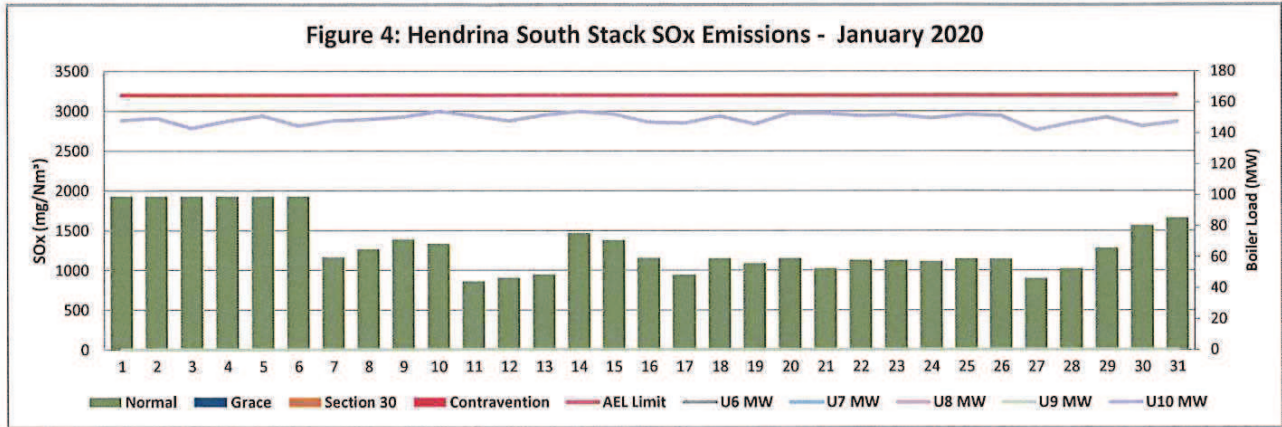
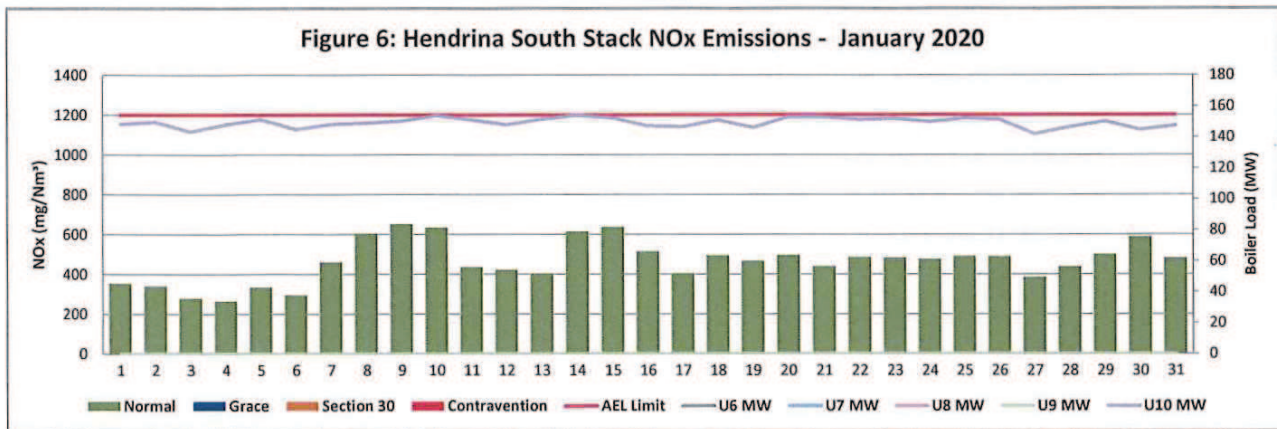
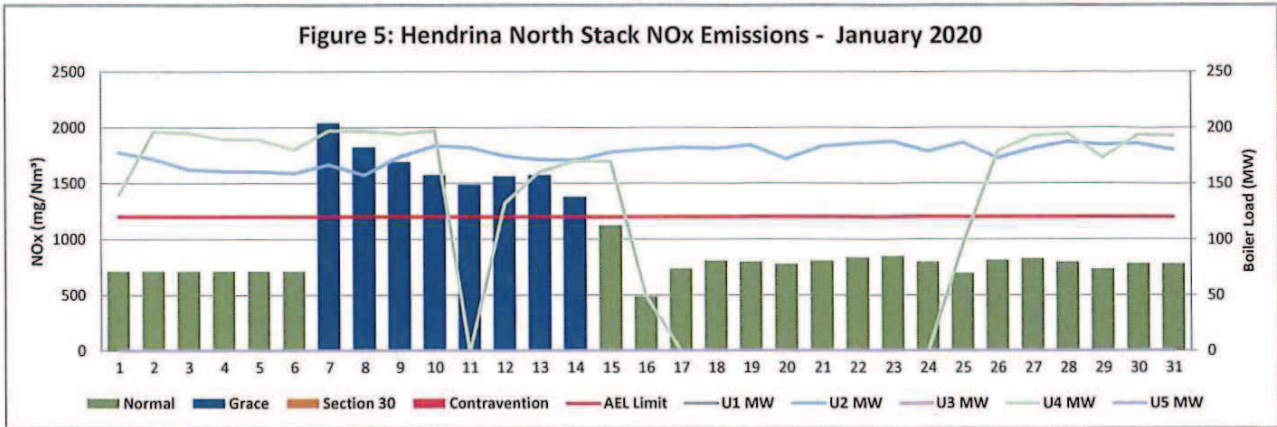


Figure 4: Hendrina South Stack SOx Emissions - January 2020





## 7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of January-2020

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		Unit 4		no event		no event	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	11:45 PM	2020/01/10	12:15 AM	2020/01/16		
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	11:20 AM	2020/01/11	01:15 AM	2020/01/17		
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	00:11:35	DD:HH:MM	01:01:00	DD:HH:MM		DD:HH:MM
Fires in time			2020/01/12	2020/01/12				
Synch. to Grid (or BC)			04:10 PM	2020/01/12				
Fires in to BC (duration)		DD:HH:MM	00:12:00	DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)			<i>not &gt; limit</i>	<i>not &gt; limit</i>				
Emissions below limit from BC (duration)		DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM

North Stack ...Continued	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		no event		no event		no event	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		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	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)		#REF!	12:05 AM	2020/01/17				
Draught Group (DG) Shut Down (SD)		#REF!	01:15 AM	2020/01/17				
BO to DG SD (duration)	n/a	DD:HH:MM	00:01:10	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 ...Continued	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		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

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of January-2020 in mg/Nm<sup>3</sup>

[Include reference to once off test showing typical emissions rates during fires in and SD]



Section 30 report for Nox North Stack between 7 and 14 January 2020 during monitor faultness.

Reserved for Addendum XXXX

11 General

Nox for North Stack monitor failure reported for period 7 to 14 January 2020, Section 30 was reported. See attached. Coal Sulphur quality did not meet a limit of 1%, as it was 1.65%.

Compiled: Environmental Officer \_\_\_\_\_ Date \_\_\_\_\_

Boiler/ FFP \_\_\_\_\_

Authorised by: GM \_\_\_\_\_ Date \_\_\_\_\_  
M. Lesolang

Validated by Manager: \_\_\_\_\_ Boiler or Environment: \_\_\_\_\_ Date \_\_\_\_\_  
R. Nelwamondo J. Ramagoma

Compiled by: Boiler Engineering Department

FFP SE/ Environmental Officer

For: Nkangala District Municipality

Air Quality Officer

Copies: Eskom Environmental Management

Group Technology Engineering

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

