

HENDRINA POWER STATION MONTHLY EMISSIONS REPORT

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



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1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted Consumption Rate	Consumption Rate Nov-2020
	Coal	Tons	820 000	338 050.0
	Fuel Oil	Tons	3 200	633.08

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Nov-2020
	Energy	GWh	1440	553.31
	Ash	Tons	290 000	84 039
	RE PM	kg/MWh	not specified	0.041

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	1.09
Ash Content	%	31 to < 35	24.86

3 EMISSION LIMITS (mg/Nm³)

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

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Nov-2020
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.947%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.940%
Unit 5	Fabric Filter Plant (FFP)	99.961%
Unit 6	Fabric Filter Plant (FFP)	99.967%
Unit 7	Fabric Filter Plant (FFP)	99.961%
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 ₂	NO	O ₂
North	100.0	95.0	99.6	93.2
South	100.0	100.0	100.0	80.6

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
North	17.0	1 726.0	721.5
South	5.9	3 158.6	1 774.6
SUM	22.9	4 884.6	2 496.1

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	31	0	0	0	0	15.4
South	31	0	0	0	0	2.9
SUM	62	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	31	0	0	0	0	1 512.6
South	31	0	0	0	0	1 413.7
SUM	62	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	31	0	0	0	0	623.6
South	31	0	0	0	0	795.1
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

Figure 1: Hendrina North Stack PM Emissions - November 2020

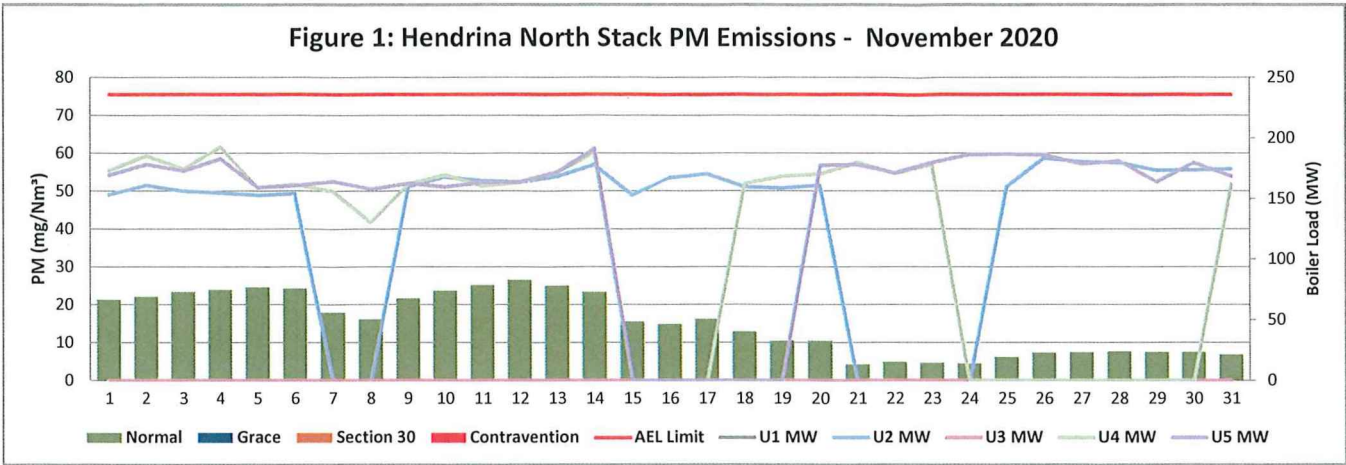


Figure 2: Hendrina South Stack PM Emissions - November 2020

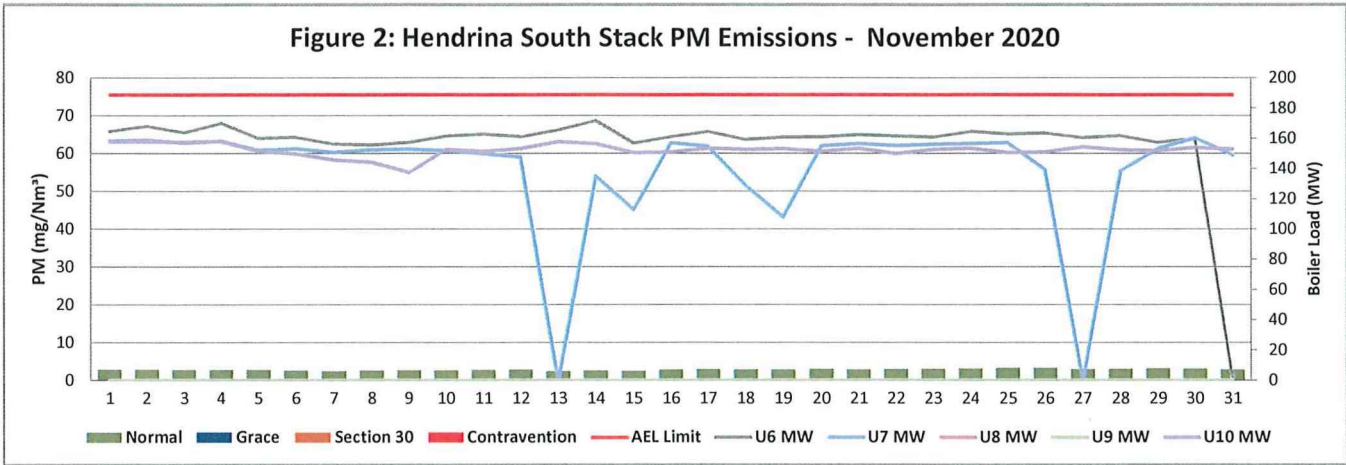


Figure 3: Hendrina North Stack SOx Emissions - November 2020

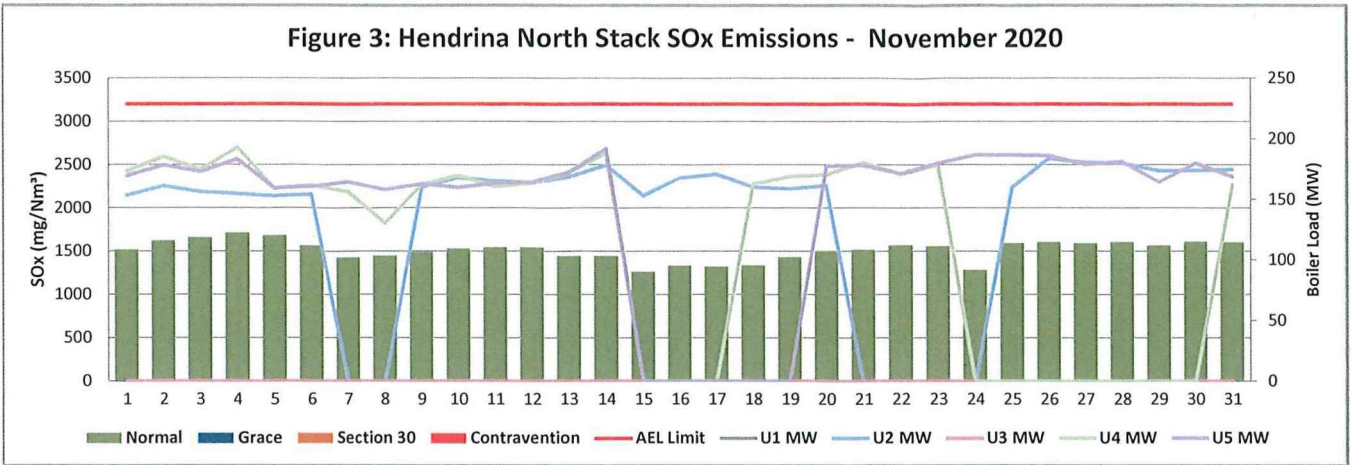


Figure 4: Hendrina South Stack SOx Emissions - November 2020

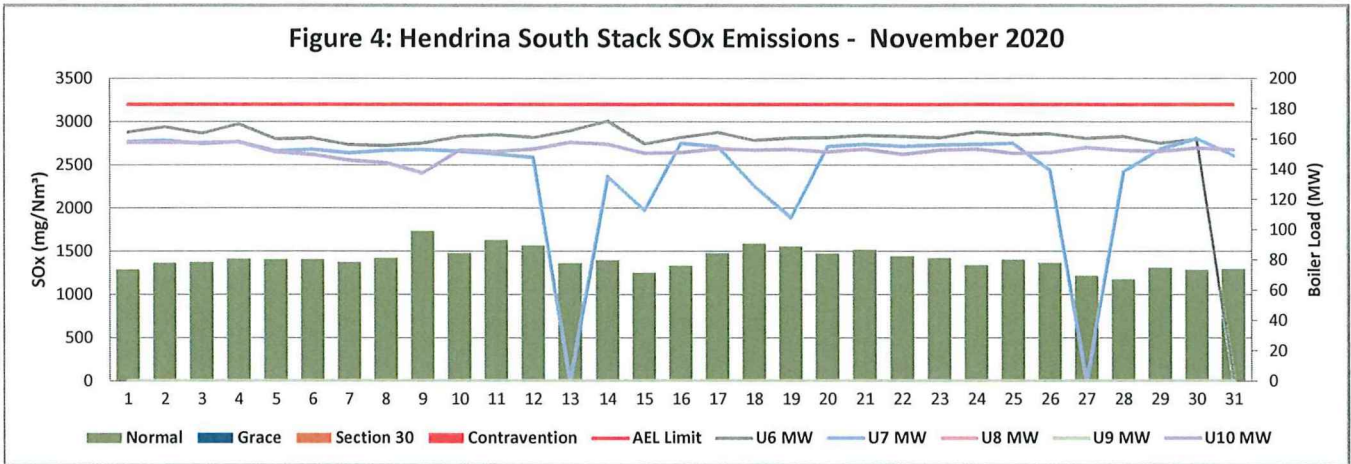


Figure 5: Hendrina North Stack NOx Emissions - November 2020

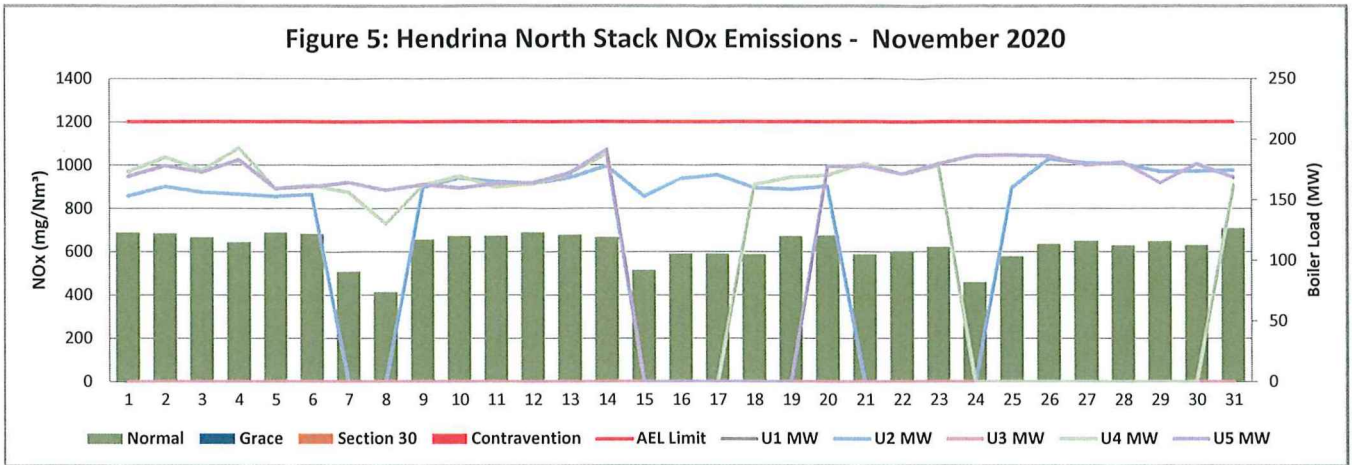
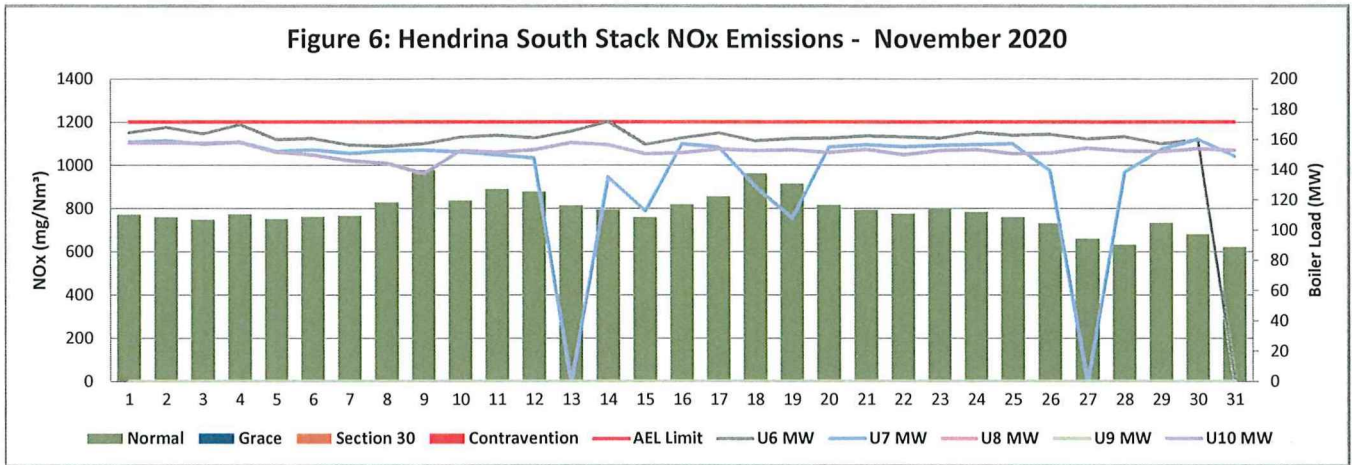


Figure 6: Hendrina South Stack NOx Emissions - November 2020



7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>Unit 2</i>		<i>Unit 2</i>		<i>Unit 4</i>		<i>no event</i>	
Breaker Open (BO)	<i>10:15 PM</i>	<i>2020/11/06</i>	<i>10:35 PM</i>	<i>2020/11/20</i>	<i>11:55 PM</i>	<i>2020/11/14</i>	<i>11:45 PM</i>	<i>2020/11/23</i>
Draught Group (DG) Shut Down (SD)	<i>05:15 AM</i>	<i>2020/11/07</i>	<i>12:35 PM</i>	<i>2020/11/21</i>	<i>08:45 AM</i>	<i>2020/11/15</i>	<i>07:05 AM</i>	<i>2020/11/24</i>
BO to DG SD (duration)	<i>00:07:00</i>	DD:HH:MM	<i>00:14:00</i>	DD:HH:MM	<i>00:08:50</i>	DD:HH:MM	<i>00:07:20</i>	DD:HH:MM
Fires in time	<i>06:00 AM</i>	<i>2020/11/09</i>	<i>2020/11/25</i>	<i>2020/11/25</i>	<i>18:03:40</i>	<i>2020/11/18</i>		
Synch. to Grid (or BC)	<i>12:00 PM</i>	<i>2020/11/09</i>	<i>01:10 PM</i>	<i>2020/11/25</i>	<i>09:40 AM</i>	<i>2020/11/18</i>		
Fires in to BC (duration)	<i>00:06:00</i>	DD:HH:MM	<i>00:06:00</i>	DD:HH:MM	<i>00:06:00</i>	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>		
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM

North 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>Unit 5</i>		<i>no event</i>	
Breaker Open (BO)			<i>BO previously</i>	<i>BO previously</i>	<i>12:15 PM</i>	<i>2020/11/14</i>		
Draught Group (DG) Shut Down (SD)			<i>n/a</i>	<i>n/a</i>	<i>12:15 PM</i>	<i>2020/11/14</i>		
BO to DG SD (duration)		DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time					<i>20:05:10</i>	<i>2020/11/20</i>		
Synch. to Grid (or BC)					<i>10:10 AM</i>	<i>2020/11/20</i>		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM	<i>00:05:00</i>	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)					<i>not > limit</i>	<i>not > limit</i>		
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 7		Unit 7		no event		no event	
Breaker Open (BO)		#REF!	11:55 PM	2020/11/26			BO previously	BO previously
Draught Group (DG) Shut Down (SD)		#REF!	12:15 AM	2020/11/27			n/a	n/a
BO to DG SD (duration)	n/a	DD:HH:MM	00:00:20	DD:HH:MM		DD:HH:MM	n/a	DD:HH:MM
Fires in time	03:30 PM	2020/11/15	2020/11/29	2020/11/29				
Synch. to Grid (or BC)	10:45 PM	2020/11/11	09:10 AM	2020/11/29				
Fires in to BC (duration)	#####	DD:HH:MM	00:05:00	DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM

South 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


7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of November-2020 in mg/Nm³

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


Remember to add attachments here, see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

 17/12/2020

Compiled Environmental Officer Date
B Madipe

 06/01/2021

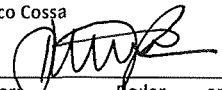
Authorised by: BM Date
M. Lesolang

Compiled by Boiler Engineering Department
For Nkangala District Municipality
Copies Eskom Environmental Management

Group Technology Engineering

Hendrina Power Station

Boiler/ FFP Date
Marco Cossa

 06/01/2021

Validated by Manager Boiler or Environmental Date
R Nelwamondo J Ramagoma

FFP SE/ Environmental Officer
Air Quality Officer
D Herbst
B Mccourt

R 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