

**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 Oct-2020
	Coal	Tons	820 000	303 450.0
Fuel Oil	Tons	3 200	753.77	

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Oct-2020
	Energy	GWh	1488	516.65
Ash	Tons	290 000	75 165	
RE PM	kg/MWh	not specified	0.040	

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	1.21
Ash Content	%	31 to < 35	24.77

**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 Oct-2020
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.957%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.955%
Unit 5	Fabric Filter Plant (FFP)	99.969%
Unit 6	Fabric Filter Plant (FFP)	99.976%
Unit 7	Fabric Filter Plant (FFP)	99.934%
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	100.0	100.0
South	100.0	96.2	99.5	91.8

## 6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)
North	15.9	2 120.1	922.7
South	4.6	1 990.3	1 073.5
SUM	20.4	4 110.4	1 996.2

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	12.9
South	31	0	0	0	0	3.2
SUM	62	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	1 599.6
South	31	0	0	0	0	1 280.5
SUM	62	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	698.2
South	31	0	0	0	0	685.8
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 - October 2020

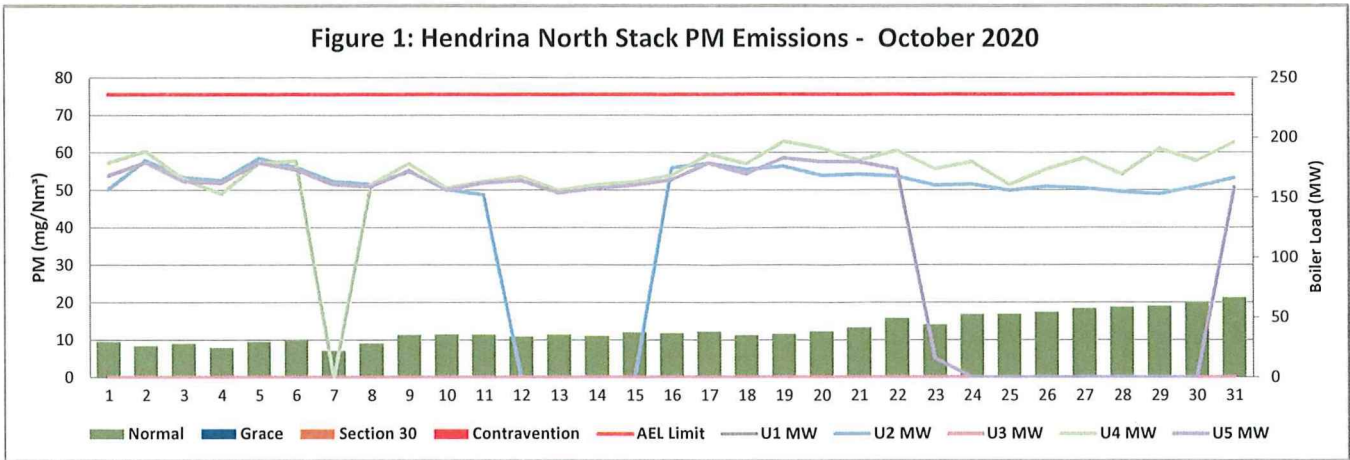


Figure 2: Hendrina South Stack PM Emissions - October 2020

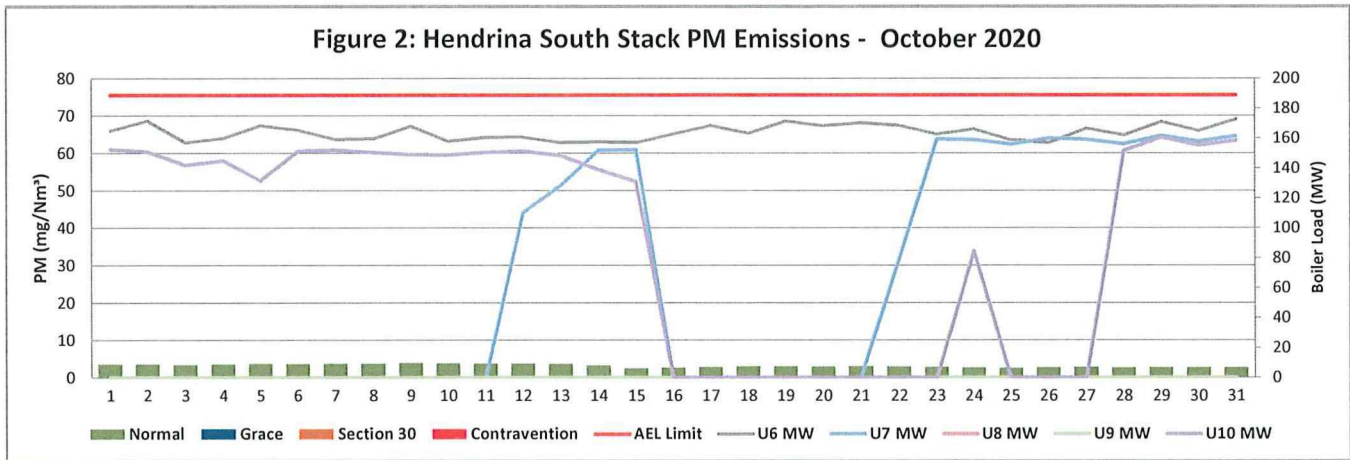




Figure 3: Hendrina North Stack SOx Emissions - October 2020

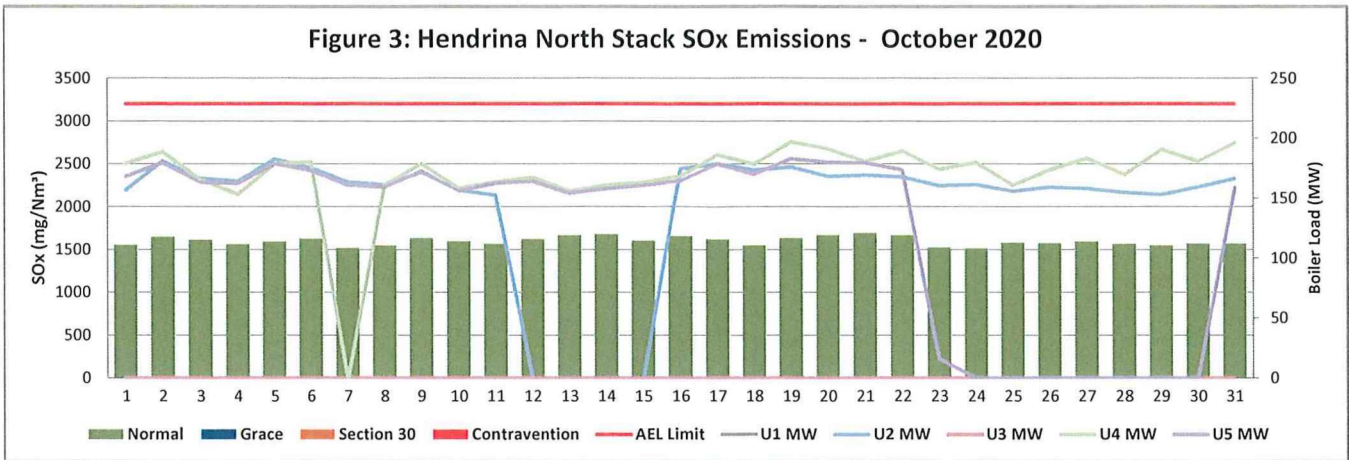


Figure 4: Hendrina South Stack SOx Emissions - October 2020

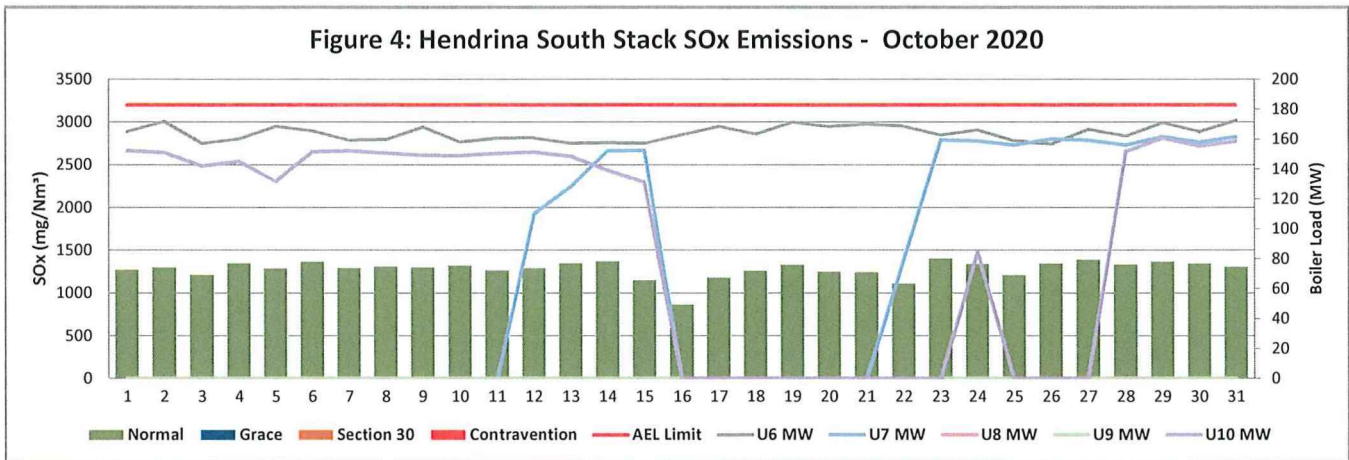


Figure 5: Hendrina North Stack NOx Emissions - October 2020

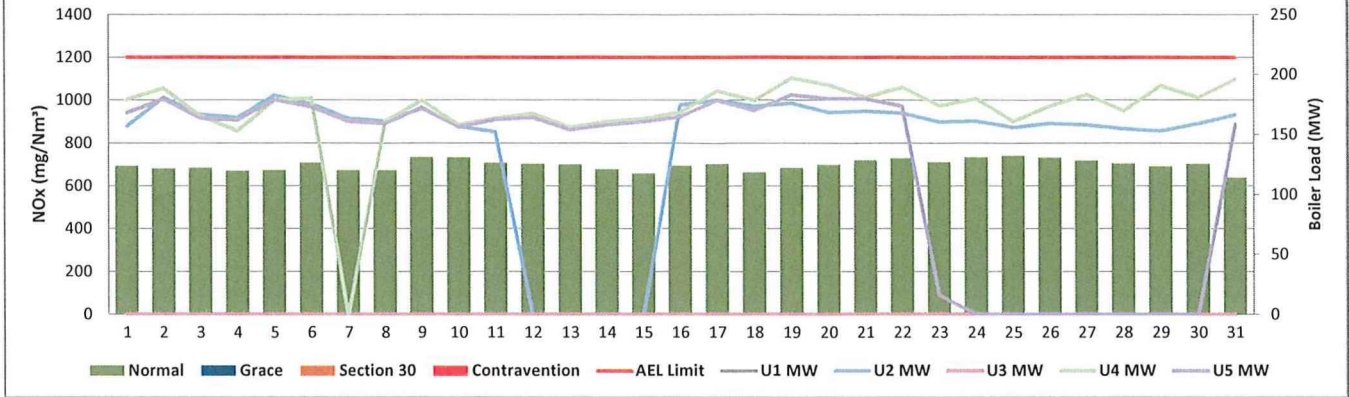
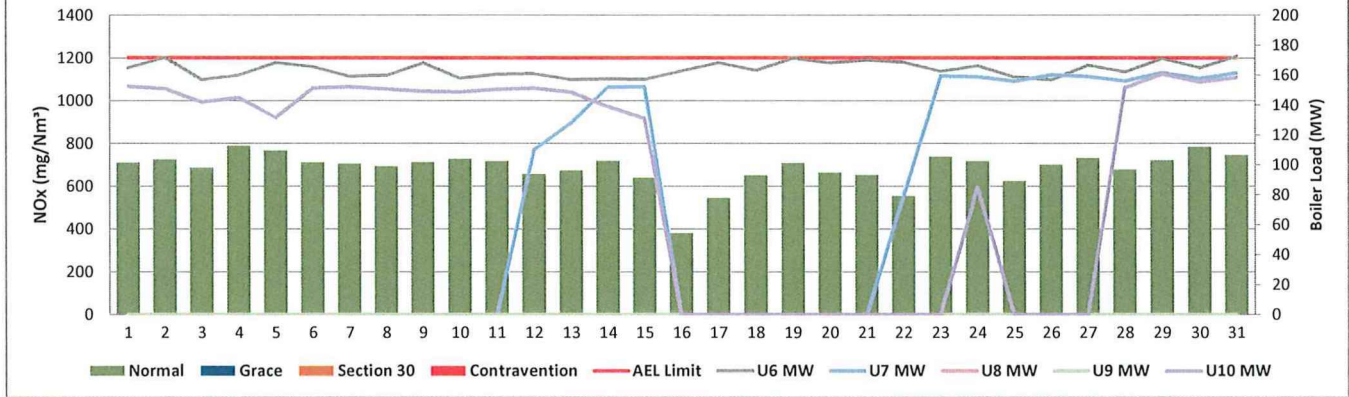


Figure 6: Hendrina South Stack NOx Emissions - October 2020



## 7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>Unit</i>		<i>no event</i>		<i>Unit</i>		<i>Unit 4</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>10:05 AM</i>	<i>2020/10/11</i>	<i>BO previously</i>	<i>BO previously</i>	<i>11:05 PM</i>	<i>2020/10/06</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>02:05 PM</i>	<i>2020/10/11</i>	<i>n/a</i>	<i>n/a</i>	<i>11:45 PM</i>	<i>2020/10/06</i>
BO to DG SD (duration)	<i>n/a</i>	<i>DD:HH:MM</i>	<i>00:04:00</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>	<i>00:00:40</i>	<i>DD:HH:MM</i>
Fires in time	<i>06:40 PM</i>	<i>2020/10/01</i>			<i>15:18:10</i>	<i>2020/10/15</i>	<i>2020/10/07</i>	<i>2020/10/07</i>
Synch. to Grid (or BC)	<i>06:40 AM</i>	<i>2020/10/02</i>			<i>06:10 AM</i>	<i>2020/10/16</i>	<i>11:50 AM</i>	<i>2020/10/08</i>
Fires in to BC (duration)	<i>00:12:00</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>	<i>00:12:00</i>	<i>DD:HH:MM</i>	<i>00:12:00</i>	<i>DD:HH:MM</i>
Emissions below limit from BC (end date)	<i>not &gt; limit</i>	<i>not &gt; limit</i>			<i>not &gt; limit</i>	<i>not &gt; limit</i>	<i>not &gt; limit</i>	<i>not &gt; limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>

North Stack ...Continued	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>Unit 5</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)	<i>10:35 PM</i>	<i>2020/10/22</i>						
Draught Group (DG) Shut Down (SD)	<i>11:35 PM</i>	<i>2020/10/22</i>						
BO to DG SD (duration)	<i>00:01:00</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Fires in time	<i>08:40 PM</i>	<i>2020/10/30</i>						
Synch. to Grid (or BC)	<i>08:40 AM</i>	<i>2020/10/31</i>						
Fires in to BC (duration)	<i>00:12:00</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Emissions below limit from BC (end date)	<i>not &gt; limit</i>	<i>not &gt; limit</i>						
Emissions below limit from BC (duration)	<i>n/a</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 7		Unit 10		no event		no event	
Breaker Open (BO)		#REF!	10:45 PM	2020/10/15				
Draught Group (DG) Shut Down (SD)		#REF!	03:15 AM	2020/10/16				
BO to DG SD (duration)	n/a	DD:HH:MM	00:04:30	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	03:10 PM	2020/10/22	2020/10/27	2020/10/27				
Synch. to Grid (or BC)	01:55 PM	2020/10/14	04:00 AM	2020/10/28				
Fires in to BC (duration)	#####	DD:HH:MM	00:06:00	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 October-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

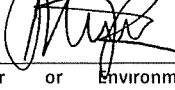
Reserved for Addendum XXXX

11 General


17/11/2020  
 Compiled Environmental Officer \_\_\_\_\_ Date


17/11/2020  
 Authorised by GM \_\_\_\_\_ Date  
 M Lesolang


17/11/2020  
 Boiler/ FFP \_\_\_\_\_ Date  
 Marco Cossa


17/11/2020  
 Validated by Manager \_\_\_\_\_ Date  
 J. Ramagoma  
 Boiler or Environment: R Nelwamondo J Ramagoma

Compiled by Boiler Engineering Department

For Nkangala District Municipality

Copies Eskom Environmental Management

Group Technology Engineering

Hendrina Power Station

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