

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 Jul-2020
	Coal	Tons	820 000	200 120.0
Fuel Oil	Tons	3 200	544.59	

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jul-2020
	Energy	GWh	1488	342.22
Ash	Tons	290 000	55 233	
RE PM	kg/MWh	not specified	0.026	

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	0.99
Ash Content	%	31 to < 35	27.60

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 Jul-2020
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.981%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.982%
Unit 5	Fabric Filter Plant (FFP)	99.987%
Unit 6	Fabric Filter Plant (FFP)	99.943%
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	<i>Fabric Filter Plant (FFP)</i>	<i>100.000%</i>
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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	<i>89.0</i>	<i>88.7</i>	<i>88.8</i>	<i>87.0</i>
South	<i>84.8</i>	<i>24.7</i>	<i>84.1</i>	<i>32.1</i>

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
North	5.3	1 626.9	663.6
South	3.7	1 038.6	416.9
SUM	9.0	2 665.5	1 080.4

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	27	0	0	0	0	5.6
South	26	0	0	0	0	5.1
SUM	53	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	28	0	0	0	0	1 692.0
South	27	0	0	0	0	1 218.7
SUM	55	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	28	0	0	0	0	675.1
South	27	0	0	0	0	454.9
SUM	55	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 - July 2020

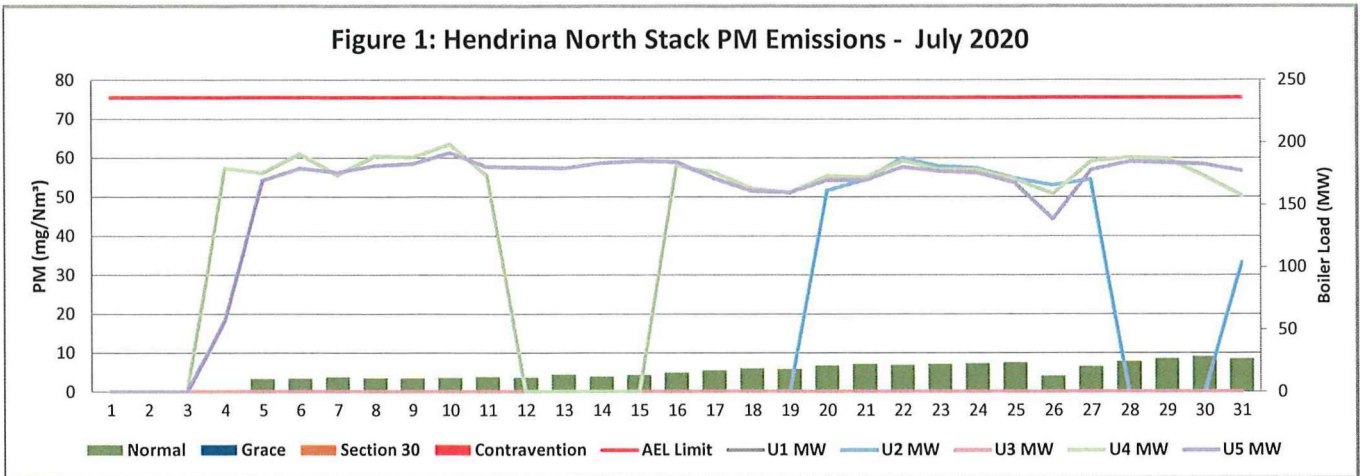


Figure 2: Hendrina South Stack PM Emissions - July 2020

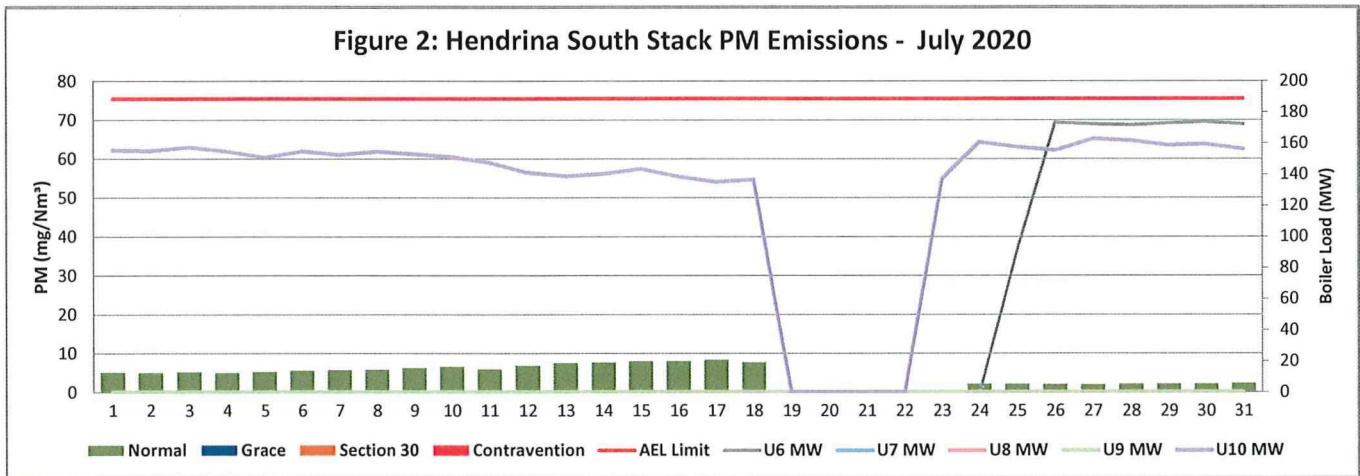


Figure 3: Hendrina North Stack SOx Emissions - July 2020

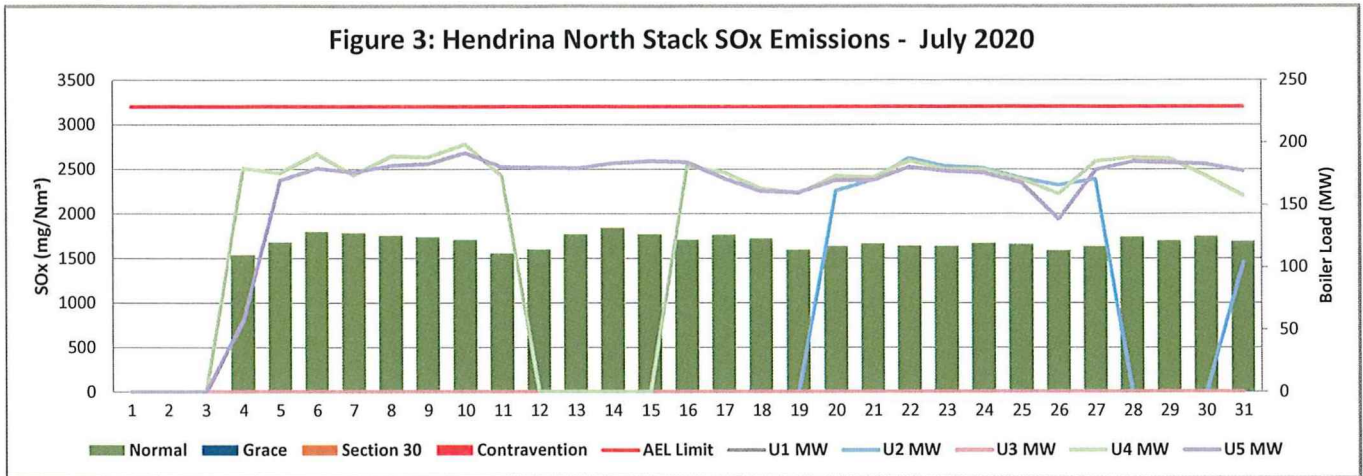


Figure 4: Hendrina South Stack SOx Emissions - July 2020

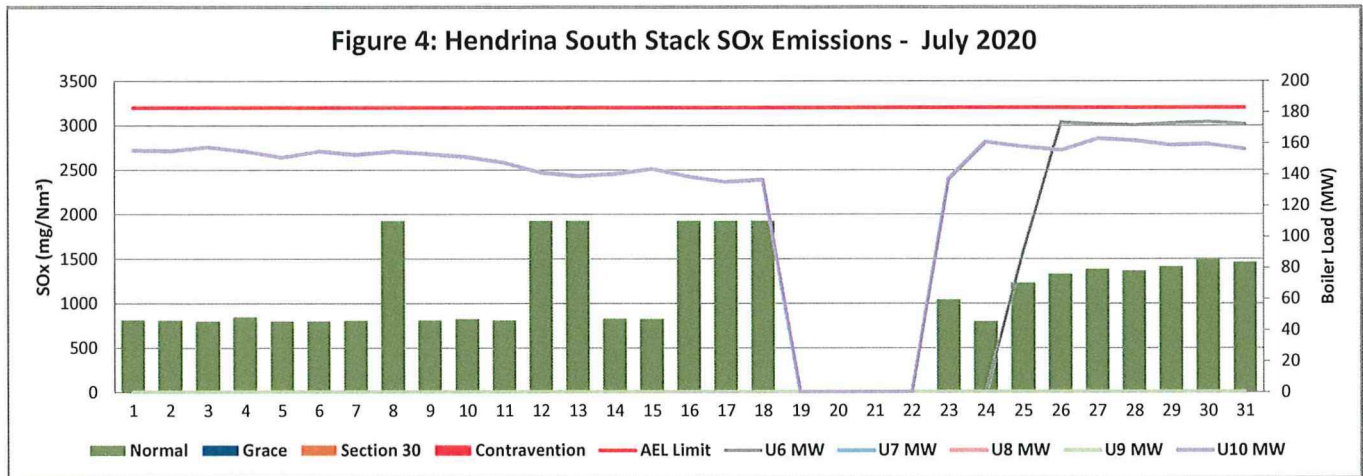


Figure 5: Hendrina North Stack NOx Emissions - July 2020

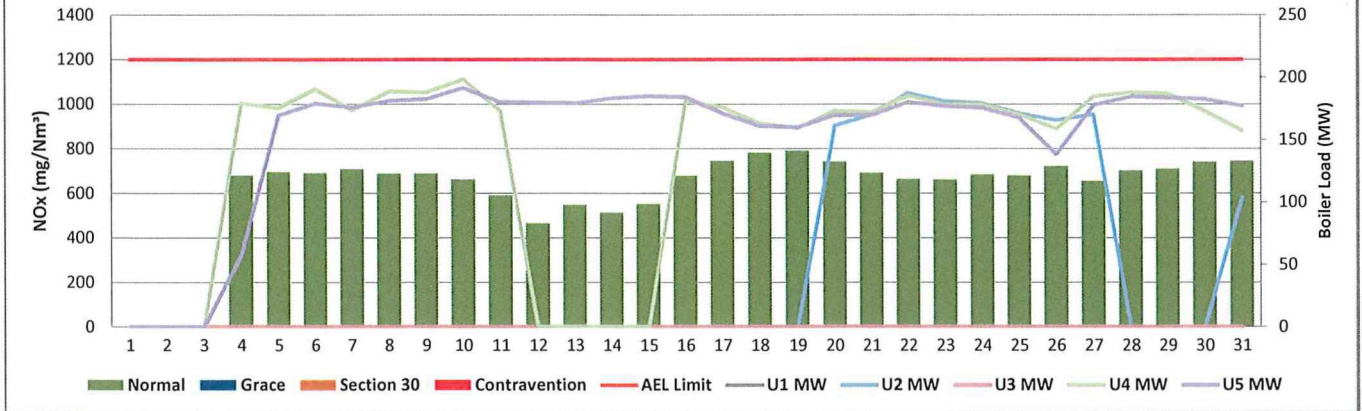
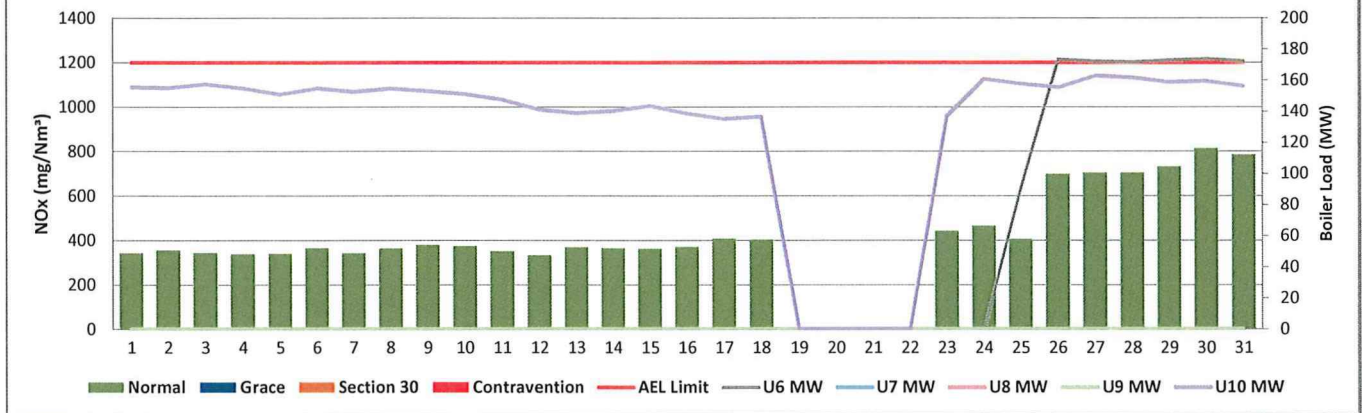


Figure 6: Hendrina South Stack NOx Emissions - July 2020



7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit		no event		Unit		Unit	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>12:15 PM</i>	<i>2020/07/27</i>	<i>BO previously</i>	<i>BO previously</i>	<i>BO previously</i>	<i>BO previously</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>08:35 PM</i>	<i>2020/07/27</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>
BO to DG SD (duration)	<i>n/a</i>	<i>DD:HH:MM</i>	<i>00:08:20</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>
Fires in time	<i>04:10 PM</i>	<i>2020/07/19</i>			<i>31:10:00</i>	<i>2020/07/31</i>	<i>2020/07/03</i>	<i>2020/07/03</i>
Synch. to Grid (or BC)	<i>04:10 AM</i>	<i>2020/07/20</i>			<i>10:00 PM</i>	<i>2020/07/31</i>	<i>09:40 AM</i>	<i>2020/07/04</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 > 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>	<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	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 4		no event		Unit		no event	
Breaker Open (BO)	<i>01:35 PM</i>	<i>2020/07/11</i>			<i>BO previously</i>	<i>BO previously</i>		
Draught Group (DG) Shut Down (SD)	<i>04:45 PM</i>	<i>2020/07/11</i>			<i>n/a</i>	<i>n/a</i>		
BO to DG SD (duration)	<i>00:03:10</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Fires in time	<i>02:20 PM</i>	<i>2020/07/15</i>			<i>04:11:00</i>	<i>2020/07/04</i>		
Synch. to Grid (or BC)	<i>02:20 AM</i>	<i>2020/07/16</i>			<i>11:00 PM</i>	<i>2020/07/04</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>DD:HH:MM</i>
Emissions below limit from BC (end date)	<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>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>

South Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>Unit</i>		<i>Unit 10</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)		#REF!	11:05 PM	2020/07/18				
Draught Group (DG) Shut Down (SD)		#REF!	11:05 AM	2020/07/19				
BO to DG SD (duration)	n/a	DD:HH:MM	00:12:00	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	06:50 AM	2020/07/26	2020/07/23	2020/07/23				
Synch. to Grid (or BC)			04:10 PM	2020/07/23				
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)		DD:HH:MM	n/a	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 July-2020 in mg/Nm³

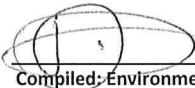

[Include reference to once off test showing typical emissions rates during fires in and SD]

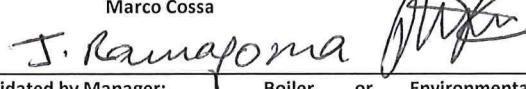
Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

Between 1 to 3 July North Stack boiler units were off, and no emissions were recorded.
Between the 19 to 22 July all boiler units on North Stack were offload, and no emissions were recorded


17/08/2020
 Compiled: Environmental Officer Date
 B. Madiop

19/08/2020
 Authorised by: GM Date
 M. Lesolang

Boiler/ FFP Date
 Marco Cossa

18/08/20
 Validated by Manager: Boiler or Environmenta Date
 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