

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 Feb-2021
	Coal	Tons	820 000	251 045.0
Fuel Oil	Tons	3 200	956.38	

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Feb-2021
	Energy	GWh	1344	376.42
Ash	Tons	290 000	63 489	
RE PM	kg/MWh	not specified	0.347	

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	0.95
Ash Content	%	31 to < 35	25.29

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO _x	NO _x
North	75	3200	1200
South	75	3200	1200

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Feb-2021
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.991%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.991%
Unit 5	Fabric Filter Plant (FFP)	Unit Off-line
Unit 6	Fabric Filter Plant (FFP)	100.000%
Unit 7	Fabric Filter Plant (FFP)	100.000%
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	CO ₂
North	<i>87.3</i>	<i>85.7</i>	<i>86.7</i>	<i>81.5</i>	<i>68.5</i>
South	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of February-2021

Associated Unit/Stack	PM (tons)	SO _x (tons)	NO _x (tons)	CO ₂ (tons)
North	1.4	726.1	337.9	66 374.7
South	129.1	3 700.5	2 096.4	443 074.4
SUM	130.5	4 426.6	2 434.2	509 449.2

Table 6.2: Operating days in compliance to PM AEL Limit - February 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	24	0	0	0	0	3.3
South	29	1	0	0	1	58.7
SUM	53	1	0	0	1	

Table 6.3: Operating days in compliance to SOx AEL Limit - February 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	27	0	0	0	0	1 490.2
South	30	0	0	0	0	1 665.7
SUM	57	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - February 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	27	0	0	0	0	693.2
South	30	0	0	0	0	942.5
SUM	57	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 - February 2021

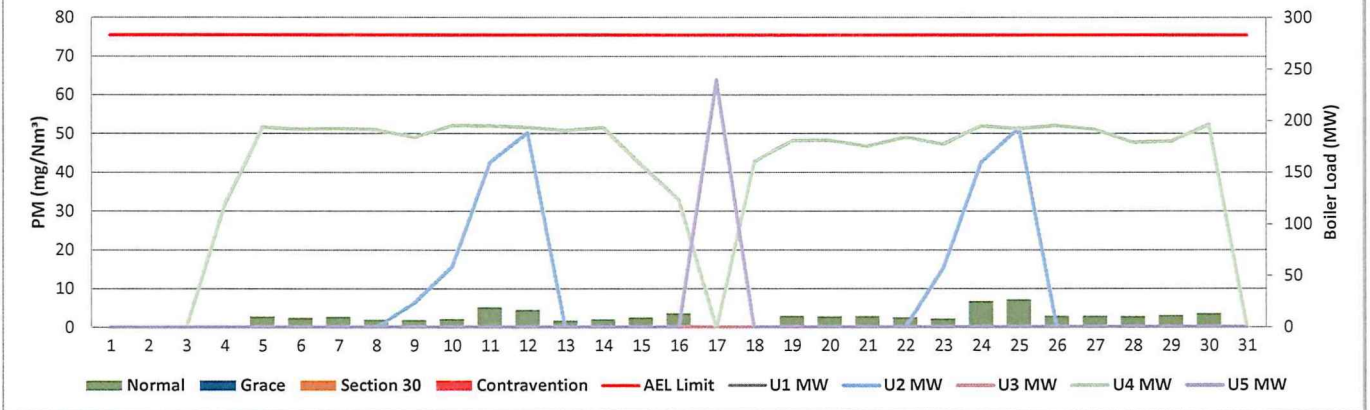


Figure 2: Hendrina South Stack PM Emissions - February 2021

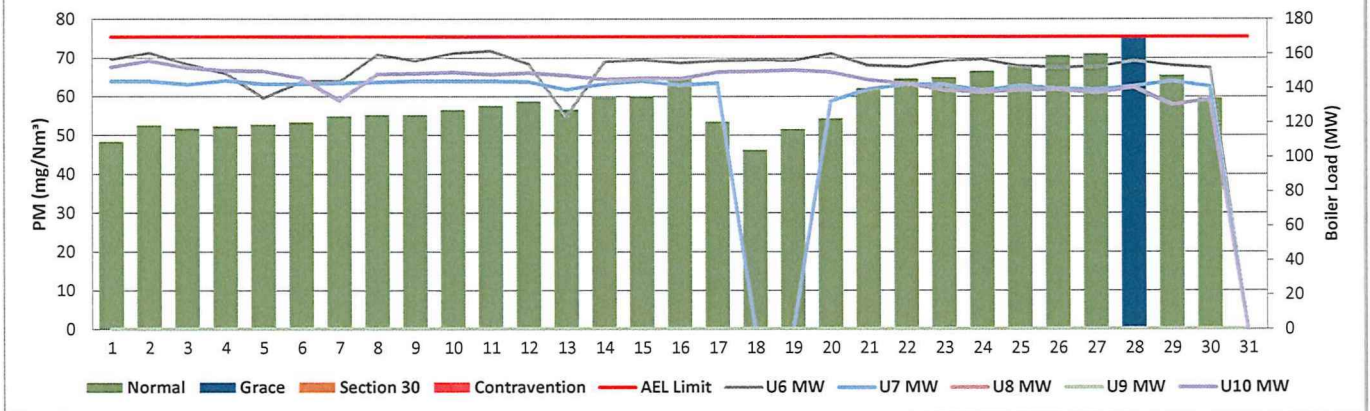


Figure 3: Hendrina North Stack SOx Emissions - February 2021

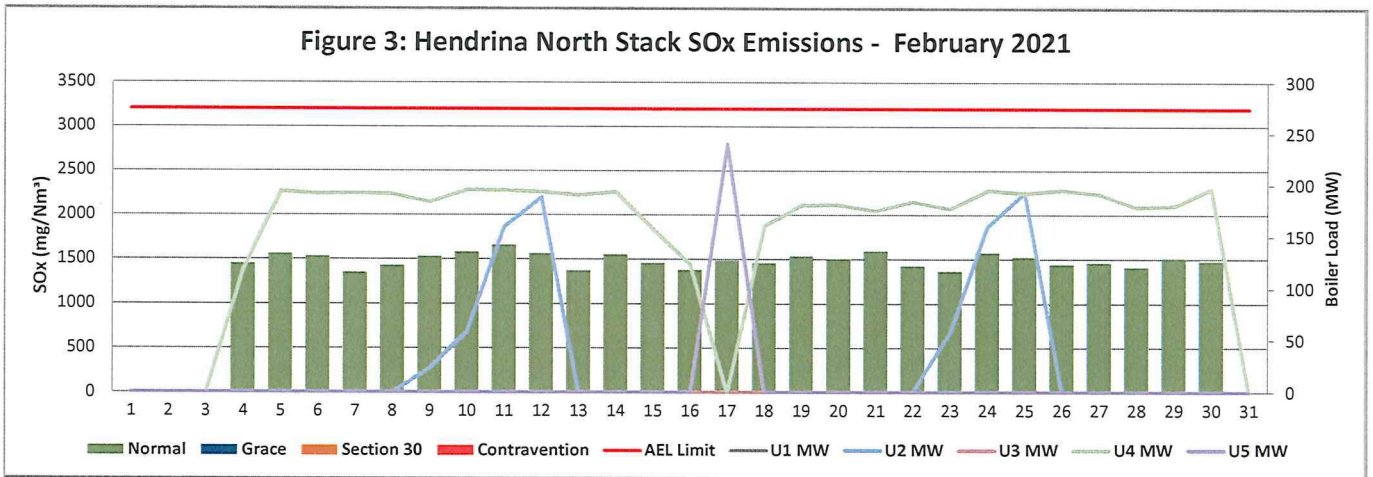


Figure 4: Hendrina South Stack SOx Emissions - February 2021

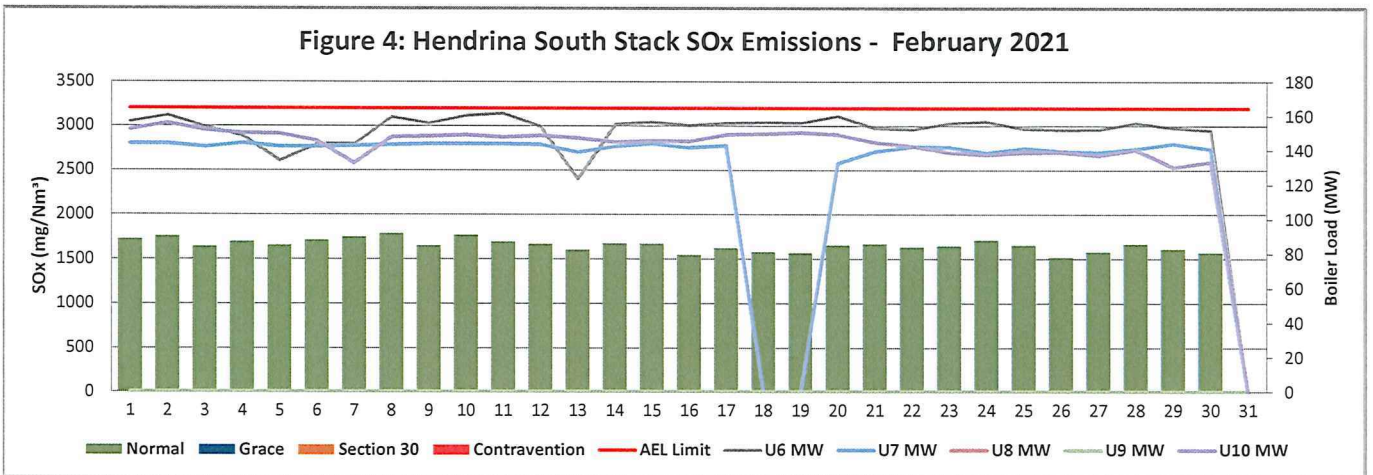


Figure 5: Hendrina North Stack NOx Emissions - February 2021

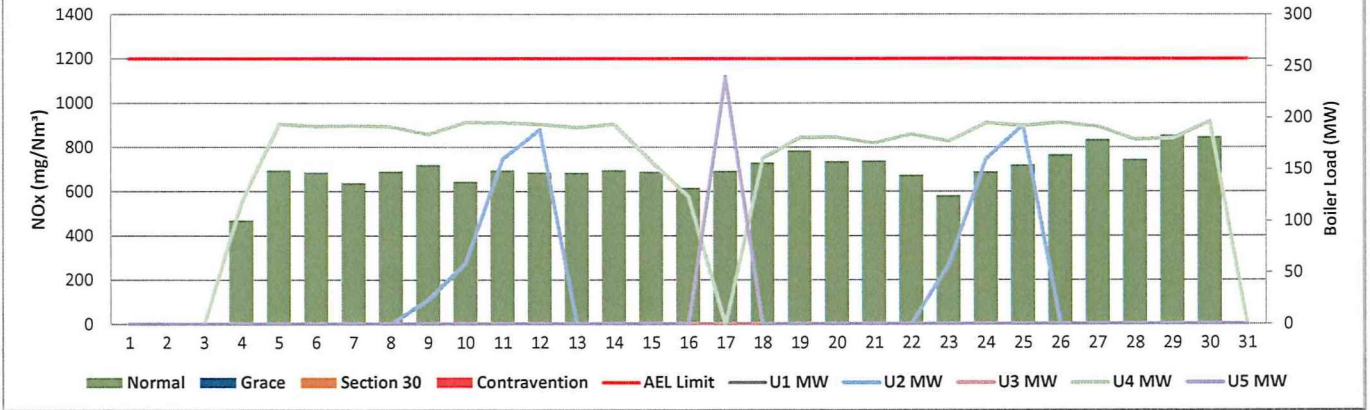
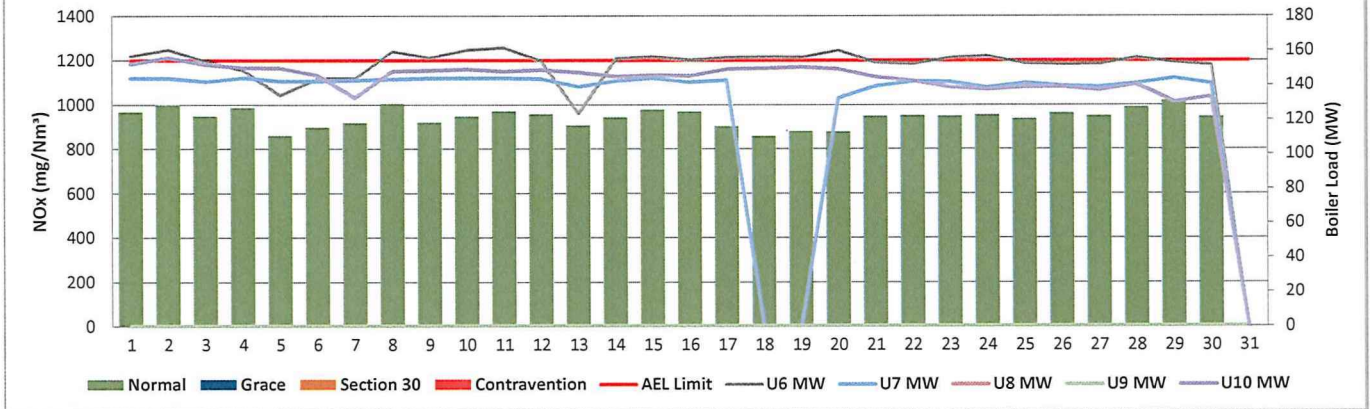


Figure 6: Hendrina South Stack NOx Emissions - February 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of February-2021

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit		Unit 2		no event		Unit	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>04:35 PM</i>	<i>2021/02/12</i>	<i>04:45 PM</i>	<i>2021/02/25</i>	<i>BO previously</i>	<i>BO previously</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>10:15 PM</i>	<i>2021/02/12</i>	<i>11:55 PM</i>	<i>2021/02/25</i>	<i>n/a</i>	<i>n/a</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:05:40</i>	DD:HH:MM	<i>00:07:10</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM
Fires in time	<i>08:20 AM</i>	<i>2021/02/10</i>	<i>2021/02/23</i>	<i>2021/02/23</i>			<i>2021/02/04</i>	<i>2021/02/04</i>
Synch. to Grid (or BC)	<i>08:20 PM</i>	<i>2021/02/10</i>	<i>10:00 PM</i>	<i>2021/02/23</i>			<i>06:40 PM</i>	<i>2021/02/04</i>
Fires in to BC (duration)	<i>00:12:00</i>	DD:HH:MM	<i>00:12:00</i>	DD:HH:MM		DD:HH:MM	<i>00:12:00</i>	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		DD:HH:MM	<i>n/a</i>	DD:HH:MM

North Stack ...Continued	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 4		no event		no event		no event	
Breaker Open (BO)	<i>03:05 AM</i>	<i>2021/02/16</i>						
Draught Group (DG) Shut Down (SD)	<i>01:15 PM</i>	<i>2021/02/16</i>						
BO to DG SD (duration)	<i>00:10:10</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	<i>01:30 AM</i>	<i>2021/02/18</i>						
Synch. to Grid (or BC)	<i>01:30 PM</i>	<i>2021/02/18</i>						
Fires in to BC (duration)	<i>00:12:00</i>	DD:HH:MM		DD:HH:MM		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)	<i>n/a</i>	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>Unit 7</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)		<i>#REF!</i>						
Draught Group (DG) Shut Down (SD)		<i>#REF!</i>						
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	<i>04:50 AM</i>	<i>2021/02/20</i>						
Synch. to Grid (or BC)	<i>11:05 AM</i>	<i>2021/02/16</i>						
Fires in to BC (duration)	<i>#####</i>	DD:HH:MM		DD:HH:MM		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)	<i>n/a</i>	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 February-2021 in mg/Nm³

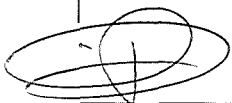
[Include reference to once off test showing typical emissions rates during fires in and SD]

Remember to add attachments here, see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

On the 28th Febraury the plant was in maintenance and PM emissions on the South Stack exceeded on graee period



17-03-2021

Compiled Environmental Officer
B Madiope

Authorised by GM
L Ndube



17/03/2021

Date

Compiled by Boiler Engineering Department
For Nkangala District Municipality
Copies Eskom Environmental Management
Group Technology Engineering
Hendrina Power Station

R. T NELWAMONDO 17/03/2021

Boiler/ FFP
Marco Cossa

J. Ramagoma 17/03/2021

Validated by Manager
Boiler or Environmenta
R Nelwamondo J Ramagoma

FFP SE/ Environmental Officer
Air Qaulity 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