

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 Dec-2021
	Coal	Tons	820 000	105 227.0
Fuel Oil	Tons	3 200	193.13	

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Dec-2021
	Energy	GWh	1488	350.84
Ash	Tons	290 000	23 539	
RE PM	kg/MWh	not specified	0.190	

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	1.60
Ash Content	%	31 to < 35	22.37

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 Dec-2021
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)	99.960%
Unit 5	Fabric Filter Plant (FFP)	99.968%
Unit 6	Fabric Filter Plant (FFP)	99.984%
Unit 7	Fabric Filter Plant (FFP)	99.918%
Unit 8	Fabric Filter Plant (FFP)	Unit Off-line
Unit 9	Fabric Filter Plant (FFP)	Unit Off-line
Unit 10	Fabric Filter Plant (FFP)	Unit Off-line

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	100.0	56.9	96.1	54.0	0.0
South	99.9	99.2	99.5	19.6	60.8

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SOx (tons)	NOx (tons)	CO ₂ (tons)
North	4.4	2 207.5	860.4	210 116.2
South	62.4	3 247.2	1 662.0	230 712.2
SUM	66.8	5 454.7	2 522.4	440 828.4

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	31	0	0	0	0	3.8
South	30	0	0	0	0	37.6
SUM	61	0	0	0	0	

Comments: Normal days for PM determined according to section 7.3.5 of AEL (PM not reportable when units are off or during start-ups/shutdowns)
 North Stack was running normal for the whole 31 days of December
 SouthStack reported only 30 days because on the 1st of December there was no Unit Sent Out reported.

Table 6.3: Operating days in compliance to SO_x AEL Limit - December 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
North	31	0	0	0	0	2 026.0
South	31	0	0	0	0	1 602.0
SUM	62	0	0	0	0	

Comments: Gaseous emissions detected throughout the month

Table 6.4: Operating days in compliance to NO_x AEL Limit - December 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
North	31	0	0	0	0	749.9
South	31	0	0	0	0	812.1
SUM	62	0	0	0	0	

Comments: Gaseous emissions detected throughout the month

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 - December 2021

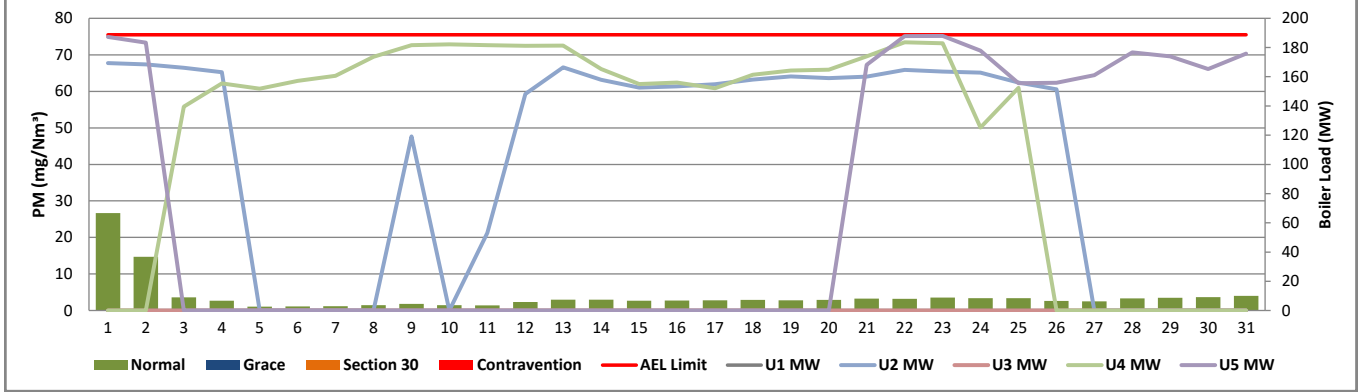


Figure 2: Hendrina South Stack PM Emissions - December 2021

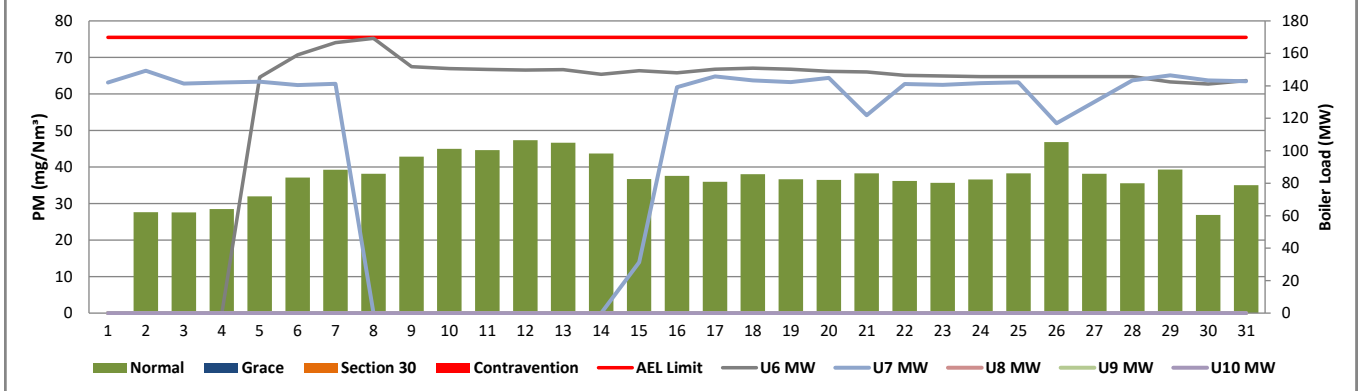


Figure 3: Hendrina North Stack SOx Emissions - December 2021

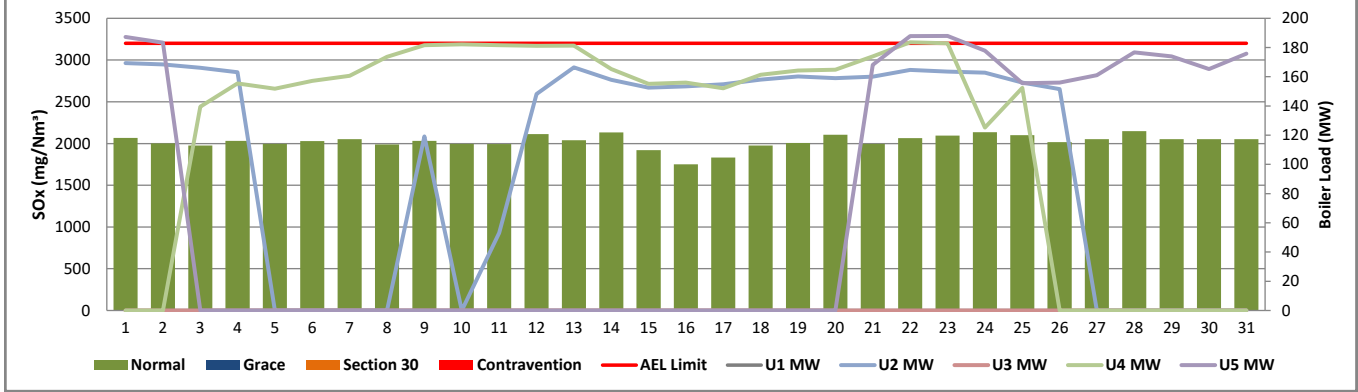


Figure 4: Hendrina South Stack SOx Emissions - December 2021

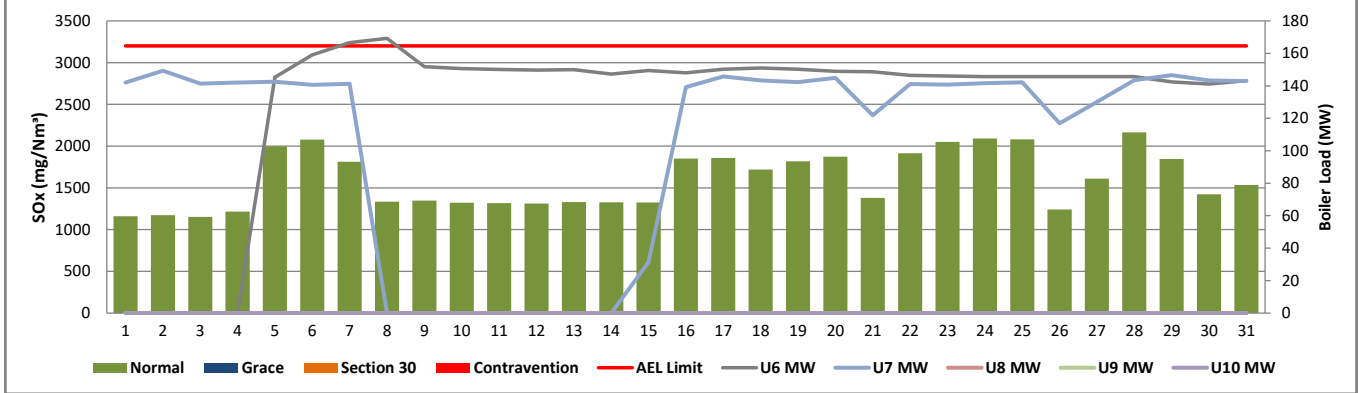


Figure 5: Hendrina North Stack NOx Emissions - December 2021

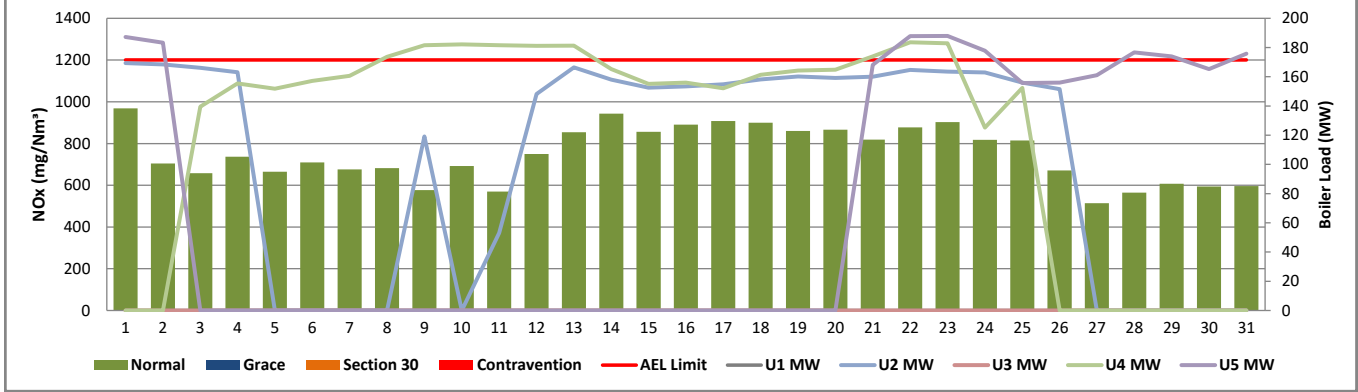
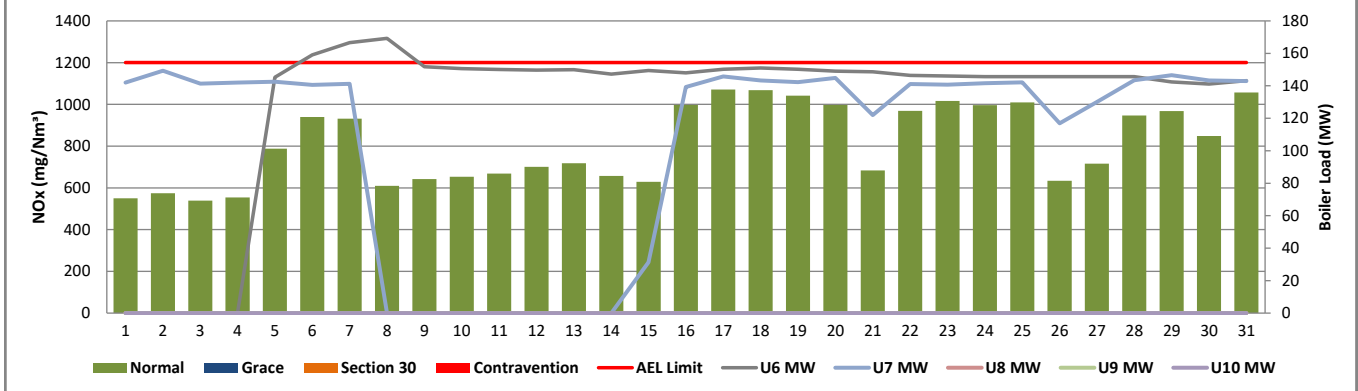


Figure 6: Hendrina South Stack NOx Emissions - December 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	<i>Event 1</i>		<i>Event 2</i>	
Unit No.	<i>Unit 2</i>		<i>Unit 5</i>	
Breaker Open (BO)	<i>5:05 pm</i>	<i>2021/12/04</i>	<i>9:35 am</i>	<i>2021/12/02</i>
Draught Group (DG) Shut Down (SD)	<i>8:55 am</i>	<i>2021/12/05</i>	<i>10:55 pm</i>	<i>2021/12/02</i>
BO to DG SD (duration)	<i>00:15:50</i>	DD:HH:MM	<i>00:13:20</i>	DD:HH:MM
Fires in time	<i>4:30 pm</i>	<i>2021/12/11</i>	<i>2021/12/20</i>	<i>2021/12/20</i>
Synch. to Grid (or BC)	<i>4:30 am</i>	<i>2021/12/12</i>	<i>8:50 am</i>	<i>2021/12/21</i>
Fires in to BC (duration)	<i>00:12:00</i>	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>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM

South Stack	<i>Event 1</i>		<i>Event 2</i>	
Unit No.	<i>Unit 6</i>		<i>Unit 7</i>	
Breaker Open (BO)	<i>04:05am</i>	<i>2021/11/23</i>	<i>8:15 pm</i>	<i>2021/12/07</i>
Draught Group (DG) Shut Down (SD)	<i>08:05am</i>	<i>2021/11/23</i>	<i>8:35 am</i>	<i>2021/12/08</i>
BO to DG SD (duration)		DD:HH:MM	<i>00:12:20</i>	DD:HH:MM
Fires in time	<i>2:10 am</i>	<i>2021/12/05</i>	<i>2021/12/15</i>	<i>2021/12/15</i>
Synch. to Grid (or BC)	<i>7:10 am</i>	<i>2021/12/05</i>	<i>9:10 pm</i>	<i>2021/12/15</i>
Fires in to BC (duration)	<i>00:05:00</i>	DD:HH:MM	<i>00:04:00</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>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of December-2021 in mg/Nm³

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

8 EMERGENCY GENERATION

none

9 COMPLAINTS REGISTER

There was no complaints received

10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

There was no section 30 incident

11 General



19/01/2022

Compiled: Environmental Officer
B. Madiope

Date



19/01/2022

Boiler/ FFP
Marco Cossa

Date

Authorised by: GM
A Van Greuning

Date

Validated by Manager: Boiler or Environmenta Date
R. Goliada J. Ramagoma

Compiled by: Boiler Engineering Department

FFP SE/ Environmental Officer

For: Nkangala District Municipality

Air Qaulity Officer

Copies: Eskom Environmental Management

D Herbst
B Mccourt

Group Technology Engineering

R Rampiar
E. Patel

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