

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 Aug-2021
	Coal	Tons	820 000	307 638.0
	Fuel Oil	Tons	3 200	623
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Aug-2021
	Energy	GWh	1488	513.21
	Ash	Tons	290 000	78 478
	RE PM	kg/MWh	not specified	0.195

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	1.12
Ash Content	%	31 to < 35	25.51

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 Aug-2021
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	Unit Off-line
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.974%
Unit 5	Fabric Filter Plant (FFP)	99.966%
Unit 6	Fabric Filter Plant (FFP)	99.972%
Unit 7	Fabric Filter Plant (FFP)	99.969%
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>100.0</i>	<i>63.7</i>	<i>99.2</i>	<i>61.3</i>	<i>93.7</i>
South	<i>98.1</i>	<i>100.0</i>	<i>100.0</i>	<i>99.9</i>	<i>99.6</i>

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SOx (tons)	NOx (tons)	CO ₂ (tons)
North	8.0	1 058.8	600.5	160 396.4
South	92.3	4 539.8	2 282.2	321 281.1
SUM	100.3	5 598.5	2 882.7	481 677.4

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
North	31	0	0	0	0	9.1
South	31	0	0	0	0	35.4
SUM	62	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm³)
North	31	0	0	0	0	1 230.7
South	31	0	0	0	0	1 684.6
SUM	62	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
North	31	0	0	0	0	667.3
South	31	0	0	0	0	848.2
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 - August 2021

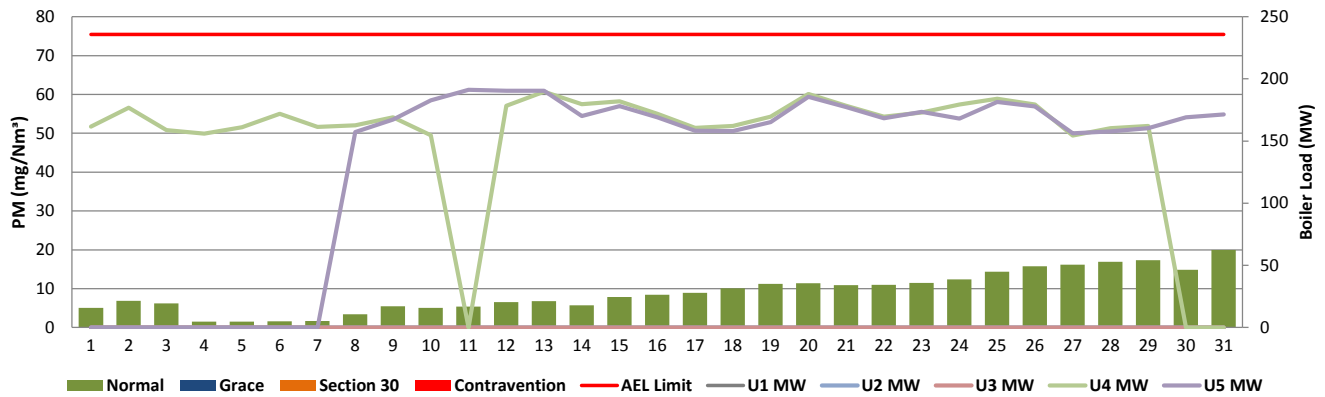


Figure 2: Hendrina South Stack PM Emissions - August 2021

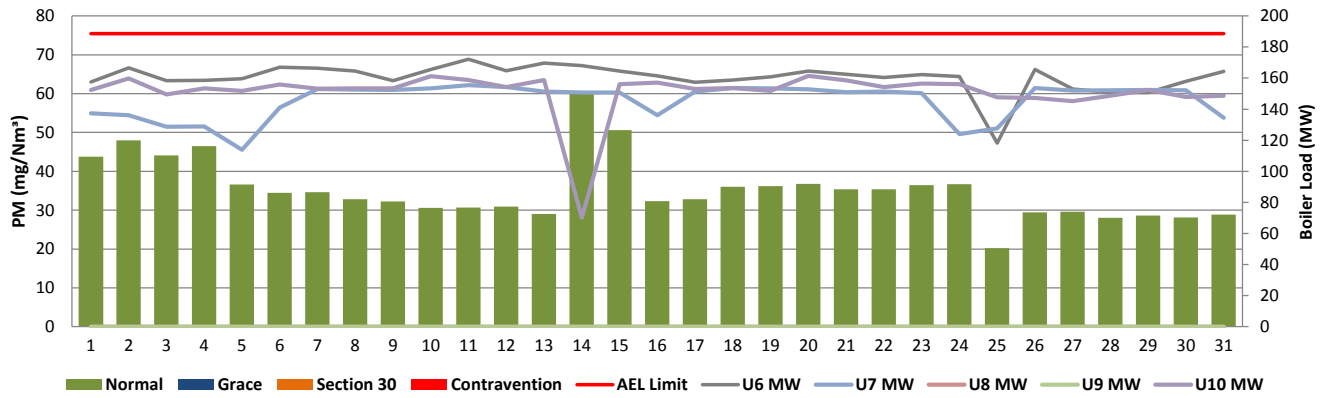


Figure 3: Hendrina North Stack SOx Emissions - August 2021

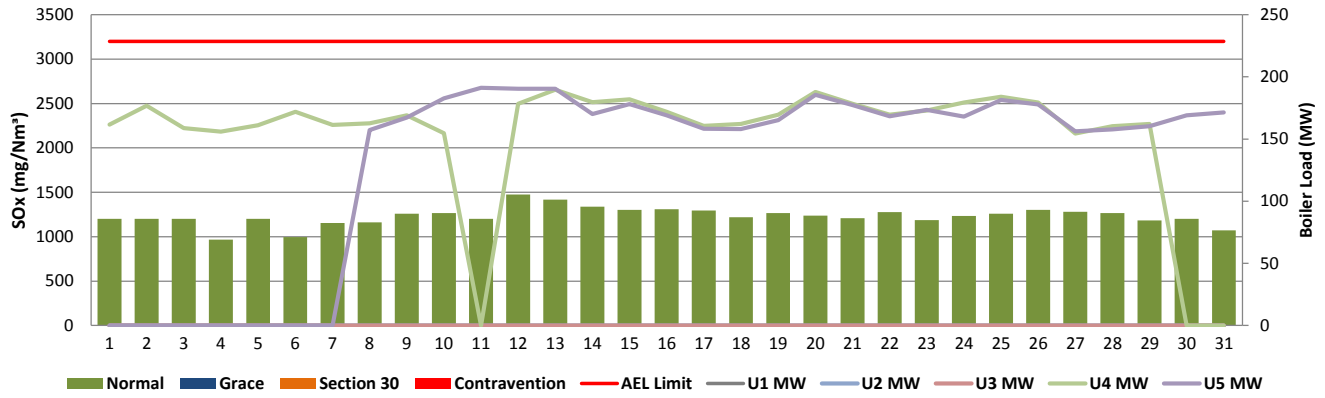


Figure 4: Hendrina South Stack SOx Emissions - August 2021

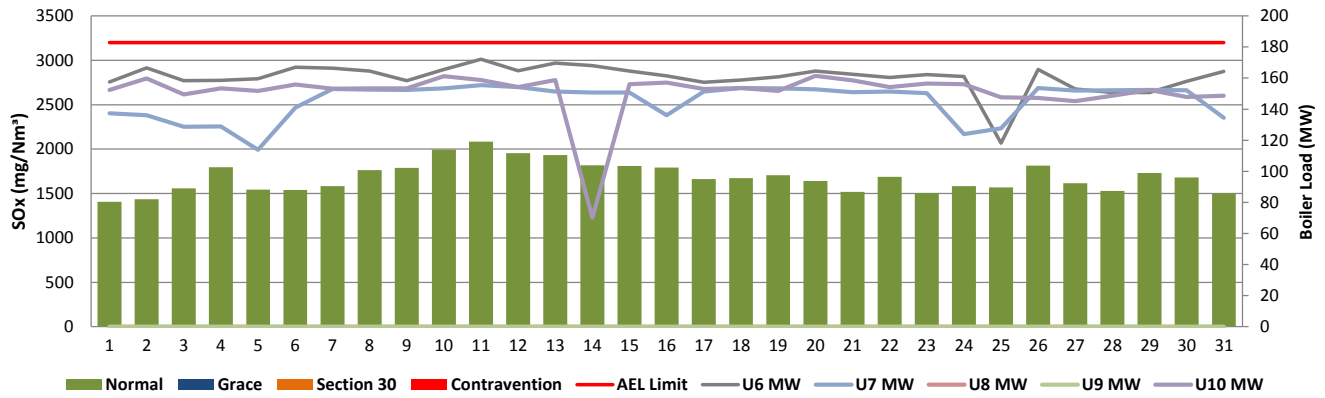


Figure 5: Hendrina North Stack NOx Emissions - August 2021

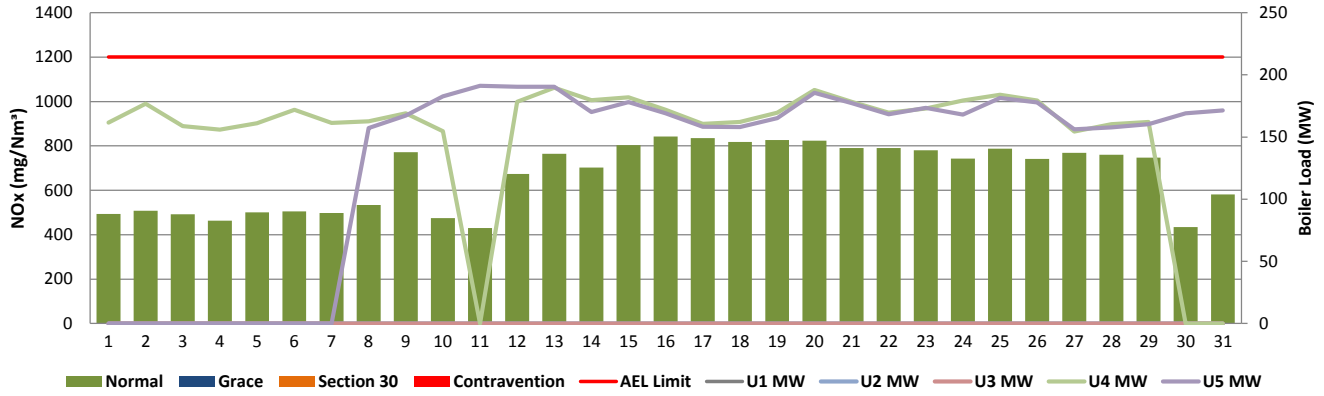
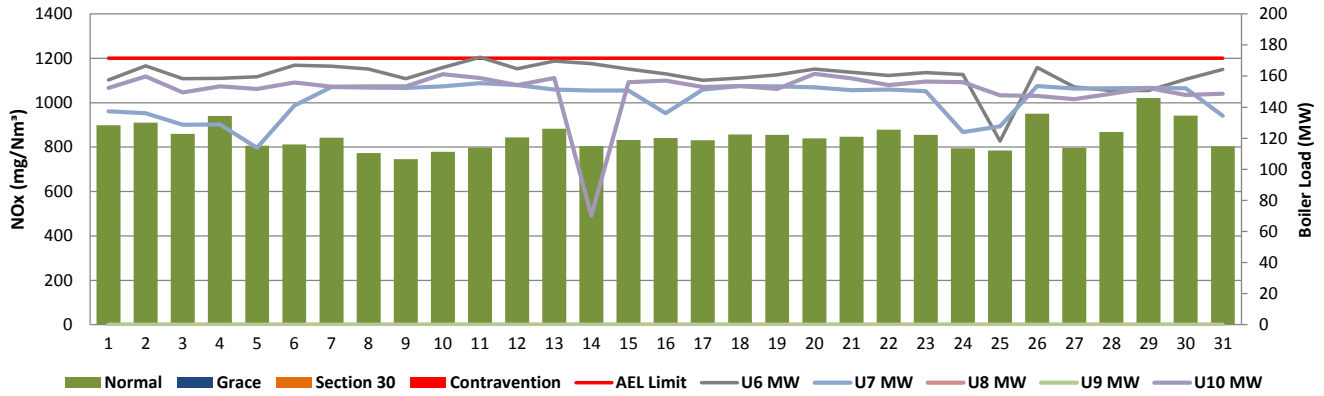


Figure 6: Hendrina South Stack NOx Emissions - August 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>Unit 4</i>		<i>Unit 5</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)	03:15 AM	2021/08/10						
Draught Group (DG) Shut Down (SD)	03:15 AM	2021/08/10						
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	12:40 PM	2021/08/11	2021/08/07	2021/08/07				
Synch. to Grid (or BC)	12:40 AM	2021/08/12	11:20 AM	2021/08/08				
Fires in to BC (duration)	00:12:00	DD:HH:MM	00:12:00	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

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>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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		no event		Unit 10		no event	
Breaker Open (BO)		#REF!			10:55 PM	2021/08/13		
Draught Group (DG) Shut Down (SD)		#REF!			DG did not trip or SD	DG did not trip or SD		
BO to DG SD (duration)	n/a	DD:HH:MM		DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM
Fires in time					14:16:10	2021/08/14		
Synch. to Grid (or BC)					09:10 PM	2021/08/14		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM	00:05:00	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)					not > limit	not > limit		
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM	n/a	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 August-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


No complain received

10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

There was no emission related incident

11 General


22/09/2021

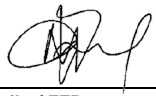
Compiled: Environmental Officer Date
B. Madiope

2021/09/22

Authorised by: GM Date
L. Ndube

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

 Group Technology Engineering

 Hendrina Power Station:


22/09/2021

Boiler/ FFP Date
Marco Cossa

Justice Ramagoma 22/09/2021

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