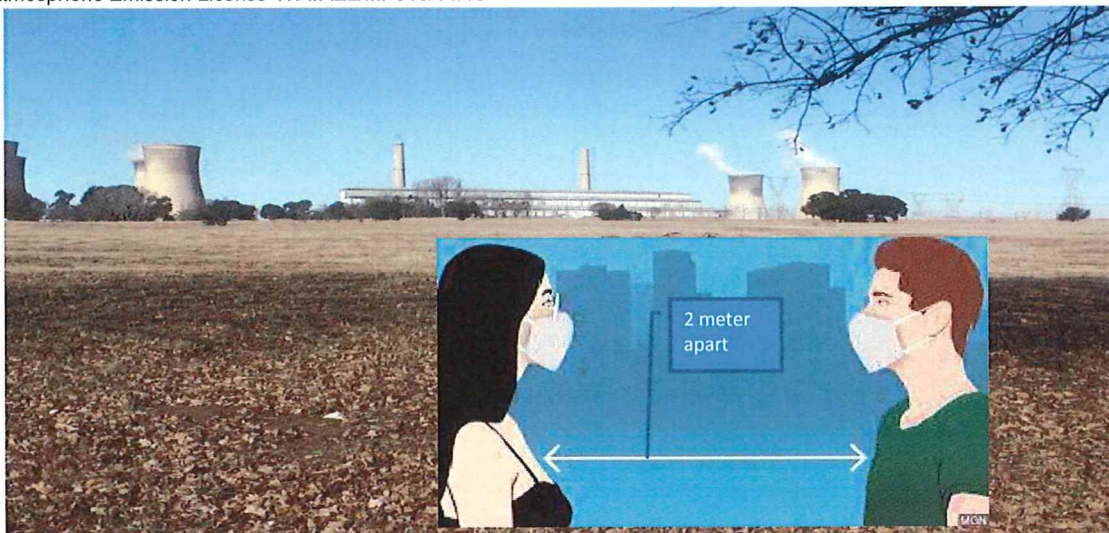


HENDRINA POWER STATION MONTHLY EMISSIONS REPORT

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 Jun-2020
	Coal	Tons	820 000	206 070.0
	Fuel Oil	Tons	3 200	885.24

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jun-2020
	Energy	GWh	1440	334.32
	Ash	Tons	290 000	51 662
	RE PM	kg/MWh	not specified	0.021

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	1.11
Ash Content	%	31 to < 35	25.07

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 Jun-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)	99.986%
Unit 5	Fabric Filter Plant (FFP)	99.986%
Unit 6	Fabric Filter Plant (FFP)	99.955%
Unit 7	Fabric Filter Plant (FFP)	99.972%
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%
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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	81.4	81.1	81.0	77.8
South	98.8	43.8	97.1	44.6

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
North	4.2	1 287.1	509.4
South	2.7	1 510.6	628.0
SUM	7.0	2 797.7	1 137.4

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	24	0	0	0	0	5.9
South	30	0	0	0	0	3.0
SUM	54	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	25	0	0	0	0	1 616.7
South	31	0	0	0	0	1 317.7
SUM	56	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	25	0	0	0	0	631.3
South	31	0	0	0	0	510.2
SUM	56	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 - June 2020

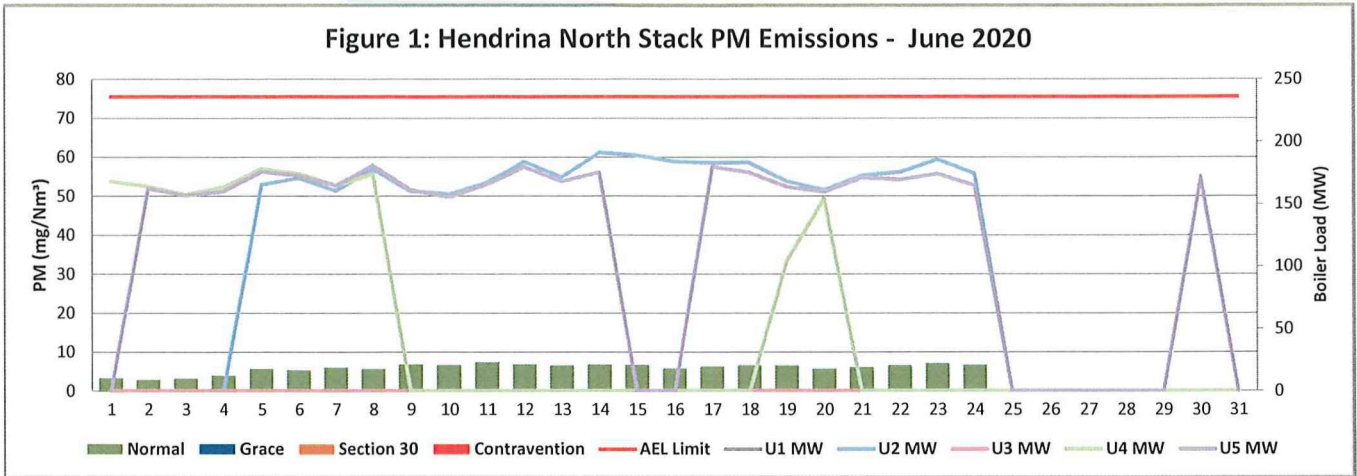


Figure 2: Hendrina South Stack PM Emissions - June 2020

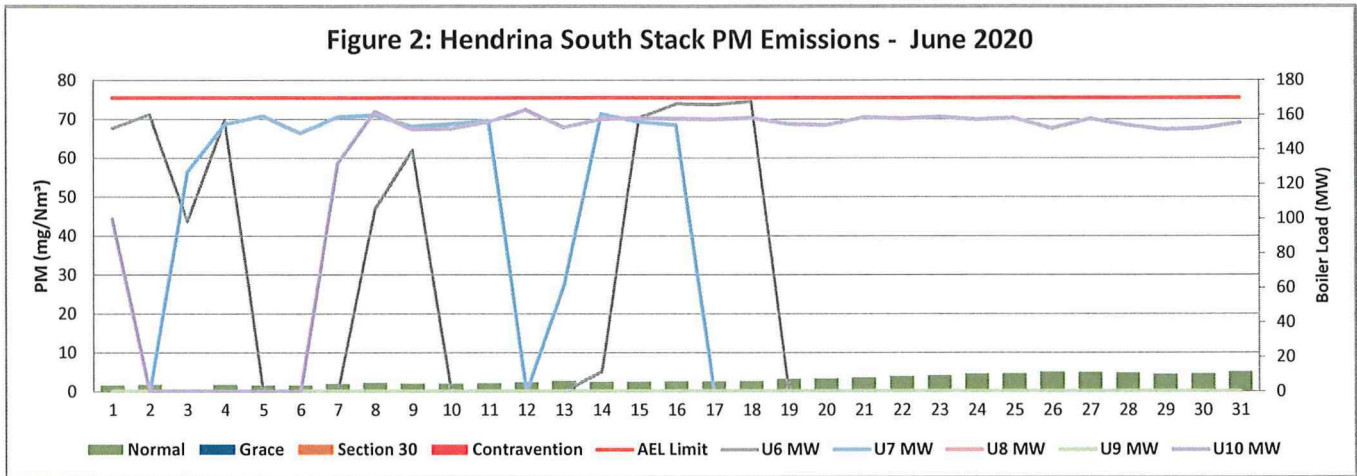


Figure 3: Hendrina North Stack SOx Emissions - June 2020

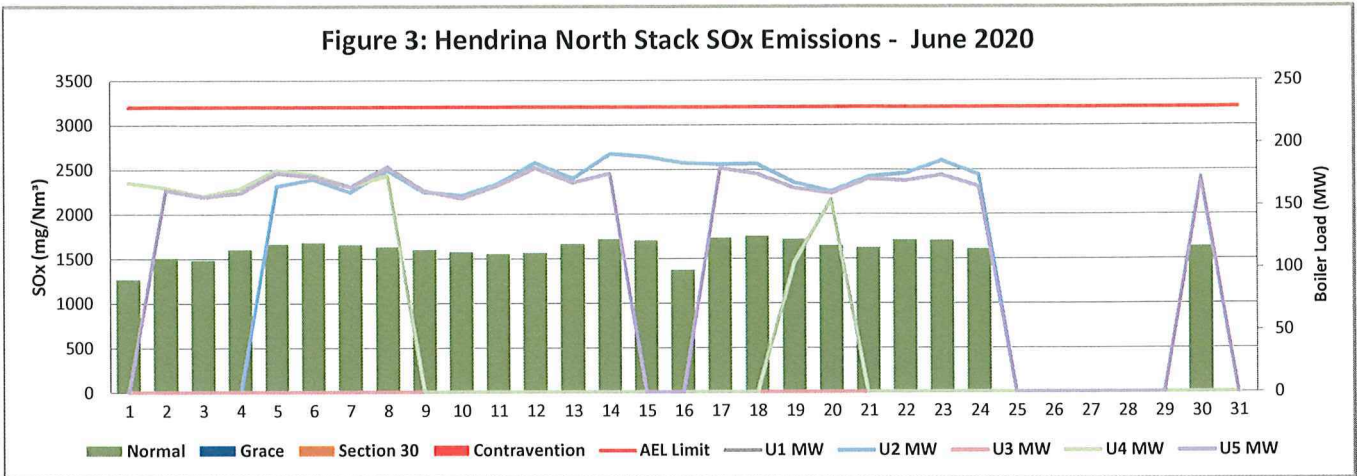


Figure 4: Hendrina South Stack SOx Emissions - June 2020

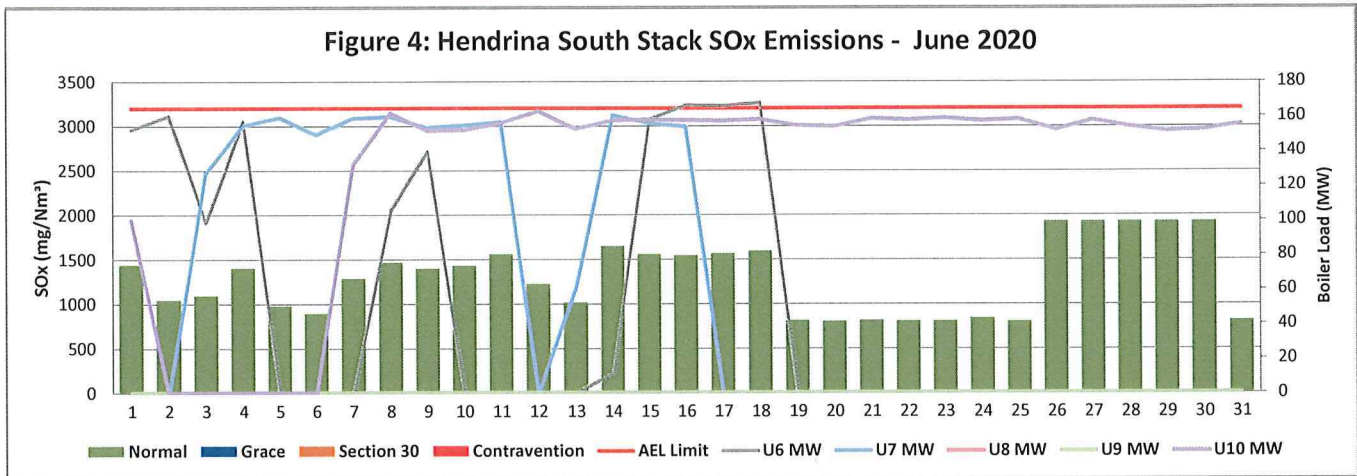


Figure 5: Hendrina North Stack NOx Emissions - June 2020

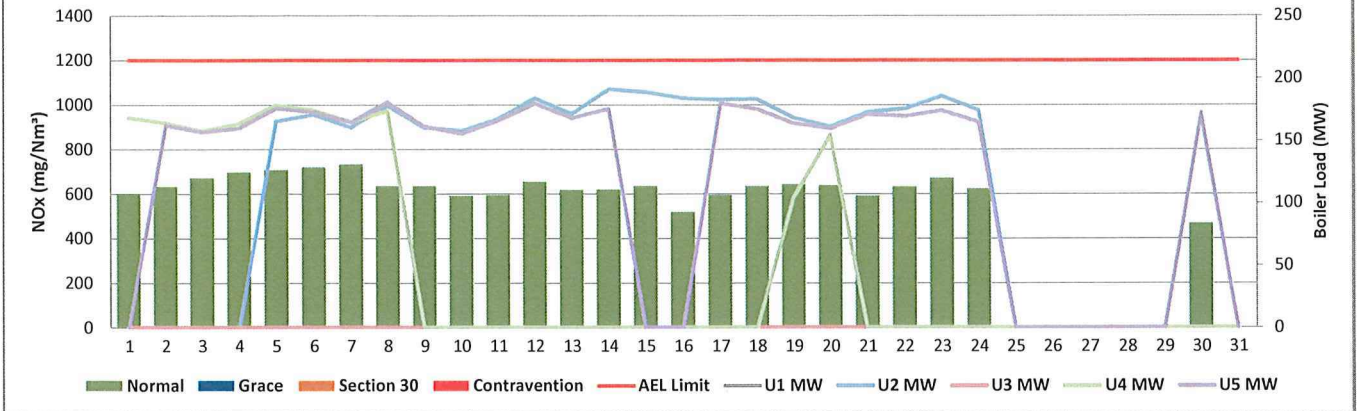
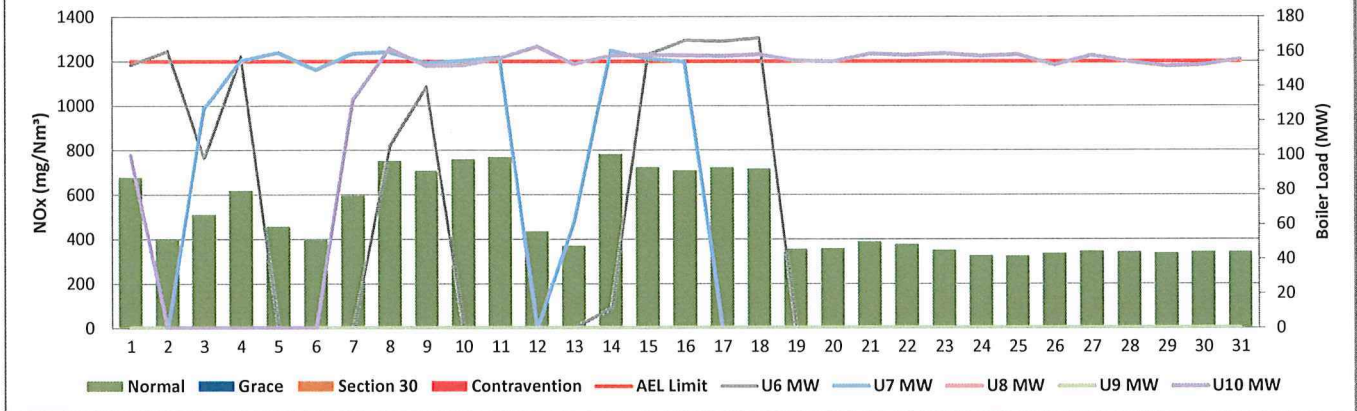


Figure 6: Hendrina South Stack NOx Emissions - June 2020



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of June-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>no event</i>		<i>no event</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>10:25 AM</i>	<i>2020/06/08</i>	<i>07:35 PM</i>	<i>2020/06/24</i>		
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>08:55 PM</i>	<i>2020/06/08</i>	<i>07:35 PM</i>	<i>2020/06/24</i>		
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:10:30</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	<i>12:30 PM</i>	<i>2020/06/04</i>						
Synch. to Grid (or BC)	<i>12:30 AM</i>	<i>2020/06/05</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

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	<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>Unit 10</i>	
Breaker Open (BO)		<i>#REF!</i>	<i>02:35 PM</i>	<i>2020/06/16</i>			<i>11:05 PM</i>	<i>2020/06/01</i>
Draught Group (DG) Shut Down (SD)		<i>#REF!</i>	<i>02:35 PM</i>	<i>2020/06/16</i>			<i>08:05 AM</i>	<i>2020/06/02</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM	<i>00:09:00</i>	DD:HH:MM
Fires in time							<i>2020/06/07</i>	<i>2020/06/07</i>
Synch. to Grid (or BC)							<i>10:30 AM</i>	<i>2020/06/07</i>
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM	<i>00:05:00</i>	DD:HH:MM
Emissions below limit from BC (end date)							<i>not > limit</i>	<i>not > limit</i>
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM	<i>n/a</i>	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 June-2020 in mg/Nm³



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


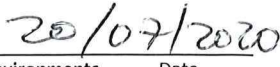
Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

Between the 25 to 29 June all boiler units on North Stack were offload, an no emissions reported

Ben  20/07/20
 Compiled: Environmental Officer Date
 B. Madiope  20/07/2020
 Authorised by: GM Date
 M. Lesolang

 20/07/2020
 Boiler FFP Date
 Marco Cossa
 J. Ramagoma  20/07/2020
 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 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