

**Ms Mpho Nembilwi**  
 Nkangala District Municipality  
 PO BOX 437  
 MIDDLEBURG  
 1050

Date:  
 19 February 2020

Enquiries:

Ref: 17/4/AEL/MP312/11/09

Dear Ms Nembilwi

**KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF JANUARY 2020**

This serves as the monthly report required in terms of Section 7.2.1 in Kriel Power Station's Atmospheric Emission License 17/4/AEL/MP312/11/09. The emissions are for the month of January 2020. Verified emissions of particulates matter, SO<sub>2</sub> and NO<sub>x</sub> (as NO<sub>2</sub>) are also included.

**Raw Materials and Products**

**Table 1:** Quantity of Raw Materials and Products used/produced for the month of January 2020

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate in Month of January 2020
	Coal	Tons/month	1 227 600	626 888
	Fuel Oil	Tons/month	5 000	5995.6
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of January 2020
	Ash	Tons/month	not specified	536.6
	RE PM	kg/MWh	not specified	0.56

1/...

**Abatement Technology**

**Table 2:** Abatement Equipment Control Technology for January 2020

Associated Unit/Stack	Technology Type	Actual Efficiency (%)
		January 2020
Unit 1	ESP	100%
Unit 2	ESP	93.3%
Unit 3	ESP	98.3%
Unit 4	ESP	99.4%
Unit 5	ESP	95.0%
Unit 6	ESP	96.3%

**Energy Source Characteristics**

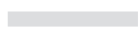


**Table 3:** Energy Source Material Characteristics for the month of January 2020

Characteristic	Stipulated Range (Unit)	Monthly Average Content
CV Content	18-24 (MJ/kg)	
Sulphur Content	0.6-1.2 (%)	0.80
Ash Content	27-32 (%)	24.11

**Monthly Monitor Reliability**

Associated Unit/Stack	PM (%)	SOx (%)	NOx (%)
North	70.1%	0% (Monitor Defected)	0%(Monitor Defected)
South	97.3%	0%(Monitor Defected)	0%(Monitor Defected)

**Emissions Reporting**

GRAPH LEGEND	
	Final daily emissions average in mg/Nm3 released within a particular day
	Final monthly emissions average in mg/Nm3 released within the whole month
	Emissions limit as per the AEL

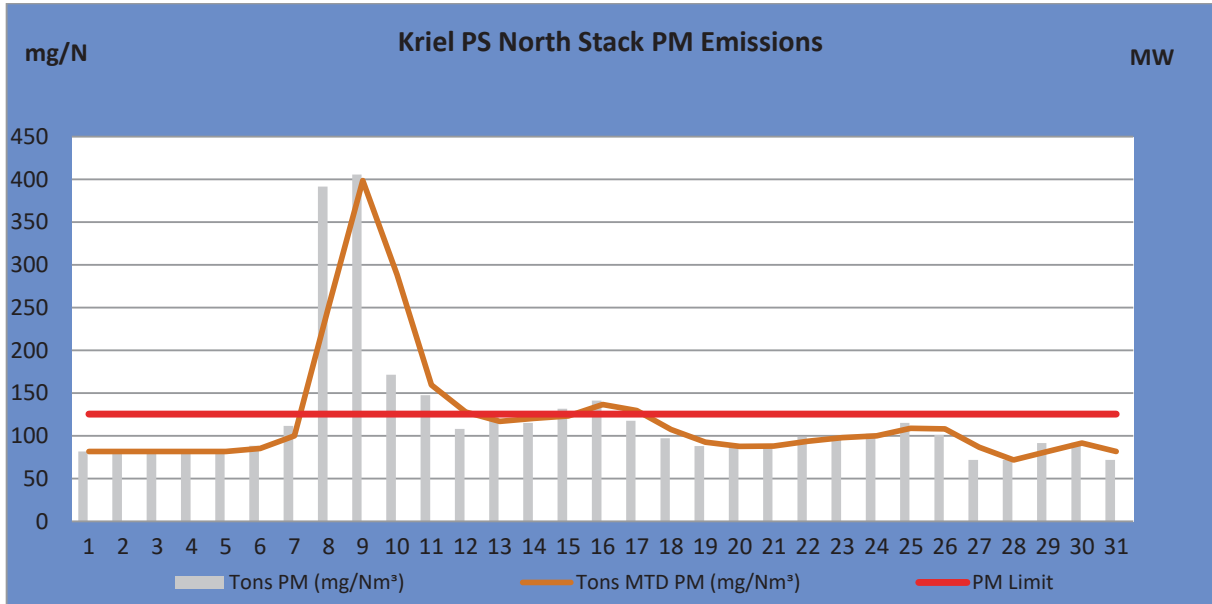


Figure 1: PM emissions (daily averages) for the month of January 2020 against emission limit for the North Stack

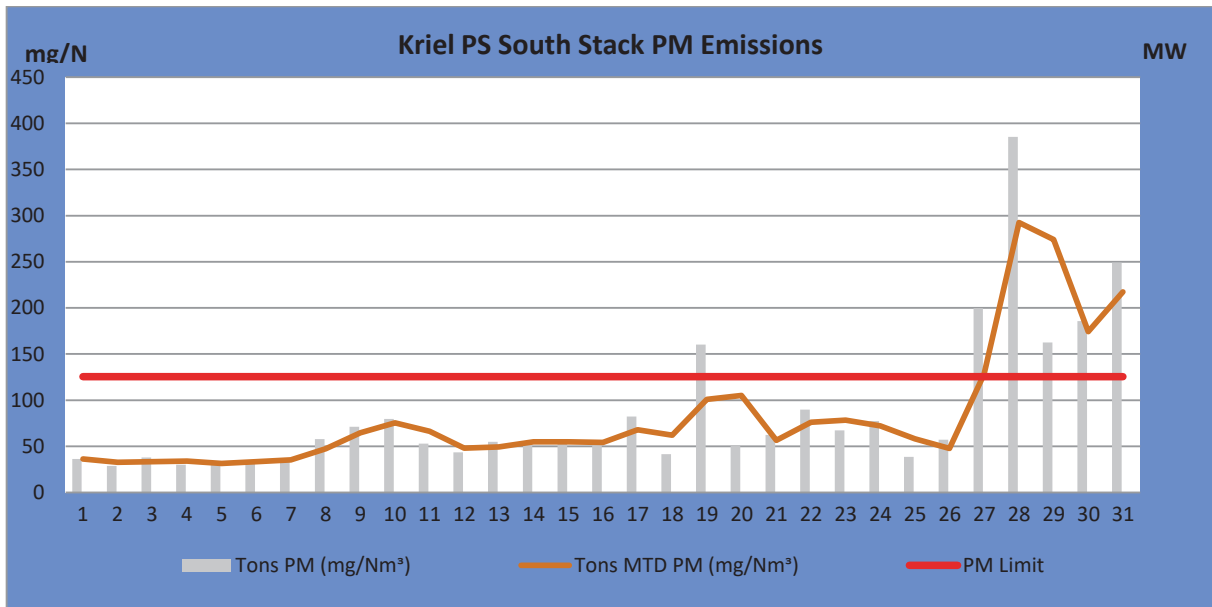


Figure 2: PM emissions (daily averages) for the month of January 2020 against emission limit for the South Stack

### North and South Stack Monitors

Gas Monitors were defective and therefore Unavailable from the 1<sup>st</sup> January to the 31<sup>st</sup> of January 2020. The OEM was on Site and defect on the North Stack were fixed, outstanding Defect are on the South Stack

**Table 4:** Monthly tonnages for the month January 2020

Unit	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)	CO <sub>2</sub> (tons)
1	115.5	1 492.9	861.1	
2	85.3	1 141.7	664.8	
3	81.2	1 037.2	588.7	
4	71.3	2 466.3	1 112.4	
5	33.9	1 834.7	849.7	
6	67.2	2 365.4	1 038.2	
SUM	454.4	10 338.2	5 114.9	

Unit	Operating Days (DD:HH:MM)			
	Normal operation	In grace period	Under S 30	Unit off load
1	31:00:00	00:00:00	00:00:00	00:00:00
2	25:20:55	00:00:00	00:00:00	05:03:05
3	22:10:05	00:00:00	00:00:00	08:13:55
4	22:08:00	00:00:00	00:00:00	08:16:00
5	16:12:20	00:00:00	00:00:00	14:11:40
6	24:08:40	00:00:00	00:00:00	06:15:20

**Light up information**

**Table 6:** PM Start-up information for the month of January 2020

North Stack	Event 2		Unit 3		Event 4	
Unit No.	Unit 2		Unit 3		Unit 3	
Fires in	12:10 PM	2020/01/01	6:35 PM	2020/09/24	2:15 PM	2020/01/06
Synchronisation with Grid	7:10 AM	2020/01/03	2:25 AM	2020/09/25	7:15 PM	2020/01/06
Emissions below limit from Sync (Date and Time)						
Fires in to synchronization	01:19:00		00:07:50		00:05:00	
Synchronization to < limit (Duration	did not go above limit		did not go above limit		did not go above limit	

<b>North Stack</b>	<b>Event 5</b>		<b>Event 6</b>		<b>Event 7</b>	
<b>Unit No.</b>	<b>Unit 3</b>		<b>Unit 2</b>		<b>Unit 3</b>	
<b>Fires in</b>	7:45 PM	2020/01/12	8:20 PM	2020/01/20	4:40 AM	2020/01/23
<b>Synchronisation with Grid</b>	9:55 AM	2020/01/13			5:40 PM	2020/01/23
<b>Emissions below limit from Sync (Date and Time)</b>						
<b>Fires in to synchronization</b>	00:14:10				00:13:00	
<b>Synchronization to &lt; limit (Duration)</b>	did not go above limit		did not go above limit		did not go above limit	

<b>South Stack</b>	<b>Event 1</b>		<b>Event 3</b>		<b>Event 4</b>		<b>Event 5</b>	
<b>Unit No.</b>	<b>Unit 4</b>		<b>Unit 5</b>		<b>Unit 5</b>		<b>Unit 6</b>	
<b>Fires in</b>	3:45 PM	2020/01/04	1:00 AM	2020/01/06	10:30 AM	2020/01/15	11:00 PM	2020/01/12
<b>Synchronisation with Grid</b>	11:40 PM	2020/01/04	8:35 AM	2020/01/06	3:30 PM	2020/01/15	9:25 PM	2020/01/14
<b>Emissions below limit from Sync</b>								
<b>Fires in to synchronization</b>	00:07:55		00:07:35		00:05:00		01:22:25	
<b>Synchronization to &lt; limit</b>	did not go above limit	Hrs	did not go above limit		did not go above limit		did not go above limit	

Table 7. Point Source emissions released during start-up (fires-in) for the month of January 2020 in mg/Nm<sup>3</sup>

North Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 2	2020/01/01	12:10 PM	2020/01/03	7:10 AM	380.6	1213.4	632.4
Unit 3	2020/01/04	3:20 AM	2020/01/05	9:35 AM	498.2	1474.7	741.0
Unit 3	2020/01/06	2:15 PM	2020/01/06	7:15 PM	374.1	1273.5	642.4
Unit 3	2020/01/12	7:45 PM	2020/01/13	9:55 AM	208.0	1189.1	586.8
Unit 2	2020/01/20	8:20 PM	2020/01/21	6:05 AM		954.9	502.5
Unit 3	2020/01/23	4:40 AM	2020/01/23	5:40 PM	269.9	1847.6	1227.8

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 4	2020/01/04	3:45 PM	2020/01/04	11:40 PM	400.8		
Unit 5	2020/01/06	1:00 AM	2020/01/06	8:35 AM	222.6		
Unit 5	2020/01/15	10:30 AM	2020/01/15	3:30 PM	233.3		
Unit 6	2020/01/12	11:00 PM	2020/01/14	9:25 PM	297.4		

Table 8. Point Source emissions released during Shut-down (SD) for the month of January 2020 in mg/Nm<sup>3</sup>

North Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 3	2020/01/06	8:35 AM	2020/01/06	9:25 AM	328.1	1513.2	710.8
Unit 2	2020/01/17	10:20 AM	2020/01/17	11:35 PM	156.4	996.8	560.8
Unit 3	2020/01/19	2:30 PM	2020/01/20	12:25 PM	125.2	849.8	445.9

South Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 4	2020/01/14	9:40 AM	2020/01/14	10:40 AM	167.4		
Unit 5	2020/01/14	1:30 AM	2020/01/14	2:00 AM	252.3		
Unit 6	2020/01/07	7:05 AM	2020/01/07	9:35 PM	120.0		
Unit 6	2020/01/11	6:05 PM	2020/01/11	7:50 PM	94.6		

### Complaints Register

**Table 9:** Complaints for the month of January 2020

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
There was no complaint related to air quality received during the month of January 2020					

General

The particulate matter emissions on the North Stack was within the Limit however South Common Stack was above the limit during the month of December 2019.

Online Gaseous Emissions Monitor (for NO<sub>x</sub> and SO<sub>x</sub>) were unavailable on the North and South Stack

NB: The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission reports sent to your office.