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 Nkangala District Municipality
 PO BOX 437
 MIDDLEBURG
 1050

Date:
 19 February 2019

Enquiries:

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

Dear Ms Nembilwi

KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF NOVEMBER 2019

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 November 2019. Verified emissions of particulates matter, SO₂ and NO_x (as NO₂) are also included.

Raw Materials and Products

Table 1: Quantity of Raw Materials and Products used/produced for the month of November 2019

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate in Month of November 2019
	Coal	Tons/month	1 227 600	784 943
	Fuel Oil	Tons/month	5 000	4067.66
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of November 2019
	Ash	Tons/month	not specified	917.8
	RE PM	kg/MWh	not specified	0.73

1/...

Abatement Technology

Table 2: Abatement Equipment Control Technology for November 2019

Associated Unit/Stack	Technology Type	Actual Efficiency (%)
		November 2019
Unit 1	ESP	100%
Unit 2	ESP	96.7%
Unit 3	ESP	95.0%
Unit 4	ESP	96.3%
Unit 5	ESP	93.1%
Unit 6	ESP	92.5%

Energy Source Characteristics

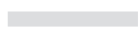


Table 3: Energy Source Material Characteristics for the month of November 2019

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	98.4%	0% (Monitor Defected)	0%(Monitor Defected)
South	97.5%	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

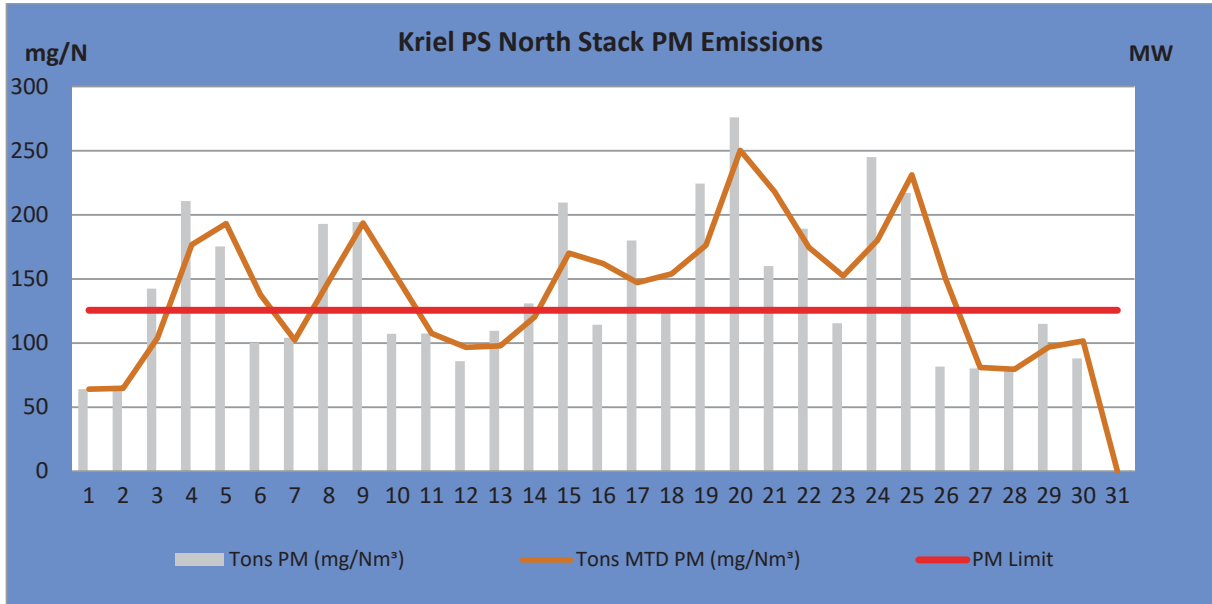


Figure 1: PM emissions (daily averages) for the month of November 2019 against emission limit for the North Stack

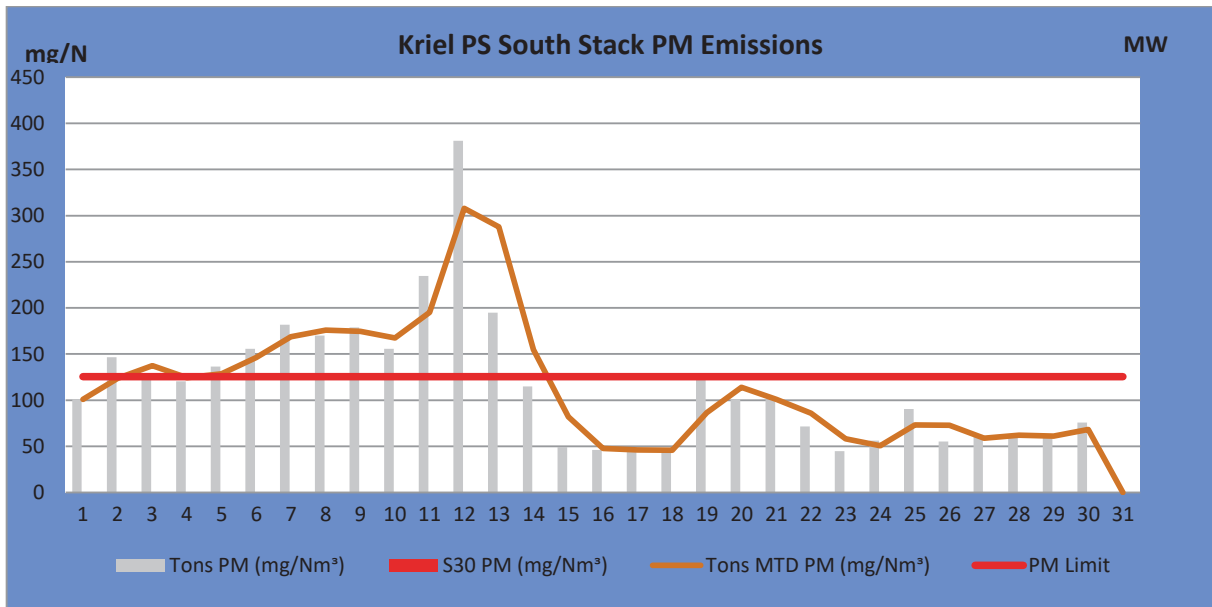


Figure 2: PM emissions (daily averages) for the month of November 2019 against emission limit for the South Stack

North and South Stack Monitors

Gas Monitors were defective and therefore Unavailable from the 1st November to the 30th of November 2019. 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 November 2019

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)	CO ₂ (tons)
1	125.7	1 224.9	686.7	
2	145.6	1 441.9	809.1	
3	173.7	4 613.7	4 304.4	
4	151.0	3 809.7	3 463.7	
5	157.7	4 246.7	3 874.1	
6	917.8	16 943.4	14 038.3	
SUM	125.7	1 224.9	686.7	

Unit	Operating Days (DD:HH:MM)			
	Normal operation	In grace period	Under S 30	Unit off load
1	30:00:00	00:00:00	00:00:00	00:00:00
2	30:00:00	00:00:00	00:00:00	00:00:00
3	28:14:45	00:00:00	00:00:00	01:09:15
4	26:00:30	00:00:00	00:00:00	03:23:30
5	24:13:45	00:00:00	00:00:00	05:10:15
6	26:15:30	00:00:00	00:00:00	03:08:30

Light up information

Table 6: PM Start-up information for the month of November 2019

North Stack	Event 2		Event 3	
Unit No.	Unit 3		Unit 3	
Fires in	6:20 PM	2019/11/01	6:50 AM	2019/11/10
Synchronisation with Grid	1:40 AM	2019/11/02	2:15 PM	2019/11/10
Emissions below limit from Sync (Date and Time)				
Fires in to synchronization	00:07:20		00:07:25	
Synchronization to < limit (Duration)	did not go above limit		did not go above limit	

North Stack	Event 5		Event 6		Event 7	
Unit No.	Unit 3		Unit 2		Unit 3	
Fires in	7:45 PM	2019/01/12	8:20 PM	2019/01/20	4:40 AM	2019/01/23
Synchronisation with Grid	9:55 AM	2019/01/13			5:40 PM	2019/01/23
Emissions below limit from Sync (Date and Time)						
Fires in to synchronization	00:14:10				00:13:00	
Synchronization to < limit (Duration)	did not go above limit		did not go above limit		did not go above limit	

South Stack	Event 2		Event 3		Event 4		Event 5	
Unit No.	Unit 4		Unit 5		Unit 6		Unit 5	
Fires in	12:00 PM	2019/11/17	9:50 PM	2019/11/26	6:10 AM	2019/11/20	12:10 PM	2019/11/28
Synchronisation with Grid	12:55 AM	2019/11/18	3:55 PM	2019/11/27	2:10 PM	2019/11/20	4:35 PM	2019/11/29
Emissions below limit from Sync								
Fires in to synchronization	00:12:55		00:18:05		00:08:00		01:04:25	
Synchronization to < limit	did not go above limit		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 November 2019 in mg/Nm³

North Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO ₂	NO _x
Unit 3	2019/11/01	6:20 PM	2019/11/02	1:40 AM	294.6	1135.4	643.8
Unit 3	2019/11/10	6:50 AM	2019/11/10	2:15 PM	251.8	1120.4	580.2

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO ₂	NO _x
Unit 4	2019/11/17	12:00 PM	2019/11/18	12:55 AM	232.1	1805.0	829.3
Unit 5	2019/11/26	9:50 PM	2019/11/27	3:55 PM	204.3	2869.9	1776.2
Unit 6	2019/11/20	6:10 AM	2019/11/20	2:10 PM	147.6	2560.1	1727.8
Unit 5	2019/11/28	12:10 PM	2019/11/29	4:35 PM	132.0	3096.3	2240.8

Table 8. Point Source emissions released during Shut-down (SD) for the month of November 2019 in mg/Nm³

North Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)						
Unit	Breaker Open		DG SD	PM	SO ₂	NO _x
No event						

South Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO ₂	NO _x
Unit 4	2019/11/14	12:55 AM	2019/11/14	12:35 PM	122.3	1622.7	768.4
Unit 5	2019/11/24	12:45 AM	2019/11/24	4:15 PM	103.0	1973.1	1088.2
Unit 6	2019/11/16	10:50 AM	2019/11/18	8:25 AM	187.1	2249.8	1194.1

Complaints Register

Table 9: Complaints for the month of November 2019

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 November 2019					

General

The particulate matter emissions on the North and South Stack were within the limit during the month of November 2019

The monthly gaseous emissions (NO_x & SO_x) were also within the limit for South Stack and online gaseous emissions monitor were unavailable on the North 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.