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

Dear Ms Nembilwi

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

This serves as the monthly report required in terms of Section 7.4 in Kriel Power Station's Atmospheric Emission License 17/4/AEL/MP312/11/09. The emissions are for the month of May 2020. 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 May 2020

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption / Rate (Quantity)	Consumption / Rate in Month of May 2020
	Coal	Tons/month	1 227 600	585 184
	Fuel Oil	Tons/month	5 000	7 400.17
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of May 2020
	Ash	Tons/month	not specified	437.1
	RE PM	kg/MWh	not specified	0.31

1/...

Abatement Technology

Table 2: Abatement Equipment Control Technology for May 2020.

Associated Unit/Stack	Technology Type	Actual Efficiency (%)
		May 2020
Unit 1	ESP	100.0
Unit 2	ESP	98.3
Unit 3	ESP	100.0
Unit 4	ESP	93.8
Unit 5	ESP	94.4
Unit 6	ESP	89.4

Energy Source Characteristics




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

Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6-1.2 (%)	0.96
Ash Content	21-36 (%)	20.39

Monthly Monitor Reliability

Associated Unit/Stack	PM (%)	SO _x (%)	NO _x (%)
North	96%	98.5%	98.5%
South	96.6	96.6%	96.6%

Emissions Reporting

GRAPH LEGEND	
	Final daily emissions average in mg/Nm ³ released within a particular day
	Final monthly emissions average in mg/Nm ³ released within the whole month
	Emissions limit as per the AEL

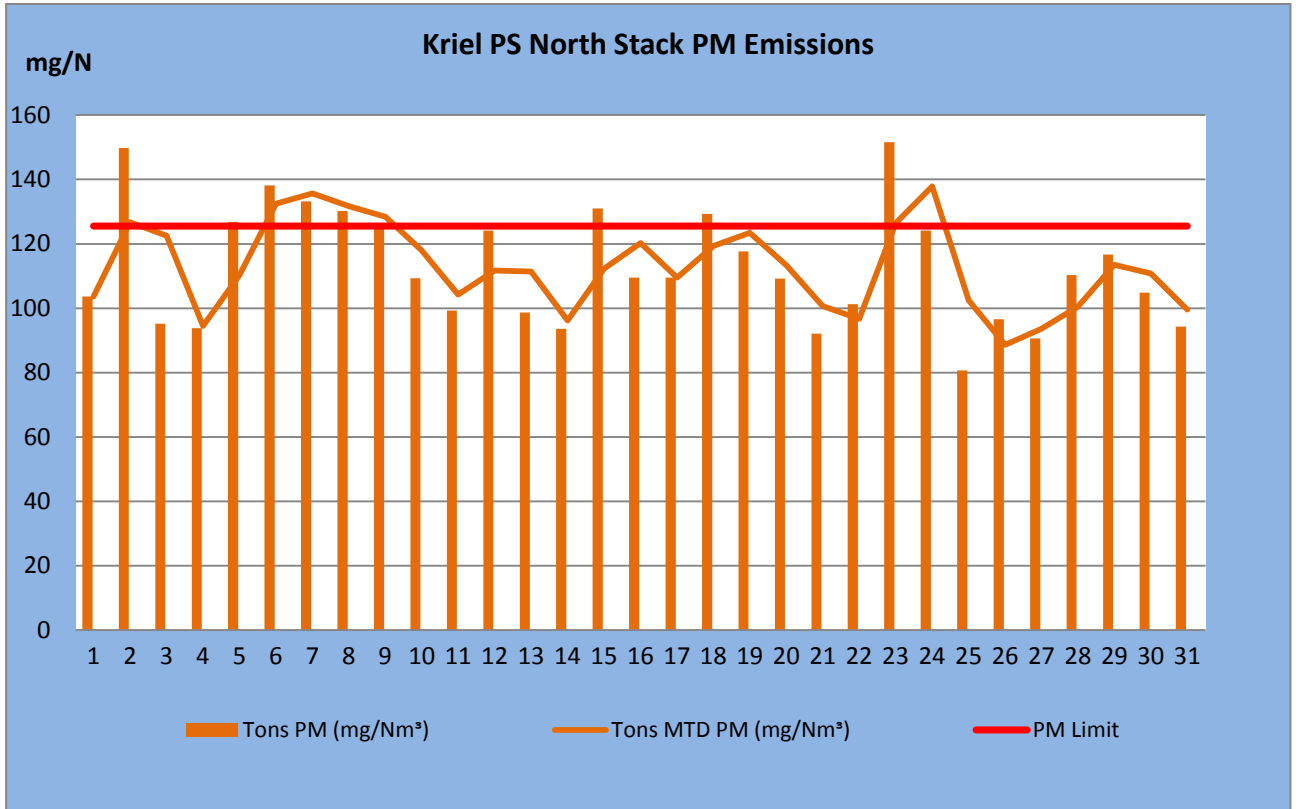


Figure 1: PM emissions (daily averages) for the month of May 2020 against emission limit for the North Stack

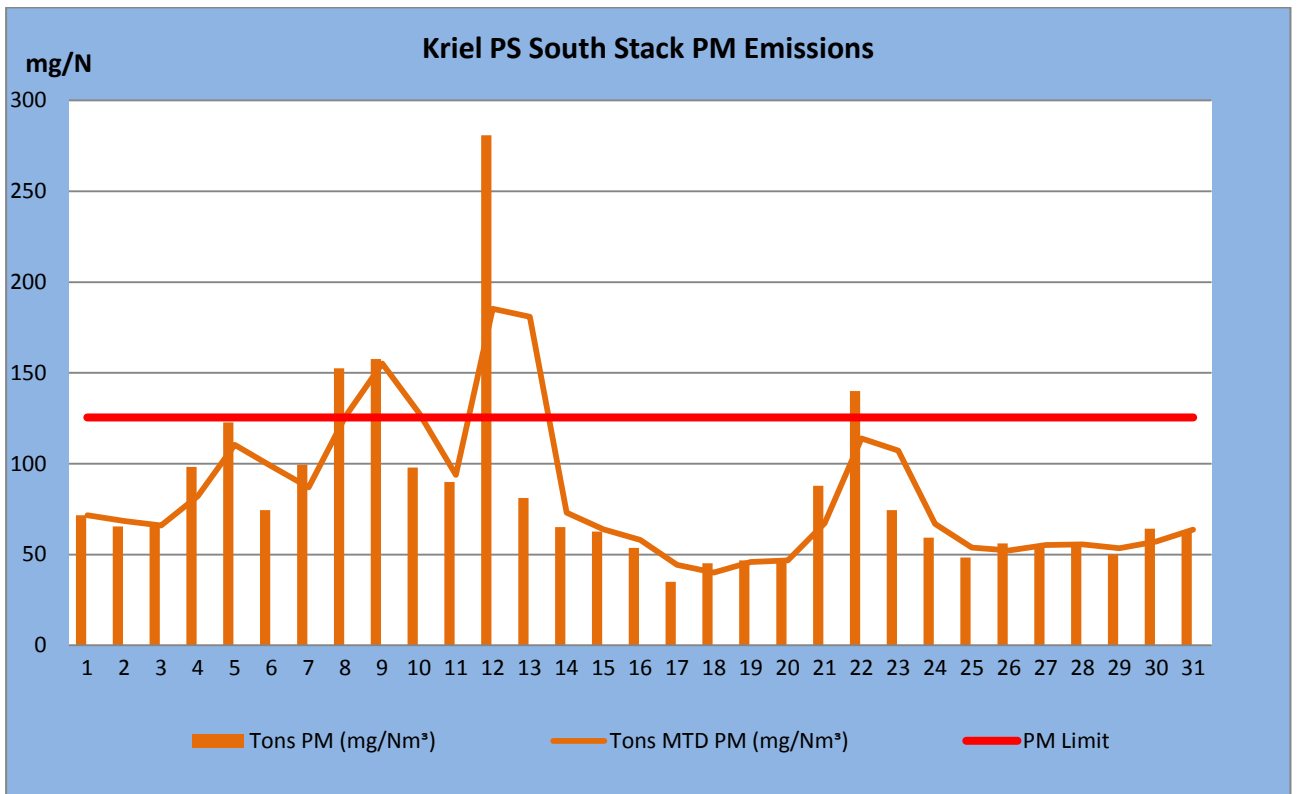


Figure 2: PM emissions (daily averages) for the month of May 2020 against emission limit for the South Stack

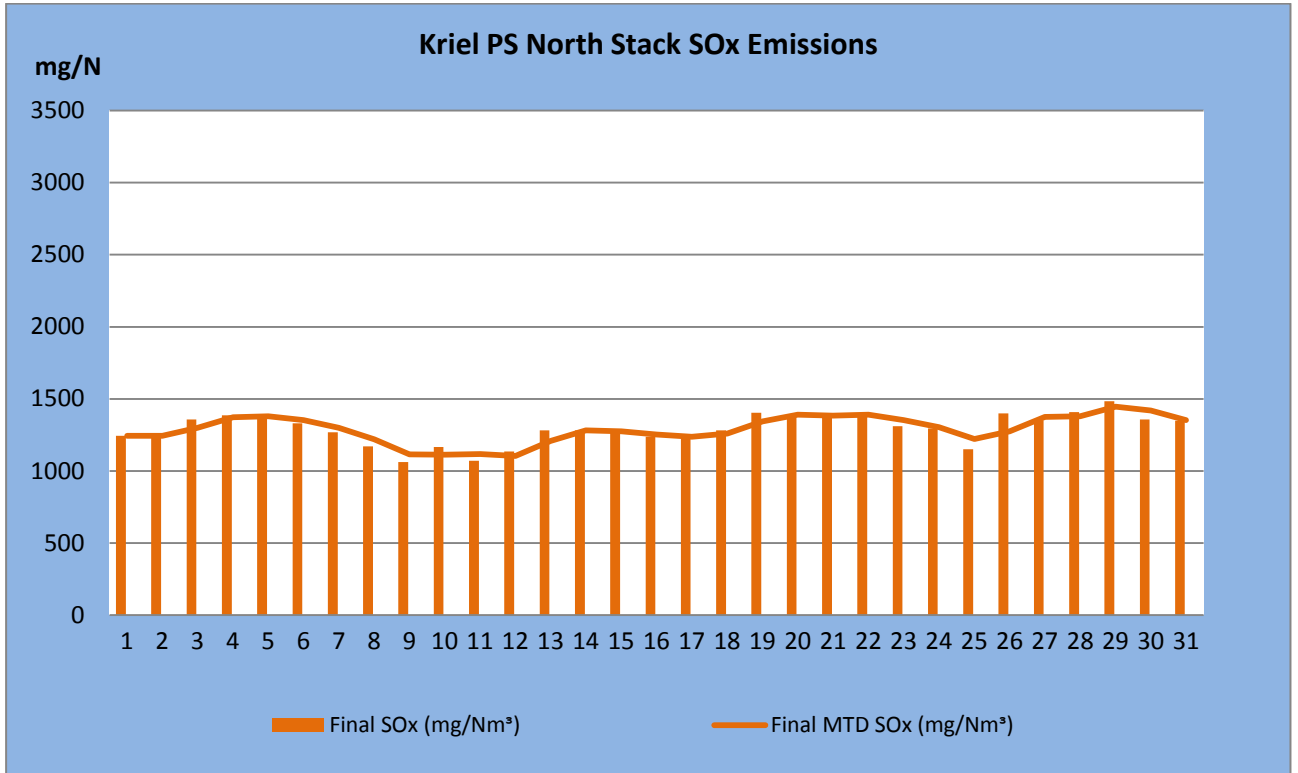


Figure 3. SO₂ emissions (daily averages) for the month of May 2020 against emission limit for the North Stack. The SO_x Limit is 3500mg/Nm³.

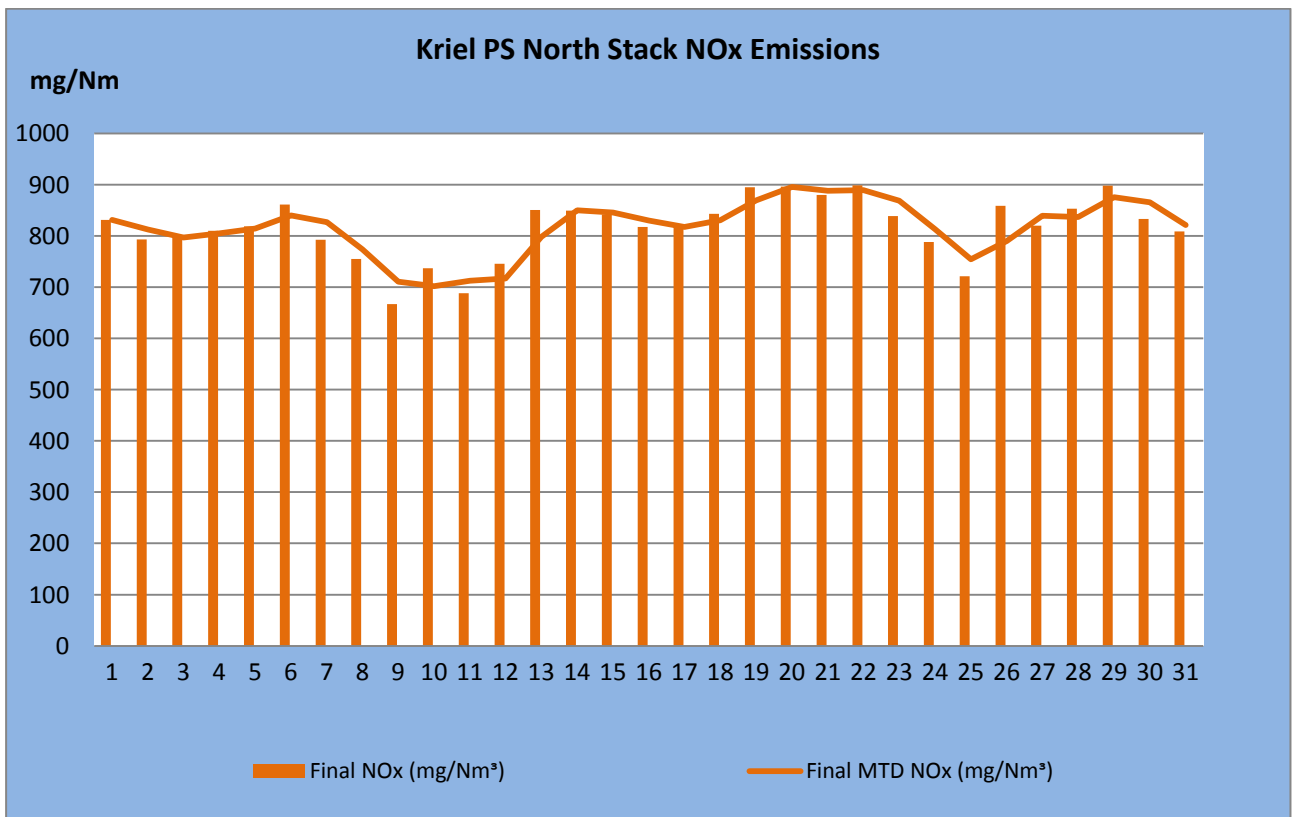


Figure 4. NO₂ emissions (daily averages) for the month of May 2020 against emission limit for the North Stack. The NO_x Limit is 1600mg/Nm³.

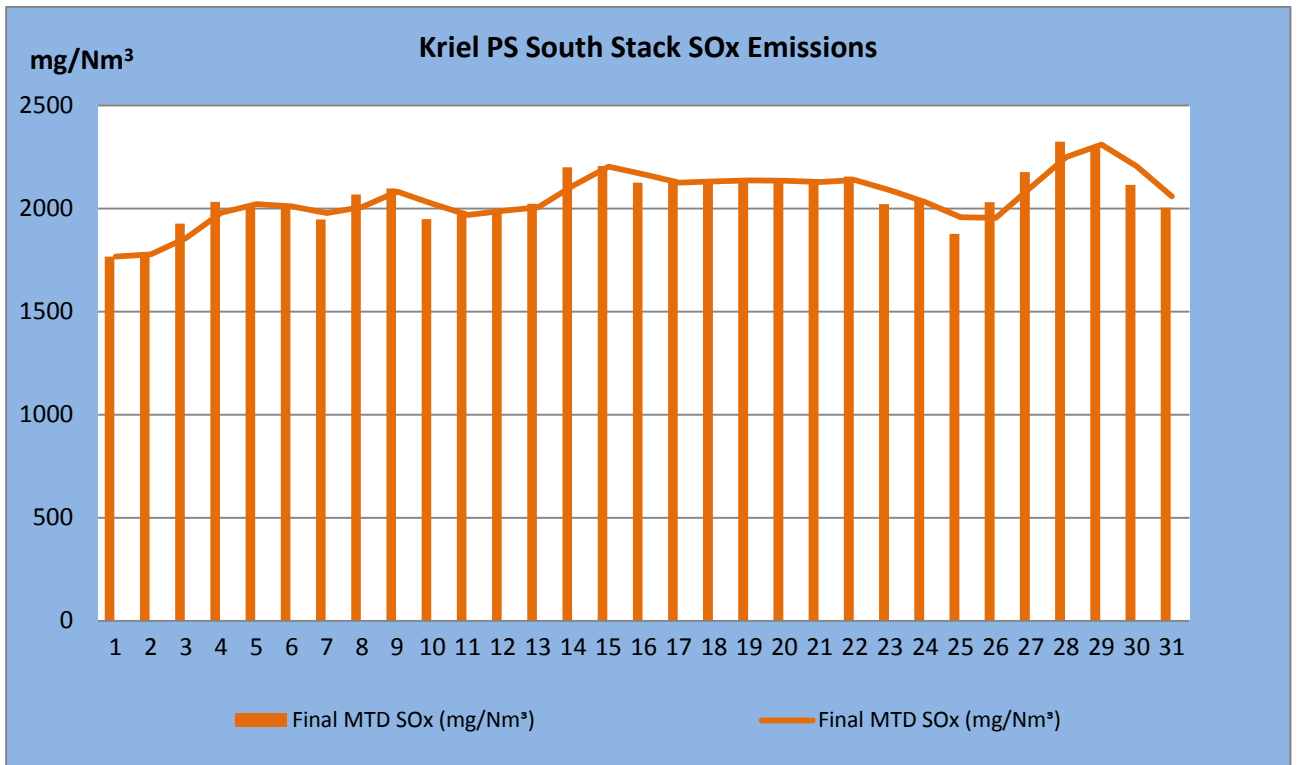


Figure 5. SO₂ emissions (daily averages) for the month of May 2020 against emission limit for the South Stack. The SO_x Limit is 3500mg/Nm³.

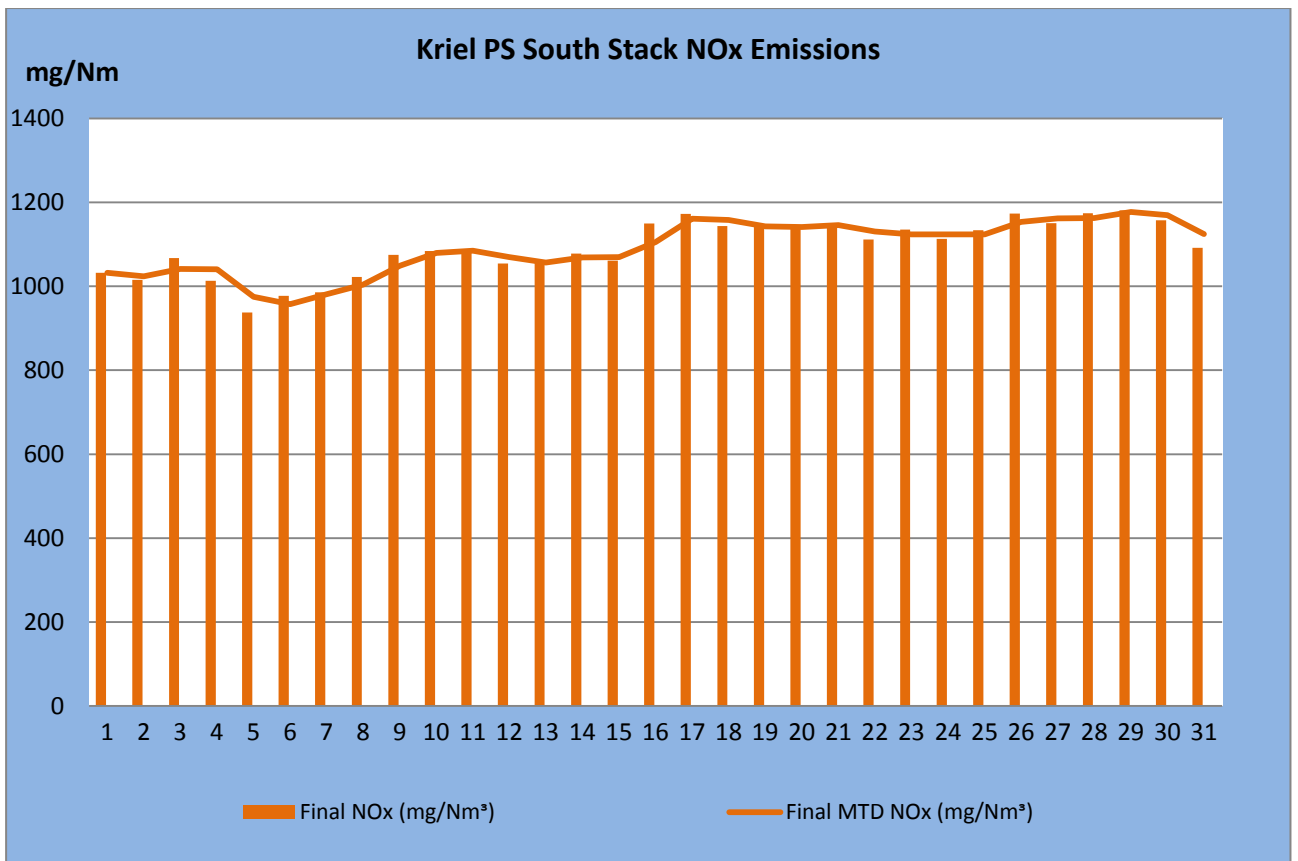


Figure 6. NO₂ emissions (daily averages) for the month of May 2020 against emission limit for the South Stack. The NO_x Limit is 1600mg/Nm³.

Table 4: Monthly tonnages for the month May 2020

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
SUM	437.1	7 930.6	4 505.6

Table 5: Each unit and respective days operating under normal operation and section 30 days respectively

Unit	Operating Days (DD:HH:MM)		
	Normal operation	Under S 30	Unit off load
1	23:19:05	00:00:00	07:04:55
2	23:16:20	00:00:00	07:07:40
3	26:11:25	00:00:00	04:12:35
4	31:00:00	00:00:00	00:00:00
5	17:12:50	00:00:00	13:11:10
6	25:07:10	00:00:00	05:16:50

Light up information

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

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 2		Unit 1		Unit 2		Unit 1	
Fires in	8:15 AM	2020/05/1 1	9:15 AM	2020/05/1 5	9:15 AM	2020/05/1 7	6:15 AM	2020/05/2 7
Synchronisation with Grid	4:50 PM	2020/05/1 1	7:35 PM	2020/05/1 7	2:00 PM	2020/05/1 7	9:50 AM	2020/05/2 7
Emissions below limit from Sync (Date and Time)								
Fires in to synchronization	00:08:35	Hrs (dd:hh:mm)	02:10:20	Hrs (dd:hh:mm)	00:04:45	Hrs (dd:hh:mm)	00:03:35	Hrs (dd:hh:mm)
Synchronization to < limit (Duration)	did not go above limit	Hrs (dd:hh:mm)	did not go above limit	Hrs (dd:hh:mm)	did not go above limit	Hrs (dd:hh:mm)	did not go above limit	Hrs (dd:hh:mm)

North Stack ...cont.	Event 5	
Unit No.	Unit 3	
Fires in	8:25 AM	2020/05/31
Synchronisation with Grid	3:00 AM	2020/06/01
Emissions below limit from Sync		
Fires in to synchronization	00:18:35	Hrs (dd:hh:mm)
Synchronization to < limit	did not go above limit	Hrs (dd:hh:mm)

South Stack	Event 1		Event 2		Event 4	
Unit No.	Unit 5		Unit 5		Unit 6	
Fires in	3:55 PM	2020/05/10	1:40 AM	2020/05/18	11:15 AM	2020/05/20
Synchronisation with Grid	1:10 AM	2020/05/11	12:30 PM	2020/05/19	7:05 PM	2020/05/20
Emissions below limit from Sync						
Fires in to synchronization	00:09:15	Hrs (dd:hh:mm)	01:10:50	Hrs (dd:hh:mm)	00:07:50	Hrs (dd:hh:mm)
Synchronization to < limit	did not go above limit	Hrs (dd:hh:mm)	did not go above limit	Hrs (dd:hh:mm)	did not go above limit	Hrs (dd:hh:mm)

Table 7. Point Source emissions released during start-up (fires-in) for the month of May-2020 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 2	2020/05/11	8:15 AM	2020/05/11	4:50 PM	340.4	656.0	460.0
Unit 1	2020/05/15	9:15 AM	2020/05/17	7:35 PM	277.4	865.5	551.7
Unit 2	2020/05/17	9:15 AM	2020/05/17	2:00 PM	687.5	650.0	403.3
Unit 1	2020/05/27	6:15 AM	2020/05/27	9:50 AM	98.0	817.2	451.3
Unit 3	2020/05/31	8:25 AM	2020/06/01	3:00 AM	233.1	1153.8	659.0

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO ₂	NO _x
Unit 5	2020/05/10	3:55 PM	2020/05/11	1:10 AM	412.8	1387.8	799.4
Unit 5	2020/05/18	1:40 AM	2020/05/19	12:30 PM	353.7	2099.3	1009.0
Unit 6	2020/05/20	11:15 AM	2020/05/20	7:05 PM	379.0	1875.6	1015.6

Table 8. Point Source emissions released during Shut-down (SD) for the month of May-2020 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
Unit 1	2020/05/10	12:45 PM	2020/05/11	1:05 AM	135.6	585.6	377.2
Unit 2	2020/05/15	2:20 AM	2020/05/15	3:10 PM	133.9	596.9	386.5
Unit 2	2020/05/29	11:45 PM	2020/05/30	11:05 AM	172.0	775.4	464.5
Unit 3	2020/05/27	11:25 AM	2020/05/27	11:30 AM	120.1	989.8	560.4

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 5	2020/05/15	7:45 PM	2020/05/16	8:05 AM	73.0	1285.9	644.8
Unit 6	2020/05/15	2:20 AM	2020/05/15	7:15 PM	119.7	1551.4	699.3

Complaints Register

Table 9: Complaints for the month of May 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 May 2020.					

General

The particulate matter (PM10) emissions on the north and south common stacks were within the **monthly limit** during the month of May 2020; North stack recorded the monthly PM10 average emissions figure of **112.63mg/Nm3** while south stack recorded PM10 monthly average figure of **82.81mg/Nm3**. The gaseous (NOx & SOx) emissions on the north and south common stacks were also within the **daily limit** during the month of May 2020; refer to graphs above.

Fuel oil design consumption rate of 5000 tons/month was exceeded during the month of May 2020 due to a number of units' light-ups and Milling plant challenges. This matter has been reported to the licencing authority for prior approval.

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

Kriel Power Station's List of NEMA Section 30 Incidents for 2020/2021 Financial Year

Month	Description of Section30 Incidents - including the reference number	Root Cause (s)	Status of S30 Incident with DEFF (open or closed)	Remarks
April - 2020	No section 30 incident reported.			No event to report.
May - 2020	No section 30 incident reported.			No event to report.
June - 2020				
July - 2020				
Aug - 2020				
Sep - 2020				
Oct - 2020				
Nov - 2020				
Dec - 2020				
Jan - 2021				
Feb - 2021				
Mar - 2021				