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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 AUGUST 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 August 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 August 2020

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption / Rate (Quantity)	Consumption / Rate in Month of August 2020
	Coal	Tons/month	1 227 600	534 480.00
	Fuel Oil	Tons/month	5 000	2 176.92
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of August 2020
	Ash	Tons/month	not specified	509.8
	RE PM	kg/MWh	not specified	0.49

1/...

Abatement Technology

Table 2: Abatement Equipment Control Technology for August 2020.

Associated Unit/Stack	Technology Type	Actual Efficiency (%)
		August 2020
Unit 1	ESP	99.72%
Unit 2	ESP	96.71%
Unit 3	ESP	Outage
Unit 4	ESP	99.41%
Unit 5	ESP	99.45%
Unit 6	ESP	Outage

Energy Source Characteristics

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




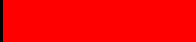
Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6-1.2 (%)	0.86
Ash Content	21-36 (%)	23.97

Monthly Monitor Reliability

Associated Unit/Stack	PM (%)	SOx (%)	NOx (%)
North	99.46%	100%	100%
South	88.38%	99.46%	99.33%

Emissions Reporting

Graph 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

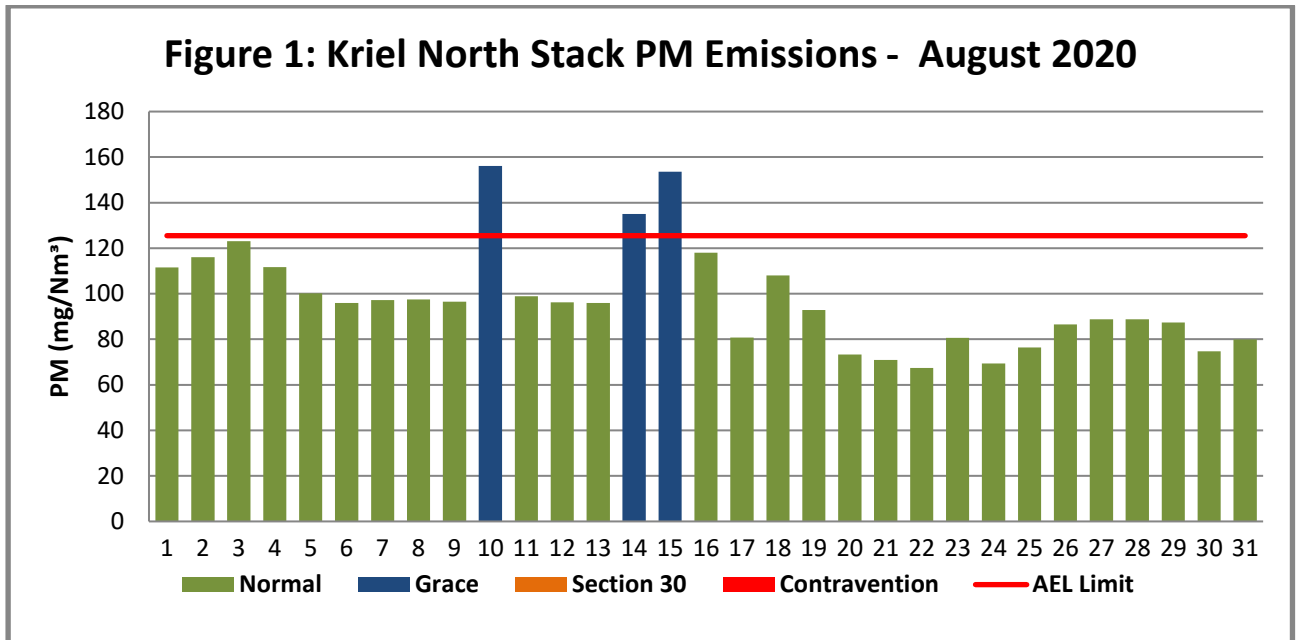


Figure 1: PM emissions (daily averages) for the month of August 2020 against emission limit for the North Stack; monthly average 97.72 mg/Nm³

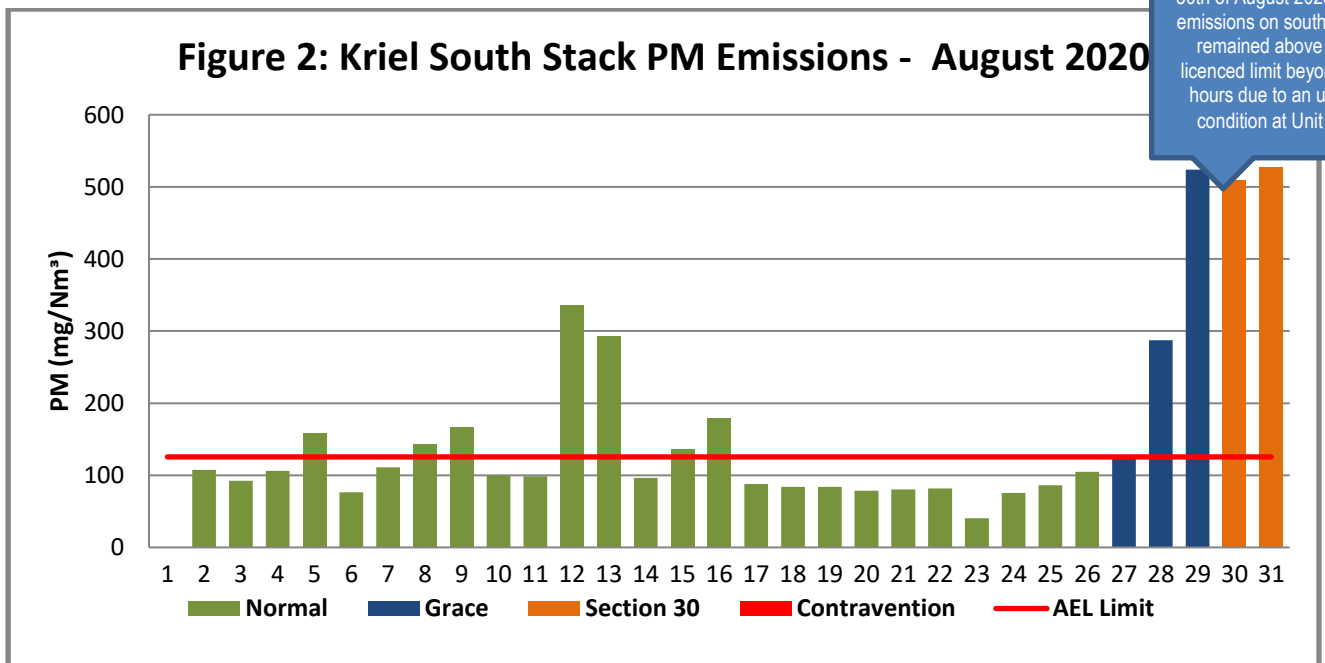


Figure 2: PM emissions (daily averages) for the month of August 2020 against emission limit for the South Stack; monthly average 164.30 mg/Nm³

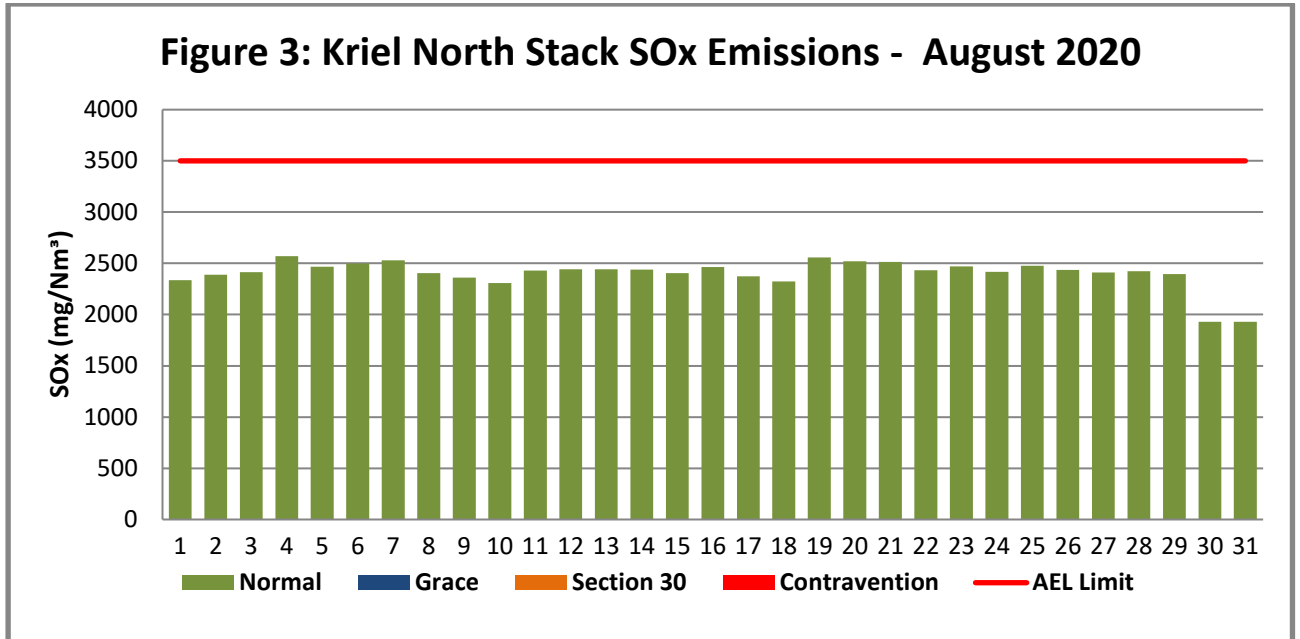


Figure 3. SO₂ emissions (daily averages) for the month of August 2020 against emission limit for the North Stack. The SO_x Limit is 3500mg/Nm³.

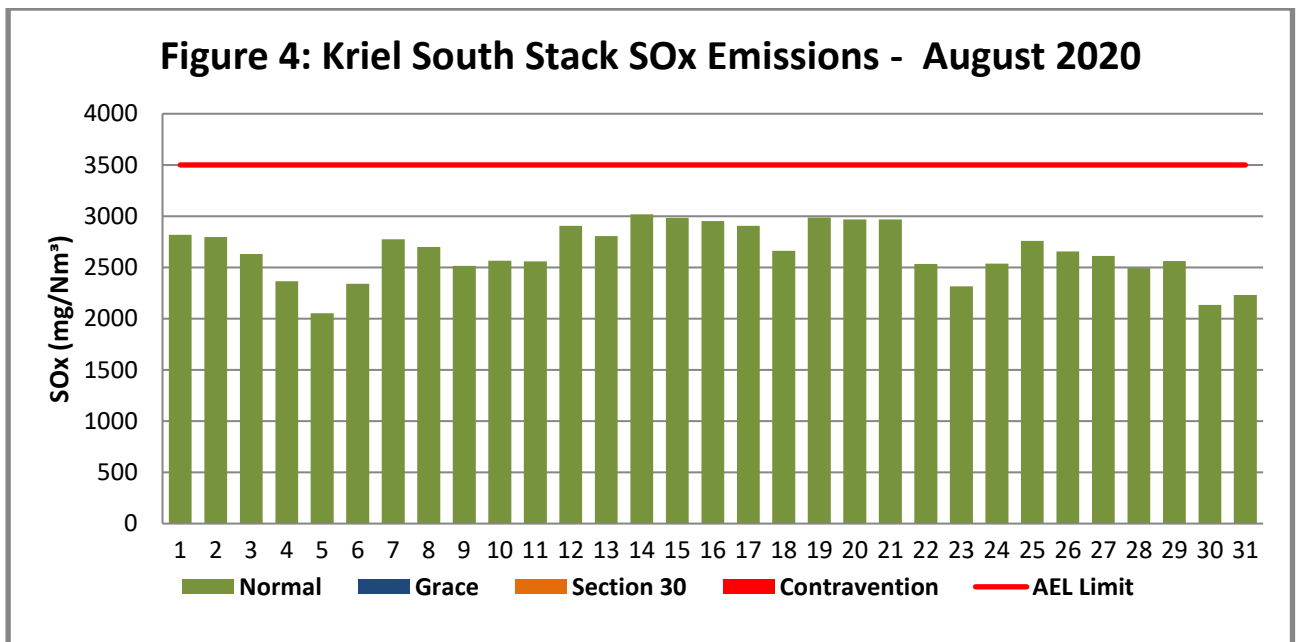


Figure 4 SO₂ emissions (daily averages) for the month of August 2020 against emission limit for the South Stack. The SO_x Limit is 3500mg/Nm³.

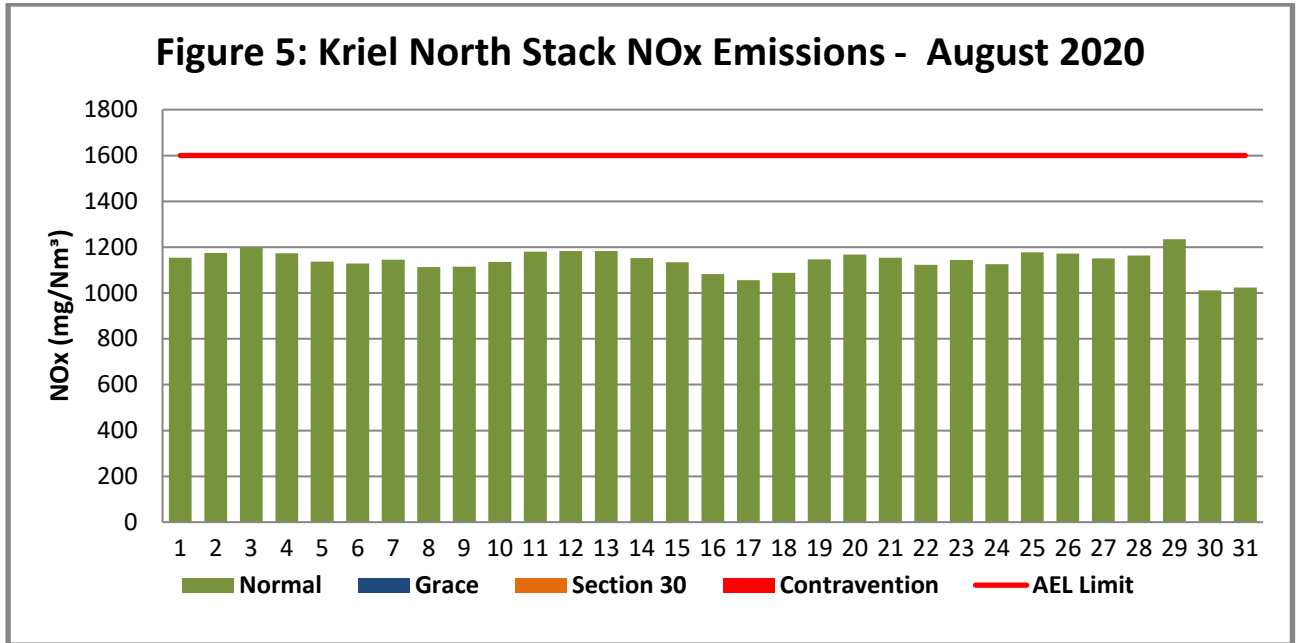


Figure 5. NO₂ emissions (daily averages) for the month of August 2020 against emission limit for the North Stack. The NO_x Limit is 1600mg/Nm³.

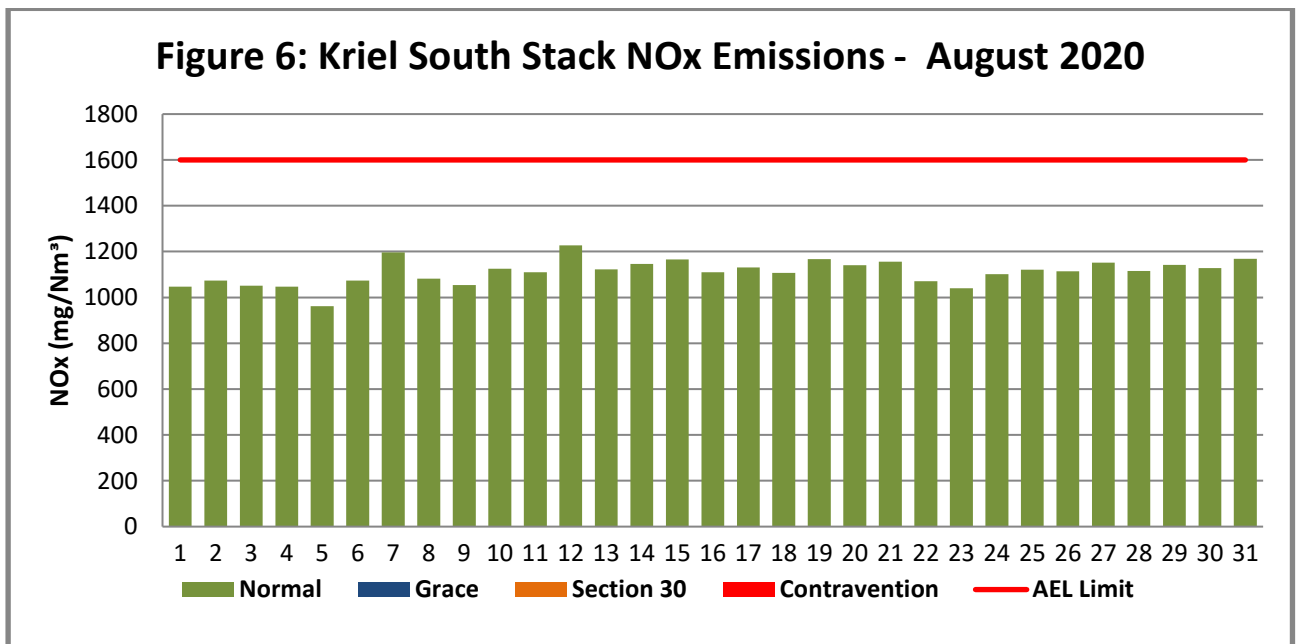


Figure 6. NO₂ emissions (daily averages) for the month of August 2020 against emission limit for the South Stack. The NO_x Limit is 1600mg/Nm³.

Table 4: Monthly tonnages for the month August 2020

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
SUM	509.8	10 485.9	4 630.9

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

Table 5.1: Operating days in compliance to PM AEL Limit - August 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	0	3	0	0	3	97.7
South	7	3	2	0	12	164.3

Table 5.2: Operating days in compliance to SOx AEL Limit - August 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	0	0	0	0	0	2 403.2
South	0	0	0	0	0	2 648.9

Table 5.3: Operating days in compliance to NOx AEL Limit - August 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	31	0	0	0	0	1 139.7
South	31	0	0	0	0	1 111.3

Light up information

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

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		Unit 1		Unit 2		Unit 1	
Breaker Open (BO)			1:10 AM	2020/08/13	BO previously	BO previously	12:50 AM	2020/08/27
Draught Group (DG) Shut Down (SD)			DG did not trip or SD	DG did not trip or SD	n/a	n/a	7:55 PM	2020/08/27
BO to DG SD (duration)		DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	00:19:05	DD:HH:MM
Fires in time			1:10 AM	2020/08/13	7:10 PM	2020/08/01	9:30 PM	2020/08/27
Synch. to Grid (or BC)			6:20 AM	2020/08/13	3:50 AM	2020/08/02	5:45 AM	2020/08/28
Fires in to BC (duration)		DD:HH:MM	00:05:10	DD:HH:MM	00:08:40	DD:HH:MM	00:08:15	DD:HH:MM
Emissions below limit from BC (end date)			12:00 AM	2020/07/26	12:00 AM	2020/07/26	not > limit	not > limit
Emissions below limit from BC (duration)		DD:HH:MM	#####	DD:HH:MM	#####	DD:HH:MM	n/a	DD:HH:MM

North Stack ...Cont.	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

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		Unit 4		Unit 4		Unit 5	
Breaker Open (BO)			6:30 PM	2020/08/10	10:50 PM	2020/08/12	1:35 AM	2020/08/20
Draught Group (DG) Shut Down (SD)			DG did not trip or SD	DG did not trip or SD	4:05 PM	2020/08/13	5:35 AM	2020/08/20
BO to DG SD (duration)		DD:HH:MM	n/a	DD:HH:MM	00:17:15	DD:HH:MM	00:04:00	DD:HH:MM
Fires in time			6:30 PM	2020/08/10	8:40 AM	2020/08/14	11:50 AM	2020/08/20
Synch. to Grid (or BC)			2:15 AM	2020/08/11	2:20 PM	2020/08/14	2:55 PM	2020/08/20
Fires in to BC (duration)		DD:HH:MM	00:07:45	DD:HH:MM	00:05:40	DD:HH:MM	00:03:05	DD:HH:MM
Emissions below limit from BC (end date)			not > limit	not > limit	12:00 AM	2020/07/26	12:00 AM	2020/07/26
Emissions below limit from BC (duration)		DD:HH:MM	n/a	DD:HH:MM	#####	DD:HH:MM	#####	DD:HH:MM

South Stack ...Cont.	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

Complaints Register

Table 7: Complaints for the month of August 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 August 2020.					

General

The particulate matter (PM10) emissions on the North common stack were within the **monthly limit** during the month of August 2020. North stack recorded the monthly PM10 average emissions figure of **97.7mg/Nm3**. South stack recorded PM10 monthly average figure of **120.15mg/Nm3** under normal operation (01 – 27 August 2020) and the overall figure of **164.30mg/Nm3** including days under abnormal/ upset condition (01 – 31 August 2020). The gaseous (NOx & SOx) emissions on the north and south common stack were also within the **daily limit** during the month of August 2020; refer to graphs above.

South Stack - Section 30 Emergency Incident

On the 28th of August 2020, Operating Department noted high particulate matter emissions on the South Stack, averaging above the legal limit of 125mg/Nm3. On the 29th August 2020, Maintenance team discovered that high emission on the south stack was as a result of MCB hopper level indication that had failed due to the environmental nuisance. The malfunctioning MCB hopper level indication was then restored and the plant was returned to service. The Emergency Incident Report was submitted to DEFF and your office on the 14th of September 2020.

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	No section 30 incident reported.			No event to report.
July - 2020	No section 30 incident reported.			No event to report.
Aug - 2020	Upset condition in Unit 05 exceeded 48 hours grace period.	High hopper levels and ash transportation backlog at Unit 05 due to MCB		Incident processed
Sep - 2020				
Oct - 2020				
Nov - 2020				
Dec - 2020				
Jan - 2021				
Feb - 2021				
Mar - 2021				

