

Ms Nompumelelo Simelane
Nkangala District Municipality
PO BOX 437
Middelburg
1050

Date:
01 April 2025

Enquiries:
Livhuwani Tshilate
017 615 2317

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

Dear Ms. Simelane

KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF AUGUST 2024

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 2024. 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 2024

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption / Rate (Quantity)	Consumption / Rate in Month of August 2024
	Coal	Tons/month	1 227 600	523 927.00
	Fuel Oil	Tons/month	8 000	5 613.70
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of August 2024
	Energy	GWh	3 000/2 232	813.483
	Ash	Tons/month	320 000	570.9
	RE PM	kg/MWh	not specified	0.670

1/...

Abatement Technology

Table 2: Abatement Equipment Control Technology for August 2024.

Associated Unit/Stack	Technology Type	Actual Efficiency (%)	Technology Type	SO ₃ Utilisation (%)
Unit 1	ESP& SO3	99.36%	SO3 Plant	1.04
Unit 2	ESP& SO3	99.65%	SO3 Plant	86.48
Unit 3	ESP& SO3	99.29%	SO3 Plant	100.00
Unit 4	ESP& SO3	99.70%	SO3 Plant	100.00
Unit 5	ESP& SO3	Off	SO3 Plant	Off
Unit 6	ESP& SO3	99.86%	SO3 Plant	100.00

Note: ESP plant does not contain bypass mode operation; hence plant 100% Utilised.

Energy Source Characteristics

Table 3: Energy Source Material Characteristics for the month of August 2024

Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6-1.2 (%)	0.74
Ash Content	27-32 (%)	24.02

Monthly Monitor Reliability

Associated Unit/Stack	PM (%)	SO _x (%)	NO _x (%)
North	84.77	88.12	90.27
South	67.47	0.48	0.48

Emissions Reporting

Graph Legend Description

Condition	Colour	Description
Normal	Green	Emissions below Emission Limit Value (ELV)
Grace	Blue	Emissions above the ELV during grace period
Section 30	Orange	Emissions above ELV during a NEMA S30 incident
Contravention	Red	Emissions above ELV but outside grace or S30 incident conditions

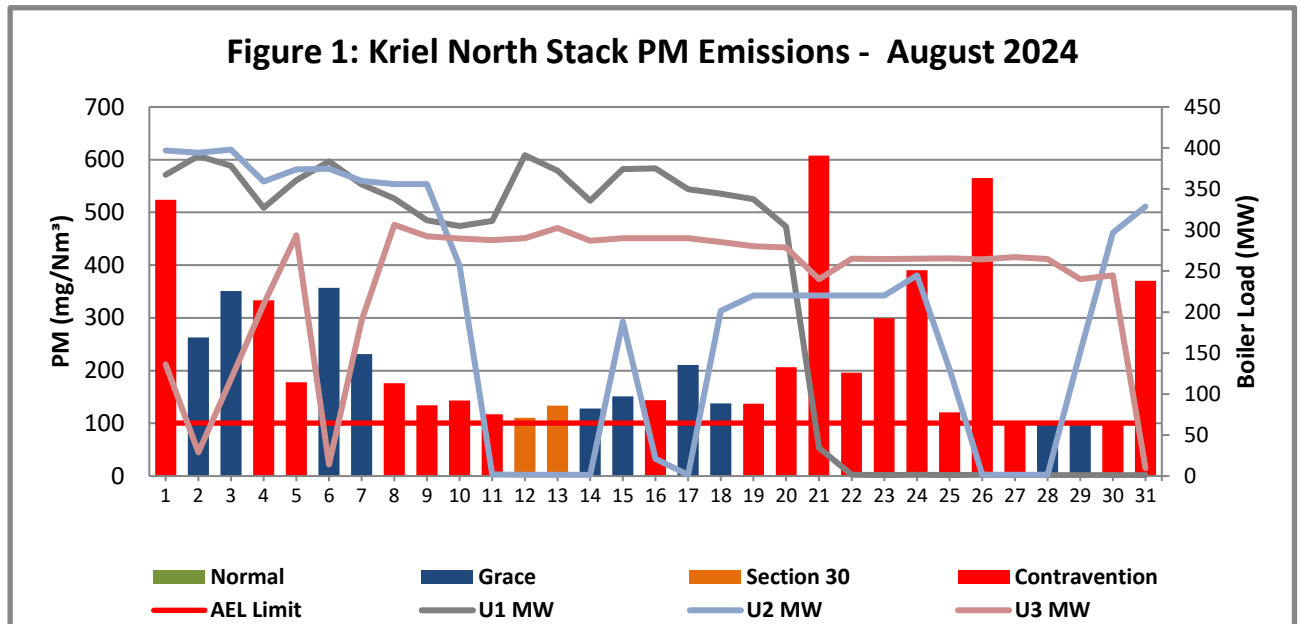


Figure 1: PM emissions for the month of August 2024 against daily emission limit (100 mg/Nm³) for the North Stack.

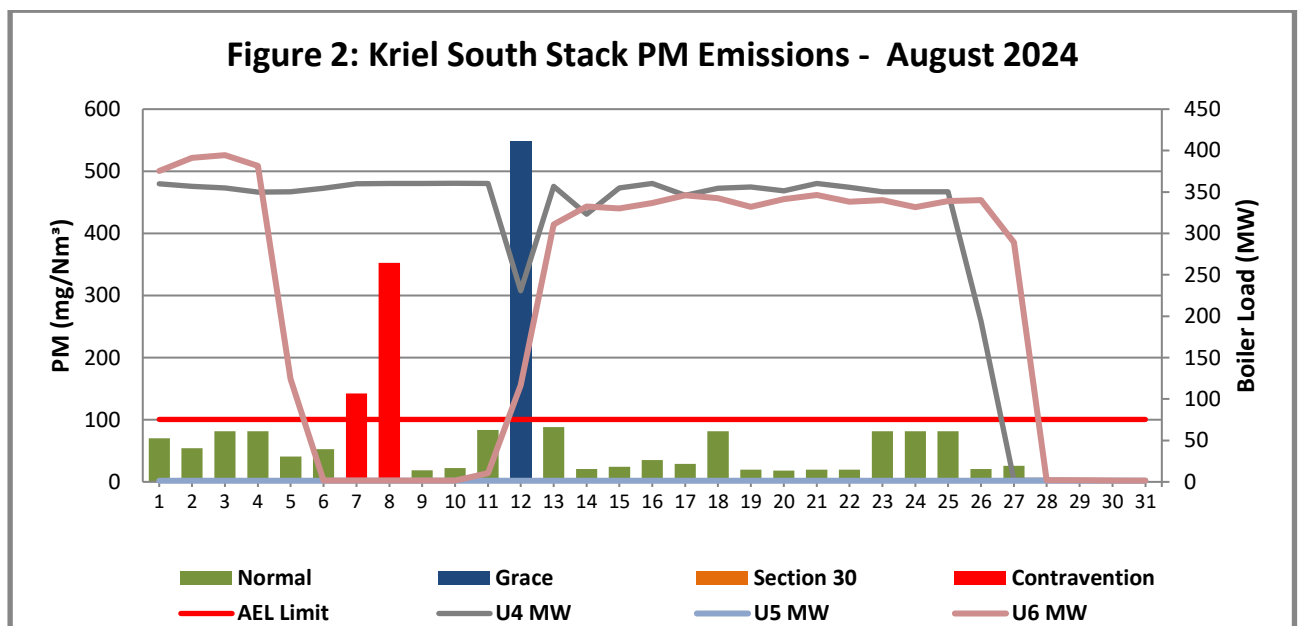


Figure 2: PM emissions for the month of August 2024 against daily emission limit (100 mg/Nm³) for the South Stack.

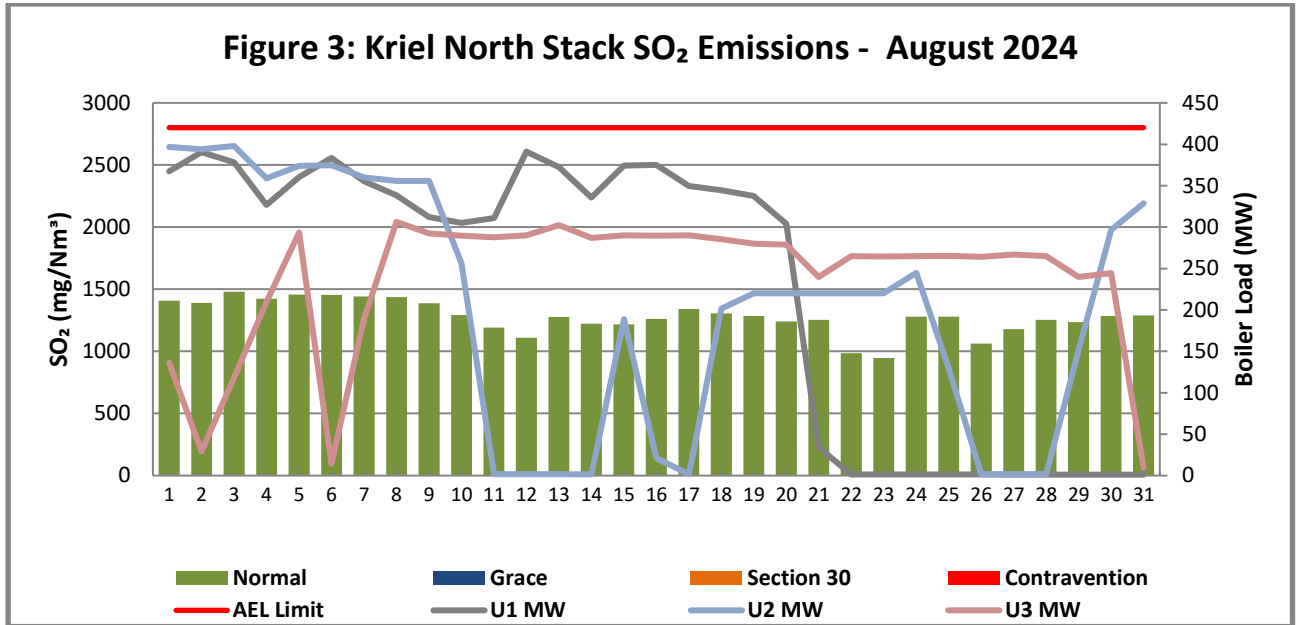


Figure 3. SO₂ emissions for the month of August 2024 against daily emission limit (2800 mg/Nm³) for the North Stack.

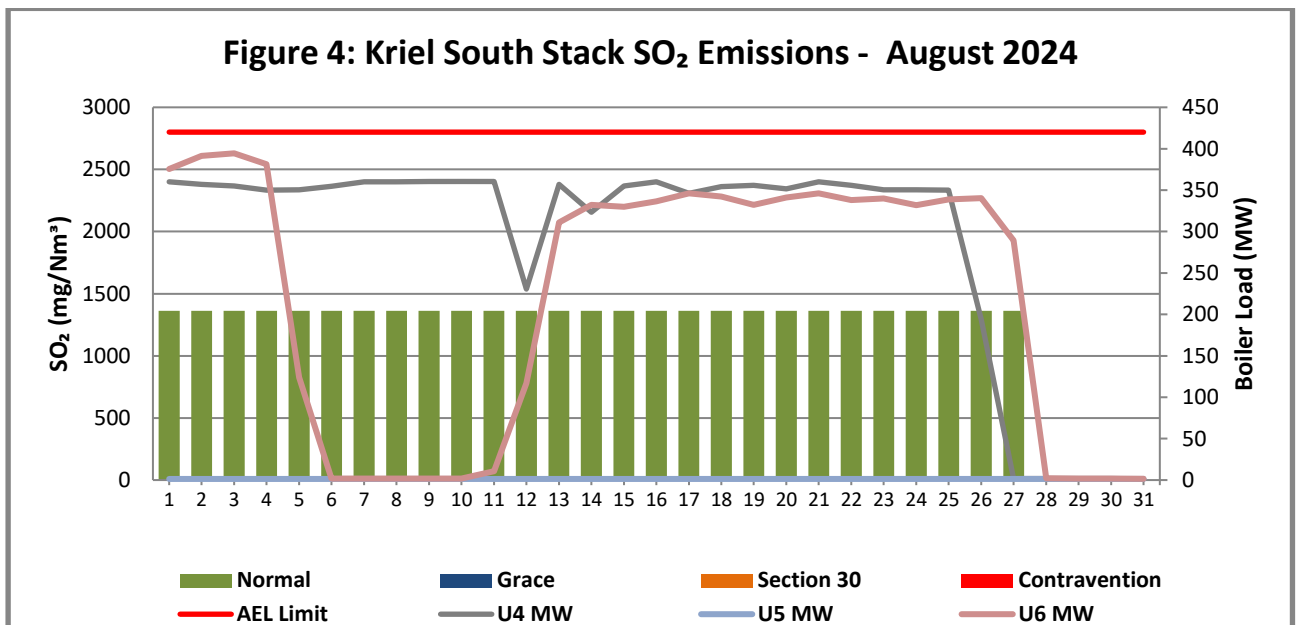


Figure 4. SO₂ emissions for the month of August 2024 against daily emission limit (2800mg/Nm³) for the South Stack. PI (Process Information) system not available due to the HMI Upgrade project with Siemens and C&I Engineering department, as a result, PM and Gaseous readings may be unavailable and/or unreliable from 23/08/2024.

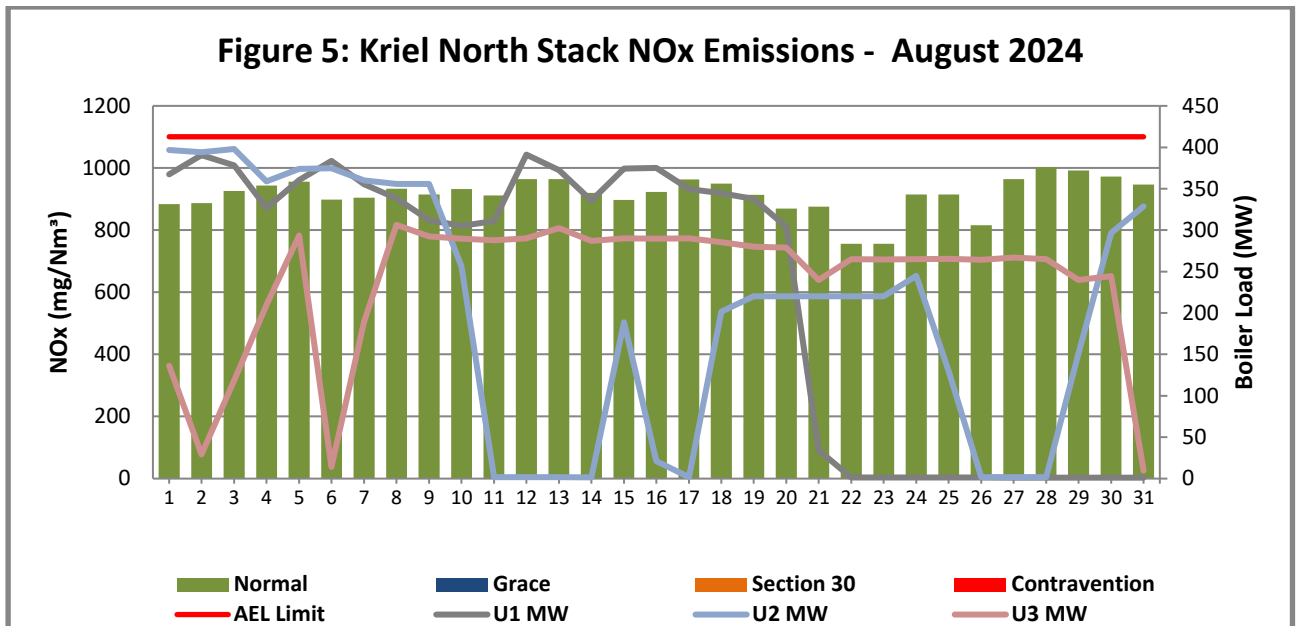


Figure 5. NO₂ emissions for the month of August 2024 against daily emission limit (1100) for the North Stack.

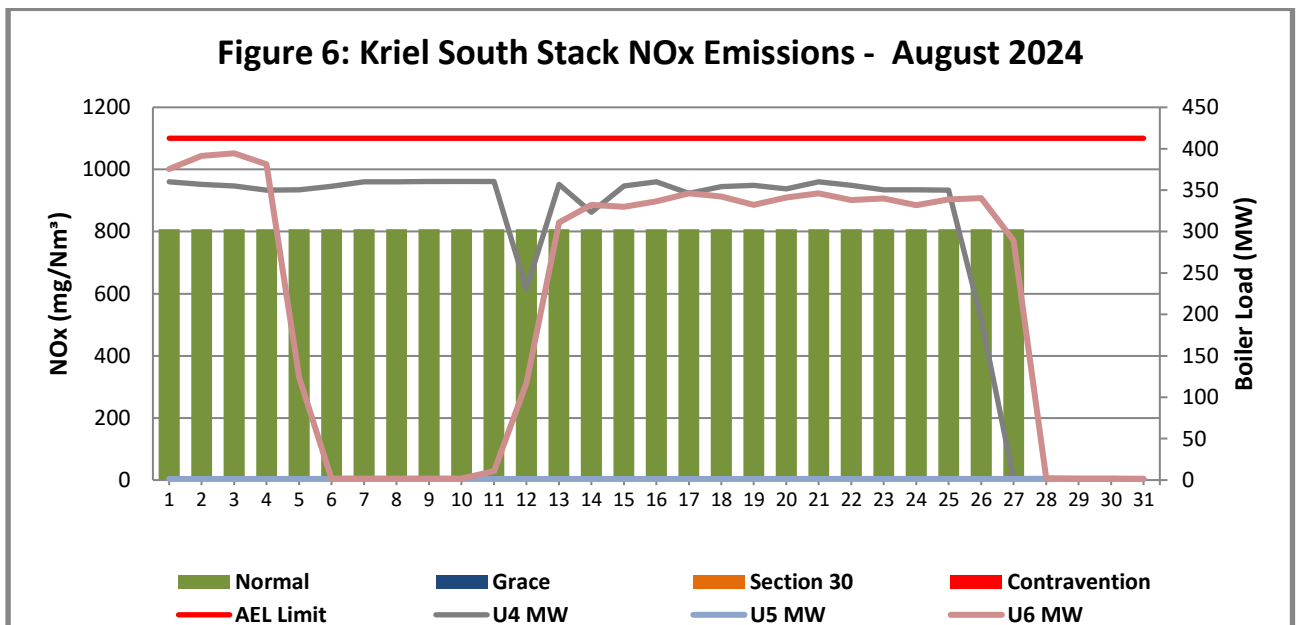


Figure 6. NO₂ emissions for the month of August 2024 against daily emission limit (1100mg/Nm³) for the South Stack. PI (Process Information) system not available due to the HMI Upgrade project with Siemens and C&I Engineering department, as a result, PM and Gaseous readings may be unavailable and/or unreliable from 23/08/2024.

Table 4: Monthly tonnages for the month August 2024

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
SUM	570.9	5 800.1	3 767.8

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

Table 5.1: Operating days in non-compliance to PM AEL Limit – August 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Monthly Limit Exceedance	Average PM (mg/Nm ³)
North	0	10	2	19	31	232.9
South	24	1	0	2	3	81.6

Table 5.2: Operating days in compliance to SO_x AEL Limit – August 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
North	31	0	0	0	0	1279.5
South	27	0	0	0	0	1361.0

Table 5.3: Operating days in compliance to NO_x AEL Limit – August 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
North	31	0	0	0	0	914.9
South	27	0	0	0	0	807.9

Light up information

Table 6: PM Start-up information for the month of August 2024

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 2		Unit 2		Unit 3	
Breaker Open (BO)	2:50 am	2024/08/21	6:40 pm	2024/08/10	10:35 am	2024/08/25	BO previously	BO previously
Draught Group (DG) Shut Down (SD)	7:10 pm	2024/08/21	8:05 am	2024/08/11	2:00 am	2024/08/26	n/a	n/a
BO to DG SD (duration)	00:16:20	DD:HH:MM	00:13:25	DD:HH:MM	00:15:25	DD:HH:MM	n/a	DD:HH:MM
Fires in time			10:00 am	2024/08/17	10:45 pm	2024/08/28		
Synch. to Grid (or BC)			1:10 am	2024/08/18	8:10 am	2024/08/29		
Fires in to BC (duration)		DD:HH:MM	00:15:10	DD:HH:MM	00:09:25	DD:HH:MM		DD:HH:MM

Emission s below limit from BC (end date)			4:00 pm	2024/08/2 3	9:30 am	2024/09/0 2		
Emission s below limit from BC (duration)		DD:HH:M M	05:14:5 0	DD:HH:M M	04:01:2 0	DD:HH:M M		DD:HH:M M

North Stack ...Cont.	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 3		Unit 3		Unit 3		Unit 3	
Breaker Open (BO)			1:10 am	2024/08/06	6:00 pm	2024/08/20	1:20 am	2024/08/31
Draught Group (DG) Shut Down (SD)			1:30 am	2024/08/06	DG did not trip or SD	DG did not trip or SD	10:10 pm	2024/08/31
BO to DG SD (duration)		DD:HH:M M	00:00:2 0	DD:HH:M M	n/a	DD:HH:M M	00:20:5 0	DD:HH:M M
Fires in time	2:40 pm	2024/08/01	2:05 am	2024/08/07	6:00 pm	2024/08/20		
Synch. to Grid (or BC)	8:45 am	2024/08/02	6:35 am	2024/08/07	1:05 am	2024/08/21		
Fires in to BC (duration)	00:18:0 5	DD:HH:M M	00:04:3 0	DD:HH:M M	00:07:0 5	DD:HH:M M		DD:HH:M M
Emission s below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit	4:00 pm	2024/08/23		
Emission s below limit from BC (duration)	n/a	DD:HH:M M	n/a	DD:HH:M M	02:14:5 5	DD:HH:M M		DD:HH:M M

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 4		Unit 4		Unit 6		Unit 6	
Breaker Open (BO)	8:10 am	2024/08/12	2:35 pm	2024/08/26	8:40 am	2024/08/05	8:40 pm	2024/08/27
Draught Group (DG) Shut Down (SD)	9:00 am	2024/08/12	3:00 am	2024/08/27	10:30 pm	2024/08/05	12:15 pm	2024/08/28
BO to DG SD (duration)	00:00:5 0	DD:HH:M M	00:12:2 5	DD:HH:M M	00:13:5 0	DD:HH:M M	00:15:3 5	DD:HH:M M

Fires in time	10:40 am	2024/08/12			9:10 pm	2024/08/12		
Synch. to Grid (or BC)	3:20 pm	2024/08/12			1:35 am	2024/08/13		
Fires in to BC (duration)	00:04:40	DD:HH:M M		DD:HH:M M	00:04:25	DD:HH:M M		DD:HH:M M
Emission s below limit from BC (end date)	12:00 am	2024/08/13			not > limit	not > limit		
Emission s below limit from BC (duration)	00:08:40	DD:HH:M M		DD:HH:M M	n/a	DD:HH:M M		DD:HH:M M

Reasons for emissions poor performance for both stack in August 2024

Table 7: Reasons for emissions poor performance for August 2024

Start Date	Plant	Reason	Affect on Emissions	Action	Feedback	End Date
12/08/2024	SO3 North Pump House	SO3 Pump house caught fire on the 12th of August.	No SO3 injection on North Units 1-3	Fires were extinguished. RTS of pump house, replacing of C&I Communication cables, Transmitters, Pump power cables and Lagging commenced, and Plant was returned on the 15th of August.	Action completed	15/08/2024
17/08/2024	Unit 2 Turbine Plant	A EFP DE Bearing damage	Half Load condition (220MW), No SO3 injection for Unit 2 ESP	A EFP DE Bearing repairs still to commence after delivery of Bearing.	Bearing delivered on 22/08/2024	24/08/2028
23/08/2024	PI (Process Information) system not available	PI (Process Information) system not available due to the HMI Upgrade project with Siemens and C&I Engineering department.	PM and Gaseous readings may be unavailable and/or unreliable from 23/08/2024.	The HMI Upgrade Project in progress.	Project plan and end date TBC	Baseline Completion date 05/11/2024
30/08/2024	Unit 2 SO3 Plant	Process Air Blower Motor Burnt	No SO3 injection on Unit 2	Process Air Blower motor replacement	Action completed	30/08/2024

31/08/2024	Unit 1 SO3 Plant	Process Air Blower Motor Burnt	No SO3 injection on Unit 1	Process Air Blower Motor and Assembly replacement	Action completed	01/09/2024
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Complaints Register

Table 8: Complaint for the month of August 2024

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 2024.					

General

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