Eskom

Generation

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DUVHA POWER STATION

Atmospheric Emission License 17/4/AEL/MP312/11/07

GENERAL MANAGER

2025/07/04.
DATE

MAY 2025

DUVHA POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License 17/4/AEL/MP312/11/07

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate May-2025
	Coal	Tons	*1 400 000*	*465 841.620*
	Fuel Oil	Tons	*5 000*	*5639.12*
Production Rates	**Product / By-Product Name**	**Units**	**Maximum Production Capacity Permitted**	**Indicative Production Rate May-2025**
	Energy	GWh	*2 678.400*	*788.695*
	Ash	Tons	*not specified*	*114 177.8*

Note: Maximum energy rate is as per the maximum capacity stated in the AEL: [3 600 MW] x 24 hrs x days in Month/1000 to convert to GWh

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	*18-24*	*22.58*
Sulphur Content	%	*0.6 TO >1.2*	*0.72*
Ash Content	%	*27 TO 30*	*24.51*

3 EMISSION LIMITS (mg/Nm^3)

Associated Unit/Stack	PM	SO_2	NOx
Unit 1	*50*	*2600*	*1100*
Unit 2	*50*	*2600*	*1100*
Unit 4	*100*	*2600*	*1100*
Unit 5	*50*	*2600*	*1100*
Unit 6	*100*	*2600*	*1100*

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency May-2025	Technology Type	SO_3 Utlization May-2025
Unit 1	*FFP*	*99.9%*	*SO_3*	*n/a*
Unit 2	*FFP*	*100.0%*	*SO_3*	*n/a*
Unit 4	*ESP + SO_3*	*99.8%*	*SO_3*	*98.8%*
Unit 5	*ESP + SO_3*	*100.0%*	*SO_3*	*53.3%*
Unit 6	*ESP + SO_3*	*99.9%*	*SO_3*	*97.1%*
***Note**: ESP plant does not have bypass mode operation, hence plant 100% Utilised.*				

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	O_2
Unit 1	*100.0*	*100.0*	*100.0*	*99.9*
Unit 2	*100.0*	*99.6*	*100.0*	*95.5*
Unit 4	*100.0*	*100.0*	*100.0*	*100.0*
Unit 5	*100.0*	*90.0*	*100.0*	*100.0*
Unit 6	*100.0*	*100.0*	*100.0*	*100.0*

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

6 EMISSION PERFORMANCE

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_x (tons)
Unit 1	47.1	3 665	1 379
Unit 2	9.5	1 328	518
Unit 4	43.1	1 803	843
Unit 5	3.0	62	21
Unit 6	42.5	2 174	1 155
SUM	145.22	9 032	3 915

Table 6.2: Operating days in compliance to PM AEL Limit - May 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 1	30	0	0	0	0	26.1
Unit 2	12	0	0	0	0	15.5
Unit 4	19	1	0	0	1	46.8
Unit 5	0	1	0	0	1	430.6
Unit 6	30	0	0	0	0	30.4
SUM	**91**	**2**	**0**	**0**	**2**	

Table 6.3: Operating days in compliance to SO_2 AEL Limit - May 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
Unit 1	31	0	0	0	0	1 976.7
Unit 2	13	0	0	0	0	1 960.7
Unit 4	22	0	0	0	0	1 741.1
Unit 5	2	0	0	0	0	1 058.2
Unit 6	31	0	0	0	0	1 504.6
SUM	**99**	**0**	**0**	**0**	**0**	

Table 6.4: Operating days in compliance to NOx AEL Limit - May 2025

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	31	0	0	0	0	743.4
Unit 2	13	0	0	0	0	767.9
Unit 4	22	0	0	0	0	813.9
Unit 5	2	0	0	0	0	390.9
Unit 6	31	0	0	0	0	797.4
SUM	**99**	**0**	**0**	**0**	**0**	

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO_2

Table 6.5: 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

Figure 1: Duvha Unit 1 PM Emissions - May 2025

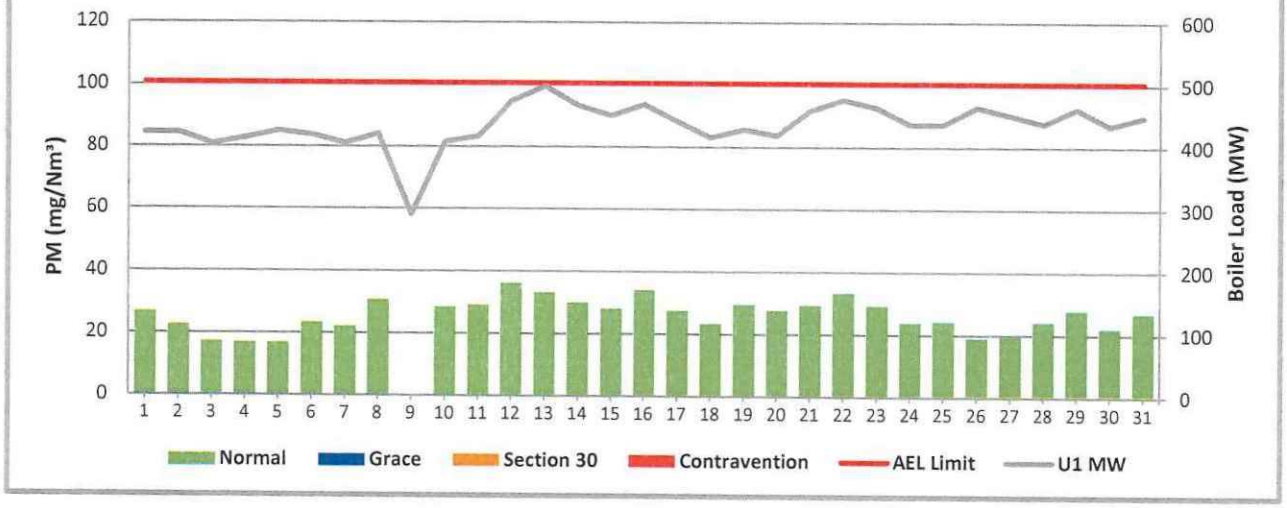


Figure 2: Duvha Unit 2 PM Emissions - May 2025

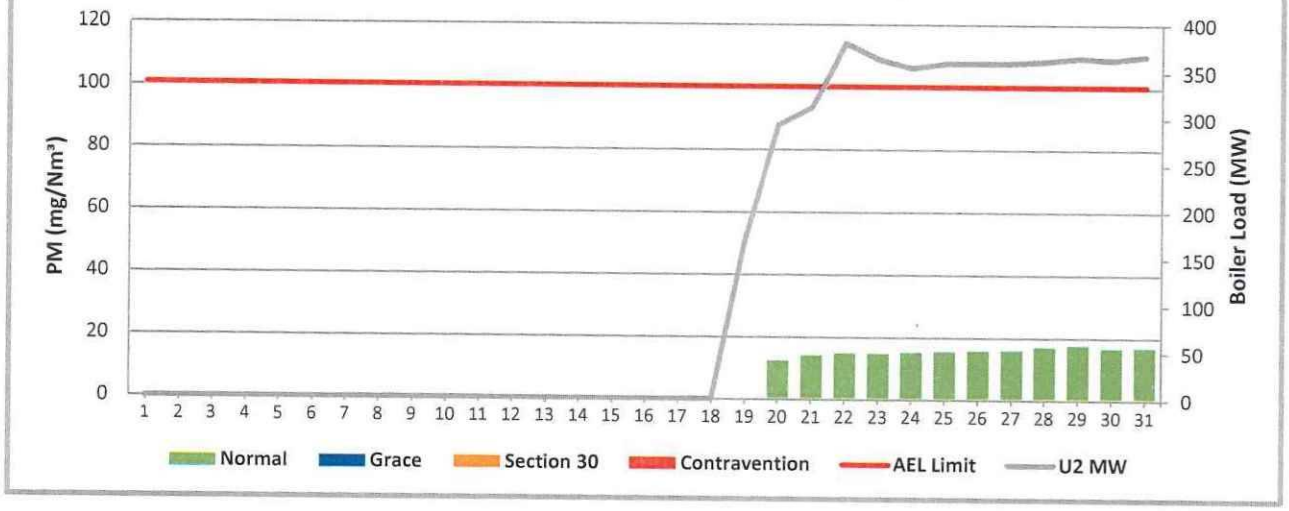


Figure 3: Duvha Unit 4 PM Emissions - May 2025

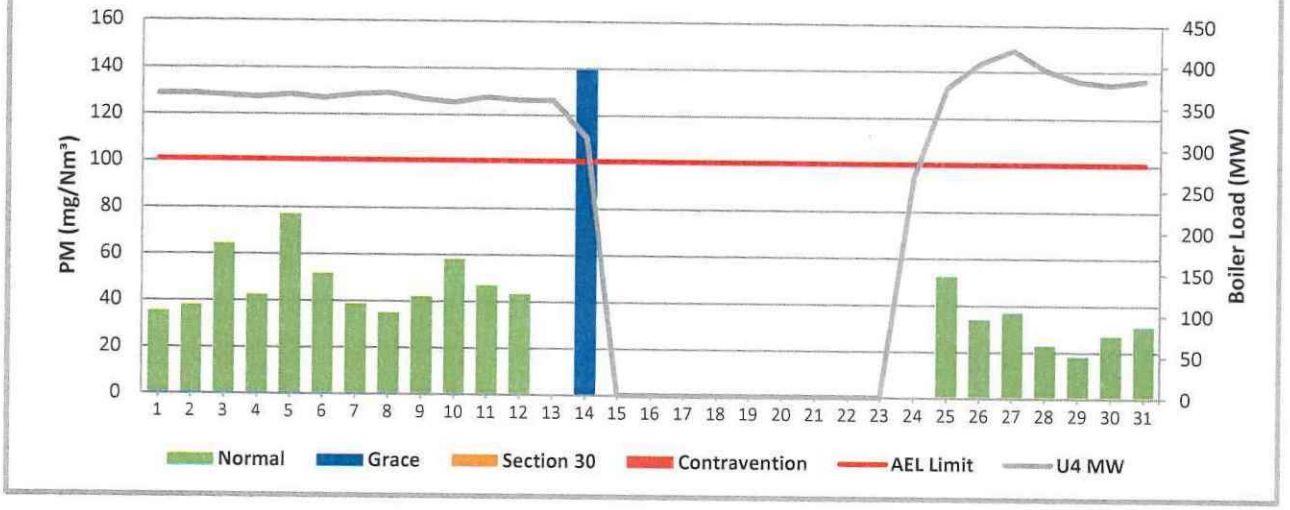


Figure 4: Duvha Unit 5 PM Emissions - May 2025

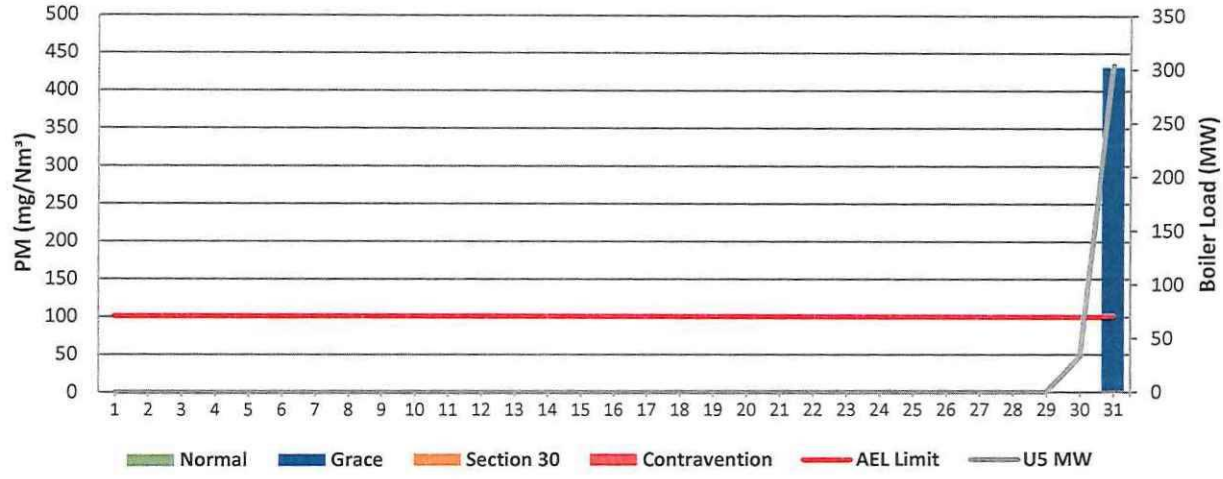


Figure 5: Duvha Unit 6 PM Emissions - May 2025

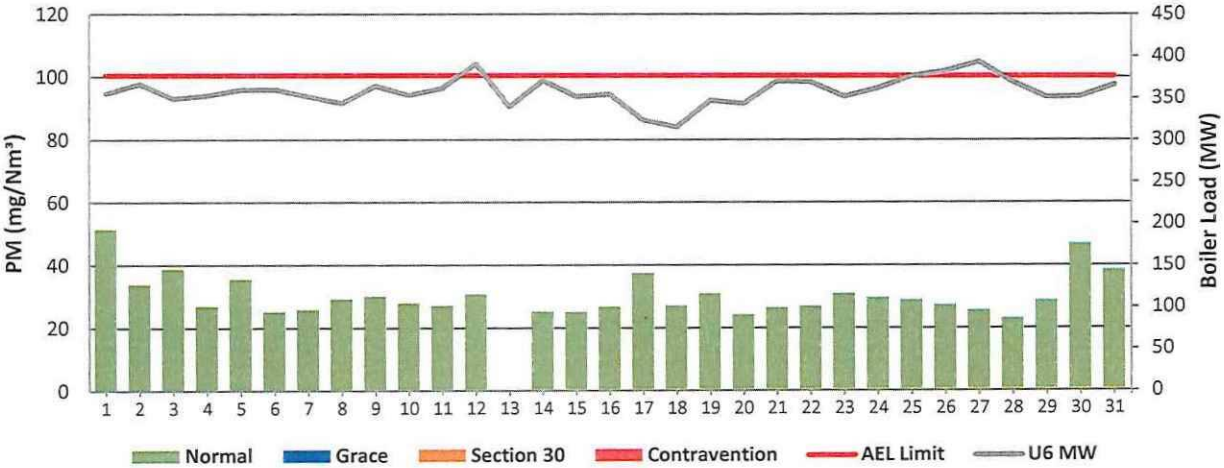


Figure 6: Duvha Unit 1 SO_2 Emissions - May 2025

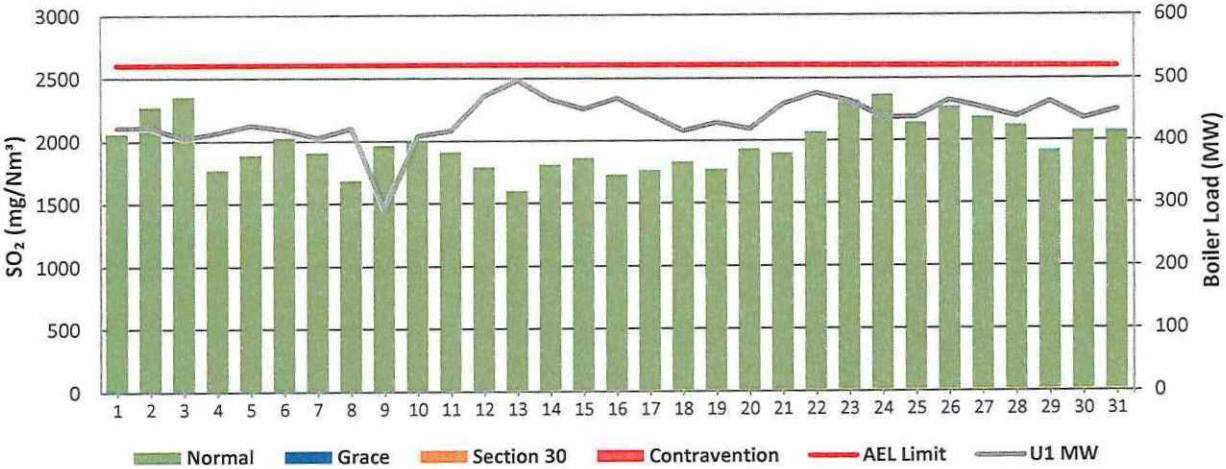


Figure 7: Duvha Unit 2 SO_2 Emissions - May 2025

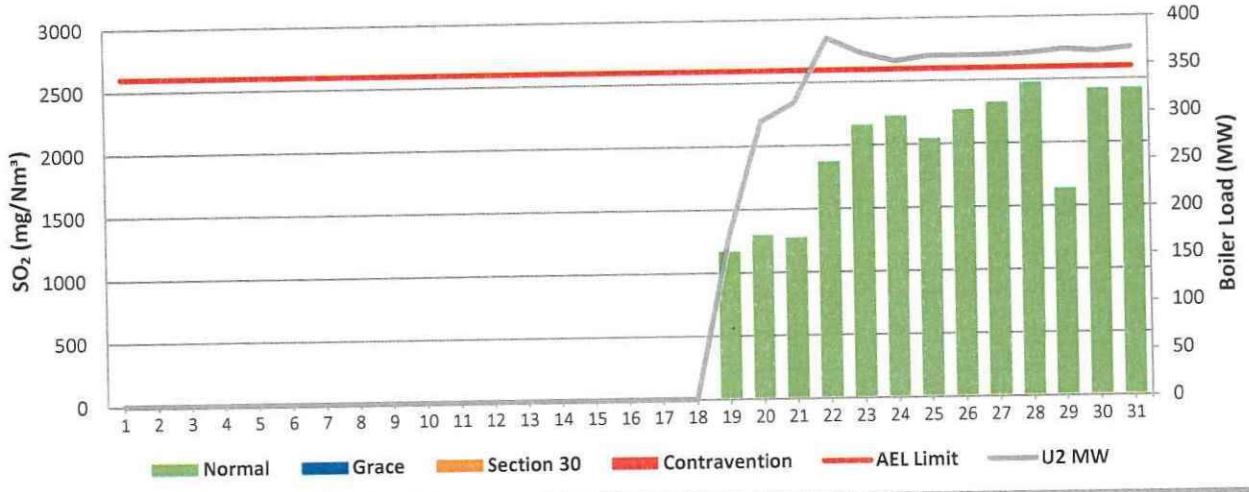


Figure 8: Duvha Unit 4 SO_2 Emissions - May 2025

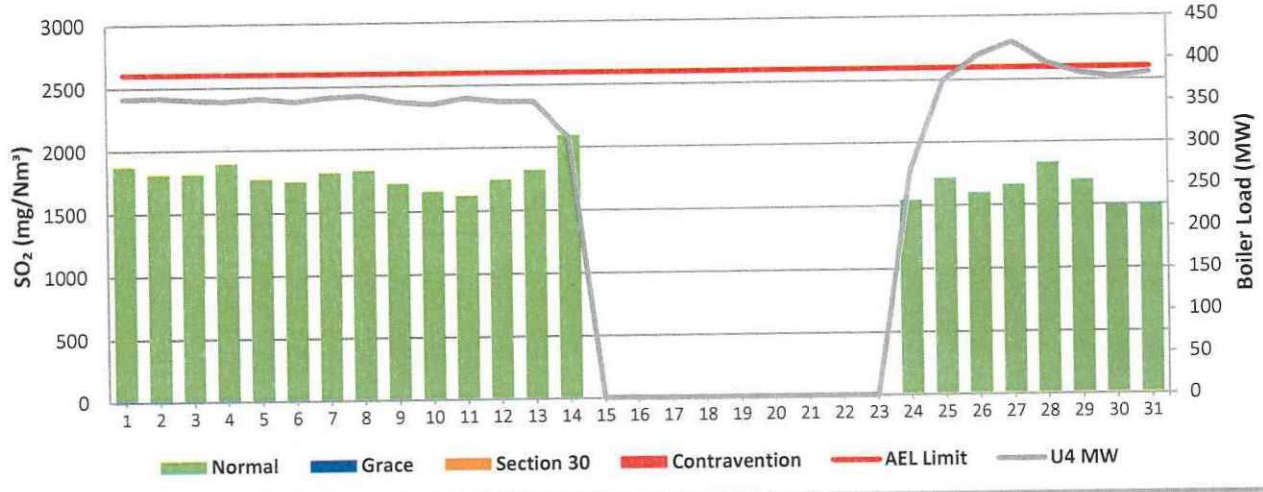


Figure 9: Duvha Unit 6 SO_2 Emissions - May 2025

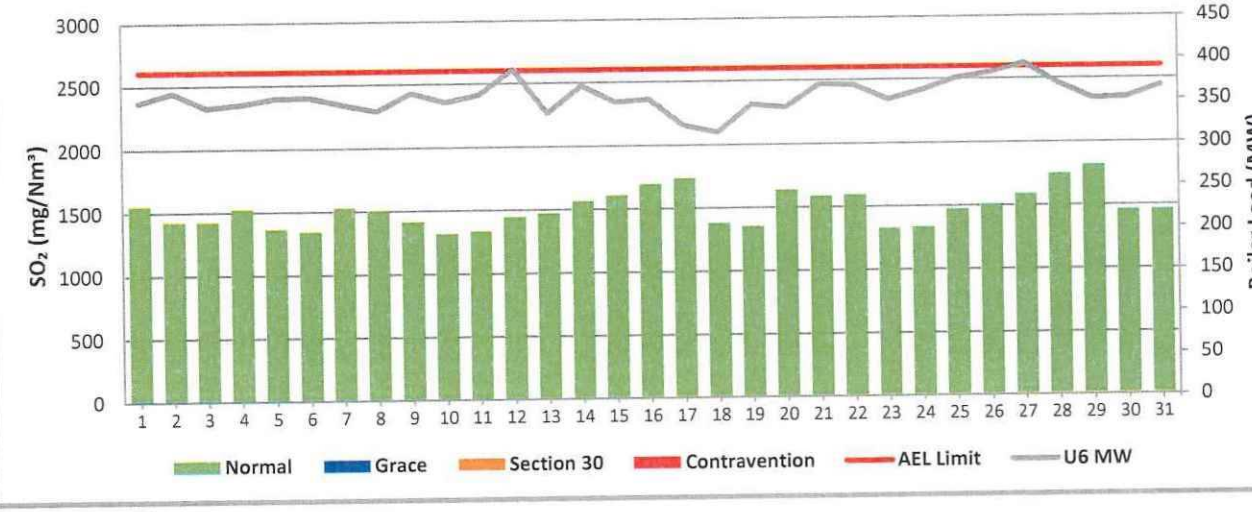


Figure 10: Duvha Unit 1 NOx Emissions - May 2025

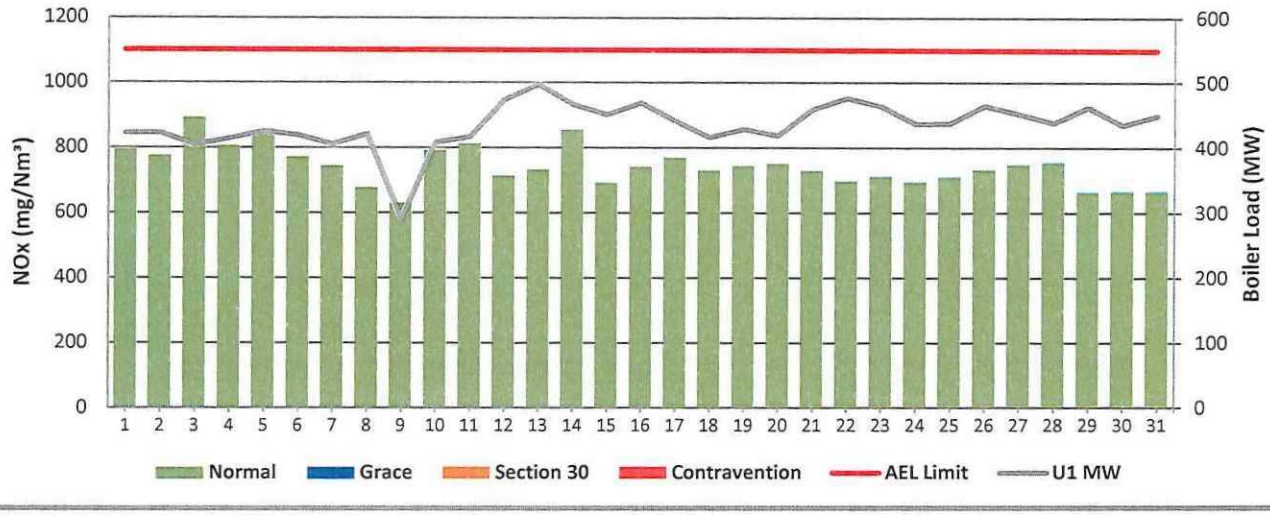


Figure 11: Duvha Unit 2 NOx Emissions - May 2025

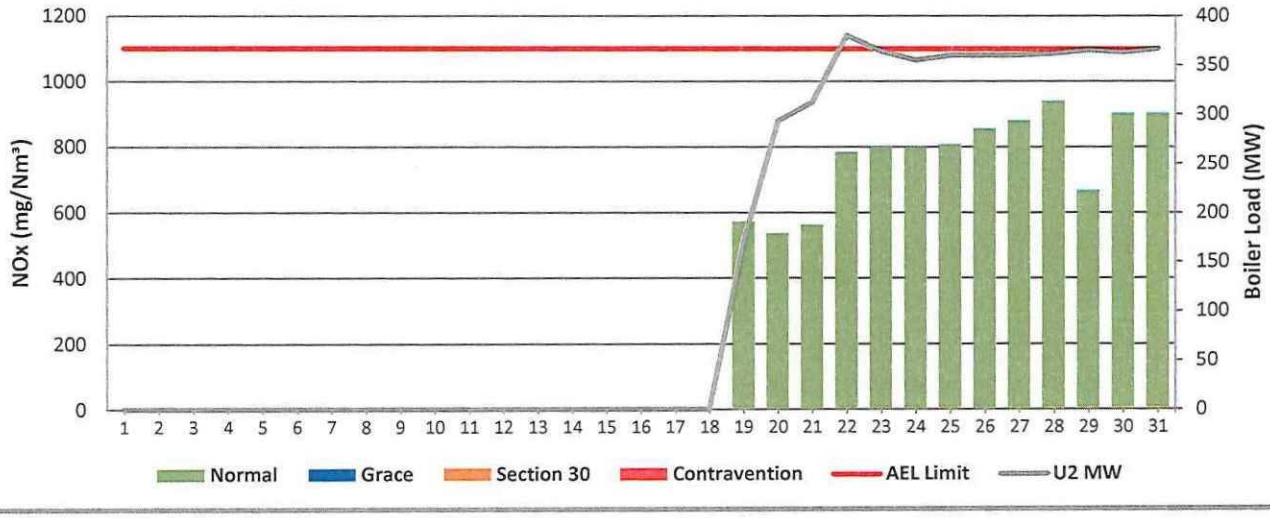


Figure 12: Duvha Unit 4 NOx Emissions - May 2025

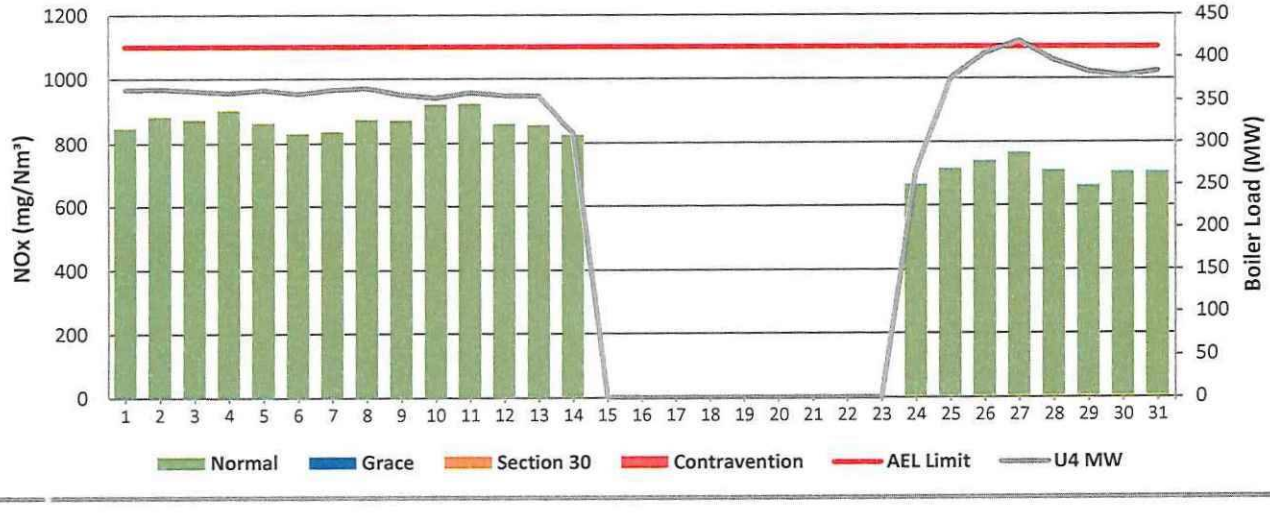


Figure 13: Duvha Unit 5 NOx Emissions - May 2025

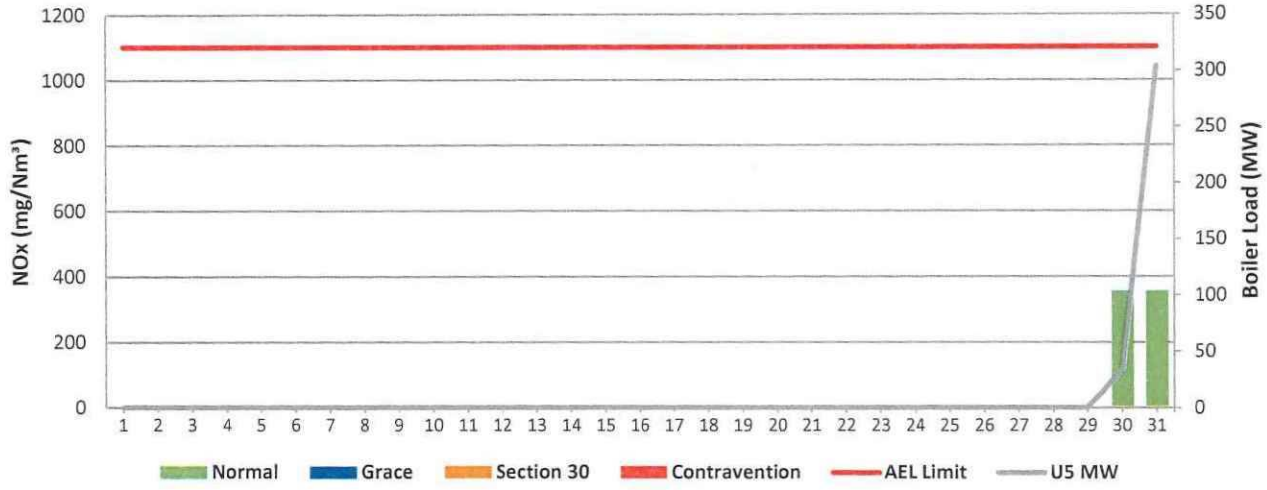
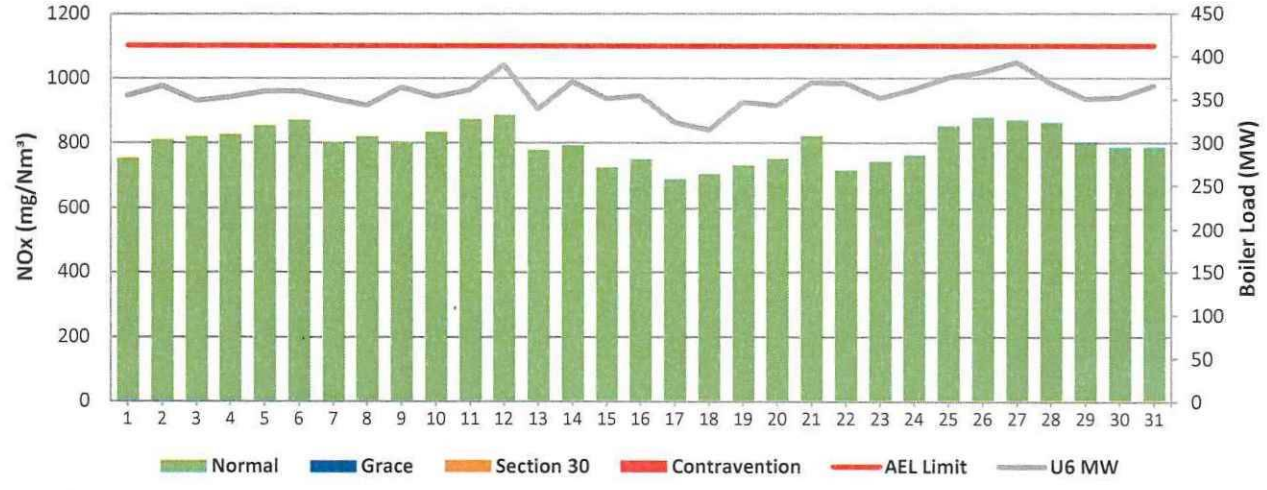


Figure 14: Duvha Unit 6 NOx Emissions - May 2025



7 SHUT DOWN AND LIGHT UP INFORMATION

Tables 7.1: Shut-down and light-up information for the month of May 2025

Unit No.1	*Event 1*	
Breaker Open (BO)	*11:20 pm*	*2025/05/08*
Draught Group (DG) Shut Down (SD)	*DG did not trip or SD*	*DG did not trip or SD*
BO to DG SD (duration)	*DG did not trip or SD n/a*	DD:HH:MM
Fires in time	*DG did not trip or SD*	*DG did not trip or SD*
Synch. to Grid (or BC)	*4:40 am*	*2025/05/09*
Fires in to BC (duration)	*DG did not trip or SD*	DD:HH:MM
Emissions below limit from BC (end date)	*n/a*	*n/a*
Emissions below limit from BC (duration)	*n/a*	DD:HH:MM

Unit No.2	*Event 1*	
Breaker Open (BO)	*BO previously*	*BO previously*
Draught Group (DG) Shut Down (SD)	*DG SD Previously*	*DG SD Previously n/a*
BO to DG SD (duration)	*n/a*	DD:HH:MM
Fires in time	*5:15 am*	*2025/05/19*
Synch. to Grid (or BC)	*1:20 pm*	*2025/05/19*
Fires in to BC (duration)	*00:08:05*	DD:HH:MM
Emissions below limit from BC (end date)	*not > limit*	*not > limit*
Emissions below limit from BC (duration)	*n/a*	DD:HH:MM

Unit No.4	Event 1		Event 2	
Breaker Open (BO)	11:05 pm	2025/05/12	9:15 pm	2025/05/14
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	1:00 am	2025/05/15
BO to DG SD (duration)	n/a	DD:HH:MM	00:03:45	DD:HH:MM
Fires in time	DG did not trip or SD		10:20 pm	2025/05/23
Synch. to Grid (or BC)	01:25	2025/05/13	04:15	2025/05/24
Fires in to BC (duration)	n/a	DD:HH:MM	00:05:55	DD:HH:MM
Emissions below limit from BC (end date)	00:00	2025/05/16	7:00 pm	2025/05/25
Emissions below limit from BC (duration)	02:22:35	DD:HH:MM	01:14:45	DD:HH:MM

Unit No.5	Event 1	
Breaker Open (BO)	BO previously	BO previously
Draught Group (DG) Shut Down (SD)	DG SD Previously	n/a
BO to DG SD (duration)	n/a	DD:HH:MM
Fires in time	1:05 am	2025/05/30
Synch. to Grid (or BC)	8:10 pm	2025/05/30
Fires in to BC (duration)	00:19:05	DD:HH:MM
Emissions below limit from BC (end date)	12:00 am	2025/06/03
Emissions below limit from BC (duration)	03:03:50	2025/06/03

Unit No.6	Event 1	
Breaker Open (BO)	10:45 pm	2025/05/12
Draught Group (DG) Shut Down (SD)	12:20 am	2025/05/13
BO to DG SD (duration)	00:01:35	DD:HH:MM
Fires in time	2:40 am	2025/05/13
Synch. to Grid (or BC)	6:05 am	2025/05/13
Fires in to BC (duration)	00:03:25	2025/05/13
Emissions below limit from BC (end date)	12:00 am	2025/05/14
Emissions below limit from BC (duration)	00:17:55	DD:HH:MM

8 COMPLAINTS

There were no complaints for this month.

Source Code / Name	Root Cause Analysis	Calculation of Impacts / emissions associated with the incident	Dispersion modeling of pollutants where applicable

9 GENERAL

Exceedance on Particulate Matter.

Unit 4

14/05/2025

The Unit was returned to service on the 14th of May 2025, and this was a Cold Unit Light Up.

Unit 5

31/05/2025

The Unit was returned to service on the 30th of May 2025, and this was a Cold Unit Light Up

Fuel Oil usage for the month of May 2025 exceeded the permitted consumption rate due to the following reasons

- Unit1 had high fuel oil consumption due to continuous oil burner support as a result of mills running with low mill outlet temperatures.
- Unit 2 had high fuel oil consumption due to unavailability of 1 Electric Feed Pump (EFP A was on permit to work for repairs) and three light up activities (light up kept being aborted due to vacuum challenges).
- Unit 5 High fuel oil consumption due to multiple unit 5 light up activities after a long outage.
- Unit 4 continuously on fuel oil support to support combustion due to unstable pyrometers.
- Unit 6 high consumption due to unavailability of mills.

Additionally, the SO3 plant utilization was lower than the minimum rate as stipulated in the AEL due to the following reasons

Unit 5

The Unit had just been returned to service, the duct temperatures were too low and sulphur control valve was not controlling on automatic mode.

Unit 6

There was a replacement of the sulphur flow sensor and the SO3 plant took time to stabilize.

10 S30 Incidents Register

No section 30 incidents were incurred during this month.

Boiler Plant Engineering Manager

04/07/25
Date

Environmental Manager

2025/07/04
Date

Engineering Manager

2025/07/04
Date

Compiled by:	Environmental Officer	
For:	Nkangala District Municipality	Air Quality Officer
Copies:	Generation Environmental Management	D Herbst B Mccourt
	Generation Complaince Management	R Rampiar
	Generation Asset Management	E Patel
	Duvha Power Station:	Engineering Manager Operating Manager Maintenance Manager Production Manager Boiler Engineering Manager System Engineer Environmental Manager