



Generation

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Total number of pages:14

Total number of Annexes:0

DUVHA POWER STATION

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



GENERAL MANAGER

2025/09/30
DATE

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	Max Permitted Consumption Rate	Consumption Rate Aug-2025
	Coal	Tons	2 260 000	574 291.69
	Fuel Oil	Tons	5 000	5283.26
Production Rates	Product / By-Product Name	Units	Max Production Capacity Permitted	Indicative Production Rate Aug-2025
	Energy	GWh	2 678.400	1 043 465.77
	Ash	Tons	not specified	139 552.88

Note: Max energy rate = AEL capacity [3,600 MW] × 24 hrs × days in month ÷ 1,000 (to convert to GWh).

2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	18-24	22.72
Sulphur Content	%	0.6 TO >1.2	0.74
Ash Content	%	27 TO 30	24.30

3. EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	Daily Limit		
	PM	SO ₂	NO _x
Unit 1	50	2600	1100
Unit 2	50	2600	1100
Unit 3	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	ESP Efficiency	Technology Type	SO ₃ Plant Utilization
Unit 1	ESP + SO ₃	99.884%	SO ₃	n/a
Unit 2	ESP + SO ₃	99.951%	SO ₃	n/a
Unit 3	ESP + SO ₃	Off-line	SO ₃	n/a
Unit 4	ESP + SO ₃	99.809%	SO ₃	98.7%
Unit 5	ESP + SO ₃	99.866%	SO ₃	97.4%
Unit 6	ESP + SO ₃	99.803%	SO ₃	96.9%

Note: The ESP plant does not have a bypass mode; therefore, it operates at 100% utilization.

5. DATA RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	92.5	93.5	93.7
Unit 2	99.7	92.5	92.7	92.9
Unit 3	Off	Off	Off	Off
Unit 4	99.6	91.1	91.1	77.4
Unit 5	99.3	86.7	86.7	86.0
Unit 6	99.5	89.3	89.3	85.9

Note: NO_x emissions are measured as NO in PPM. The final NO_x value is expressed as total NO₂ equivalent.

6. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for August 2025

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	26.0	1 995	812
Unit 2	9.1	1 810	944
Unit 3	Off	Off	Off
Unit 4	56.4	2 467	1 141
Unit 5	27.2	1 264	557
Unit 6	40.6	2 141	867
SUM	159.37	9 677	4 320

Table 6.2: PM AEL Daily - August 2025

Associated Unit/Stack	Normal	Grace	Section 30	NC	Total Exceedance	Mnth Avg (mg/Nm ³)
Unit 1	22	0	0	0	0	21.1
Unit 2	19	0	0	0	0	9.6
Unit 3	Off	Off	Off	Off	Off	Off
Unit 4	31	0	0	0	0	33.0
Unit 5	18	1	0	0	1	31.2
Unit 6	23	0	0	0	0	32.0
SUM	113	1	0	0	1	

Table 6.3: SO₂ AEL Daily - August 2025

Associated Unit/Stack	Normal	Grace	Section 30	NC	Total Exceedance	Mnth Avg (mg/Nm ³)
Unit 1	24	0	0	0	0	1 503.4
Unit 2	21	0	0	0	0	1 761.9
Unit 3	Off	Off	Off	Off	Off	Off
Unit 4	31	0	0	0	0	1 481.0
Unit 5	20	0	0	0	0	1 402.3
Unit 6	25	0	0	0	0	1 669.5
SUM	121	0	0	0	0	

Table 6.4: NO_x AEL Daily - August 2025

Associated Unit/Stack	Normal	Grace	Section 30	NC	Total Exceedance	Mnth Avg (mg/Nm ³)
Unit 1	24	0	0	0	0	606.6
Unit 2	21	0	0	0	0	904.3
Unit 3	Off	Off	Off	Off	Off	Off
Unit 4	31	0	0	0	0	682.2
Unit 5	20	0	0	0	0	611.8
Unit 6	25	0	0	0	0	662.0
SUM	121	0	0	0	0	

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
Contravention		Emissions above ELV but outside grace or S30 incident conditions

Figure 1: Duvha Unit 1 PM Emissions - August 2025

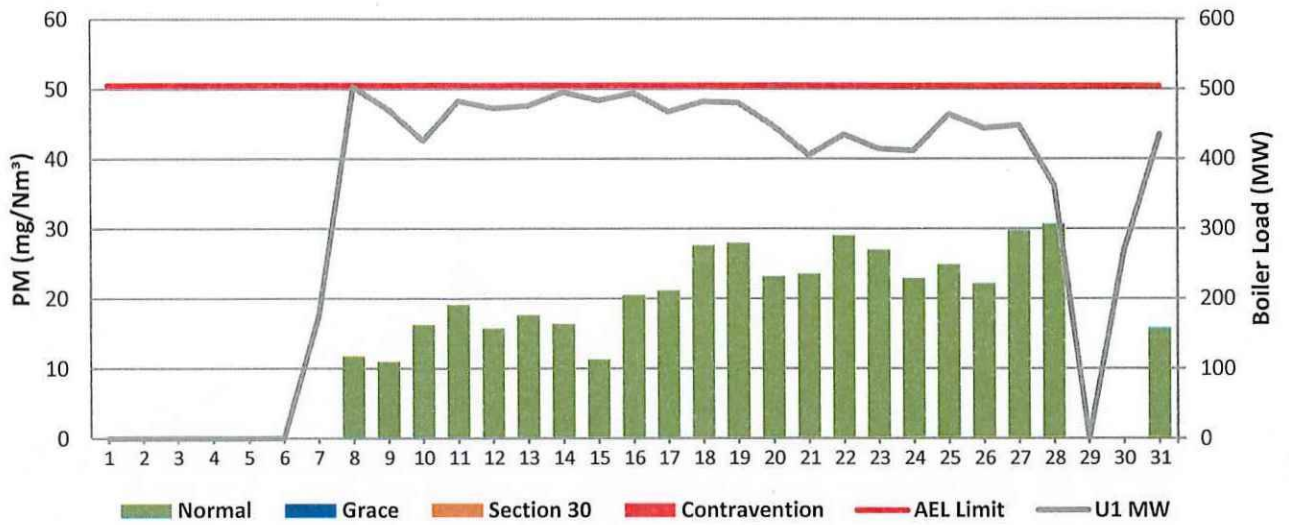


Figure 2: Duvha Unit 2 PM Emissions - August 2025

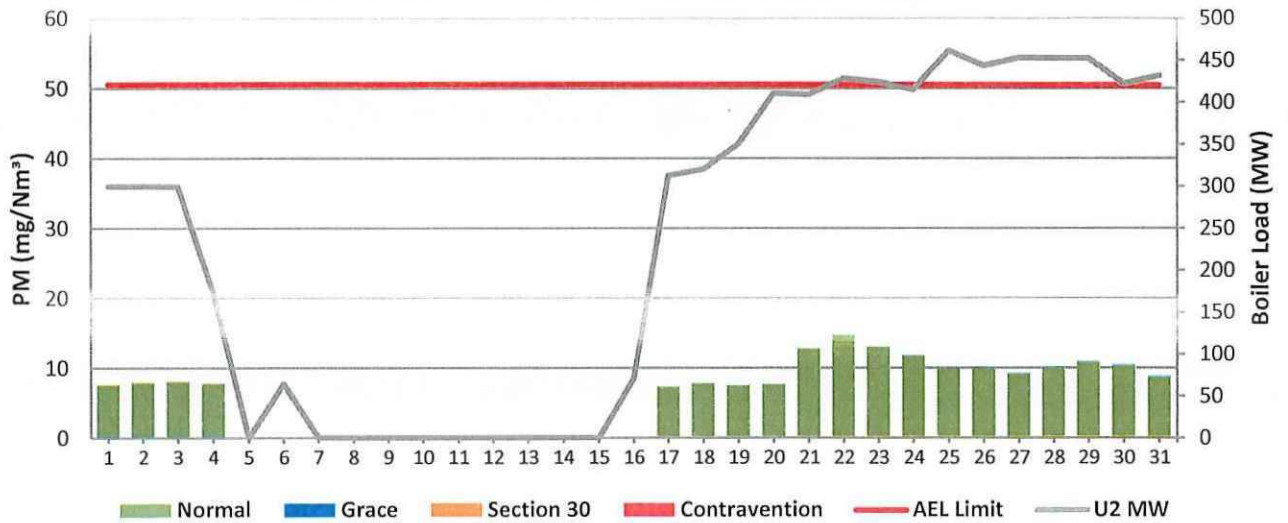


Figure 3: Duvha Unit 4 PM Emissions - August 2025

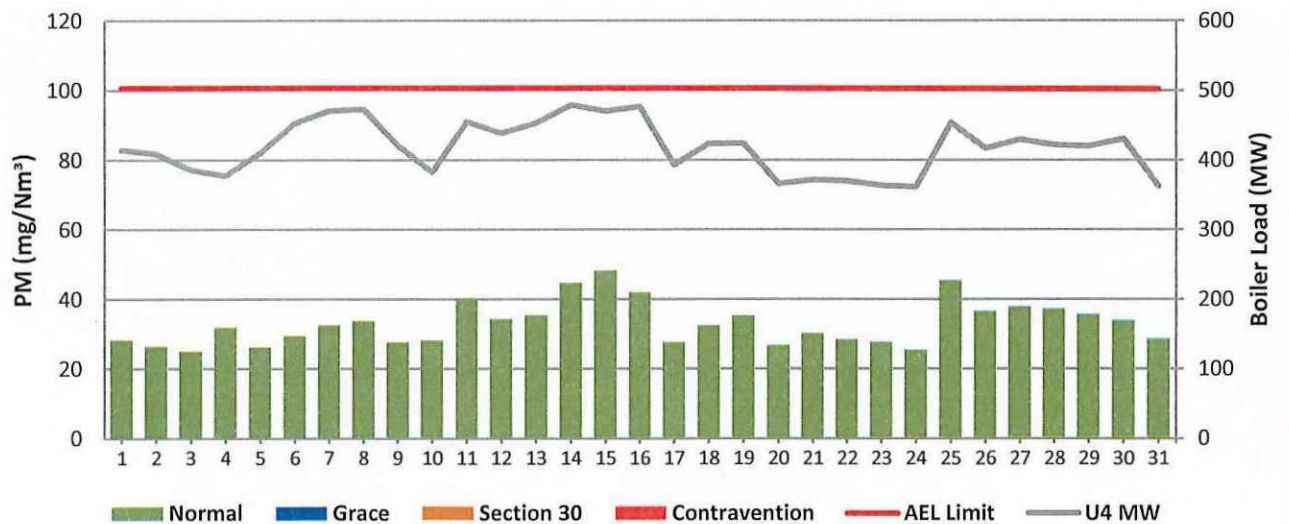


Figure 4: Duvha Unit 5 PM Emissions - August 2025

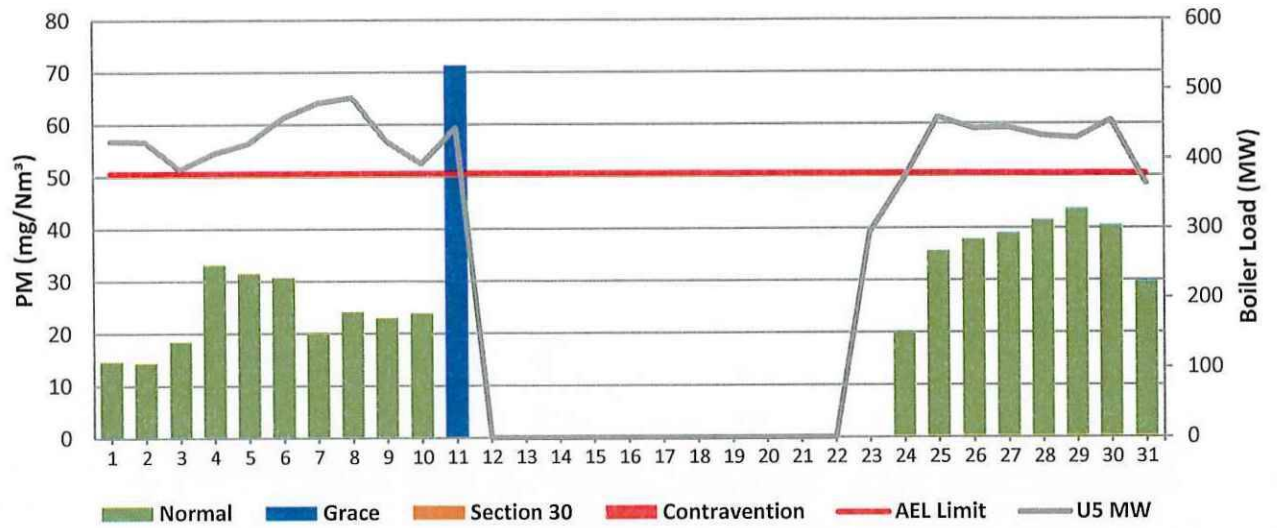


Figure 5: Duvha Unit 6 PM Emissions - August 2025

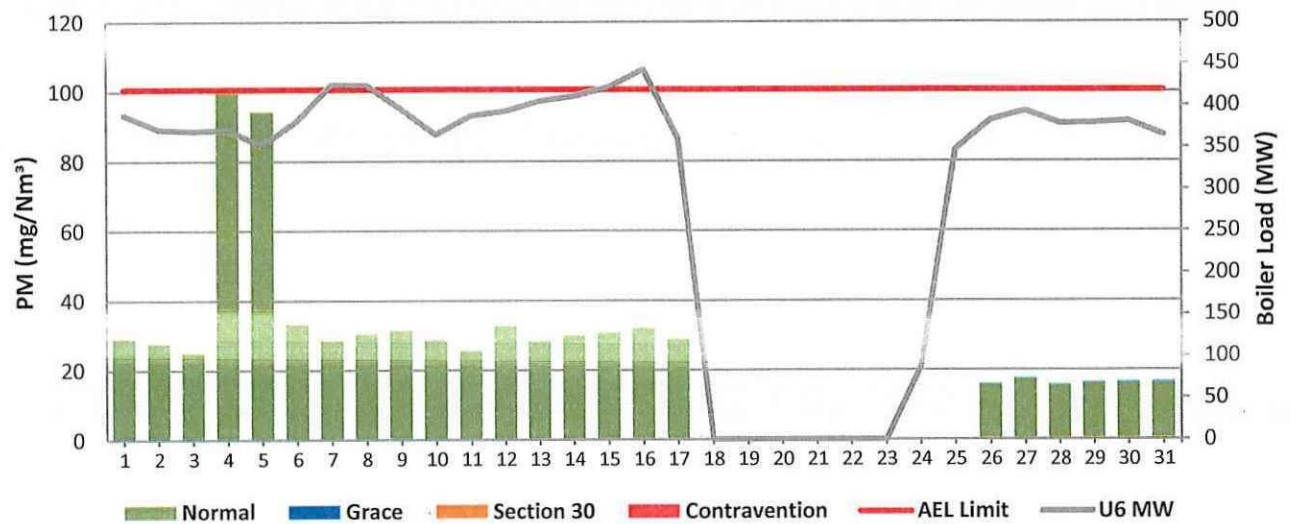


Figure 6: Duvha Unit 1 SO₂ Emissions - August 2025

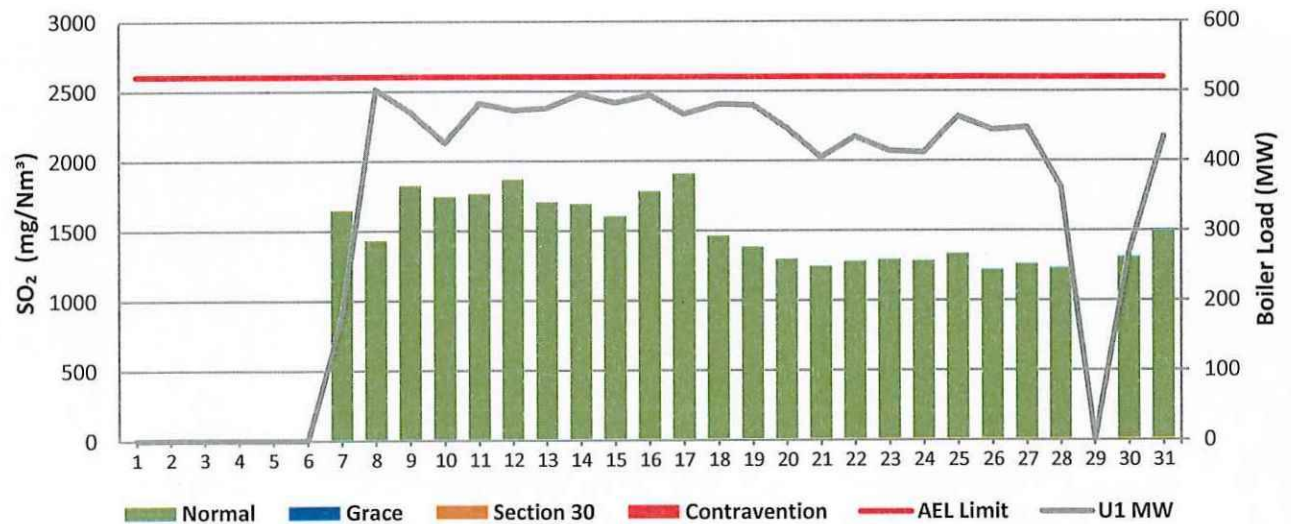


Figure 7: Duvha Unit 2 SO₂ Emissions - August 2025

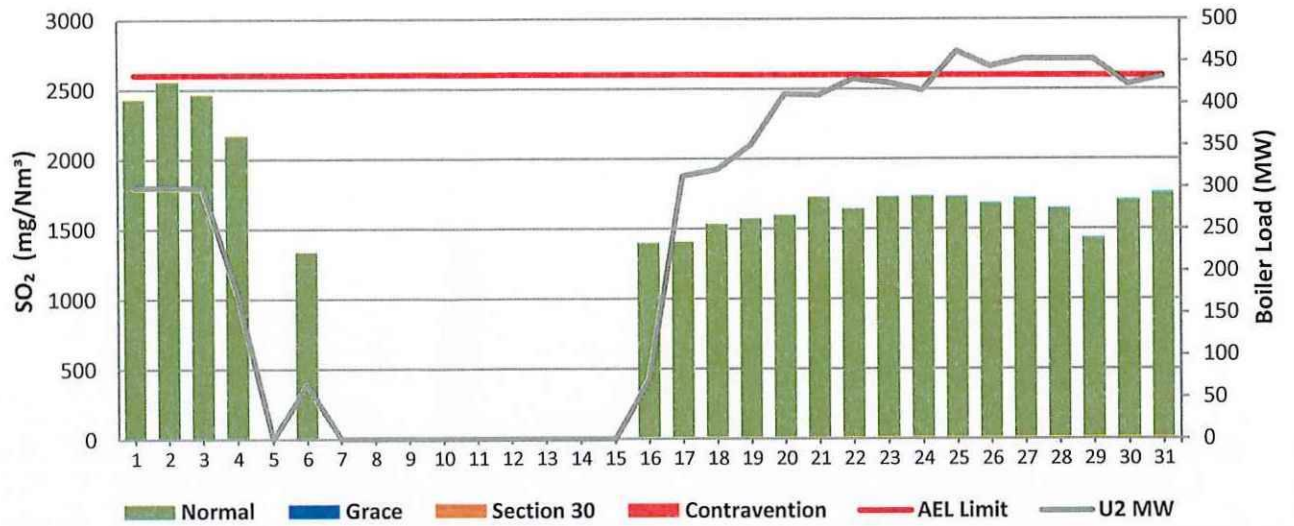


Figure 8: Duvha Unit 4 SO₂ Emissions - August 2025

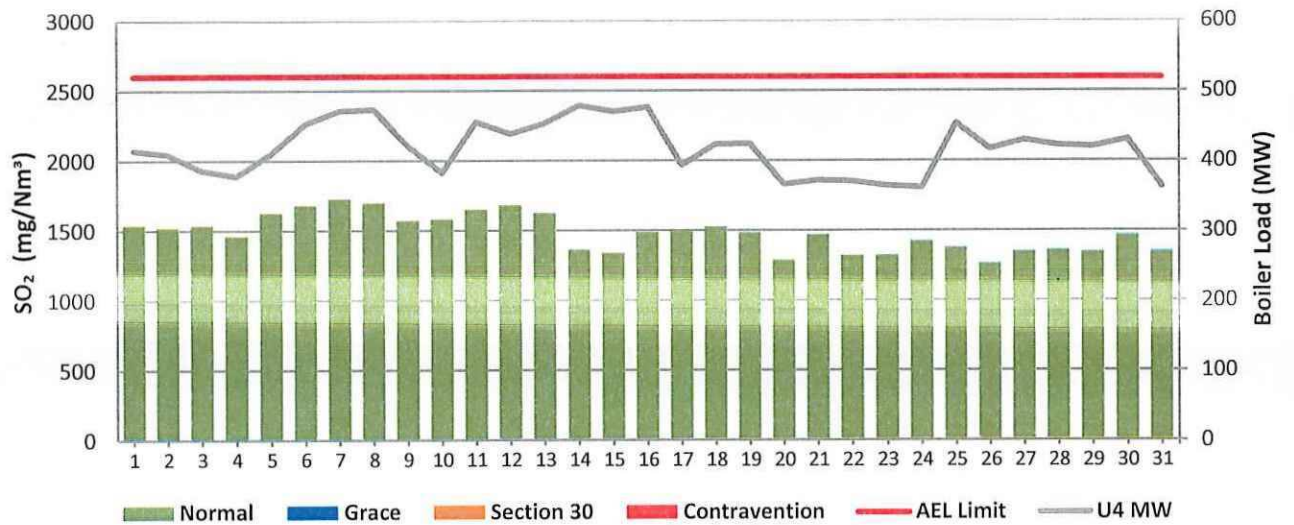


Figure 9: Duvha Unit 5 SO₂ Emissions - August 2025

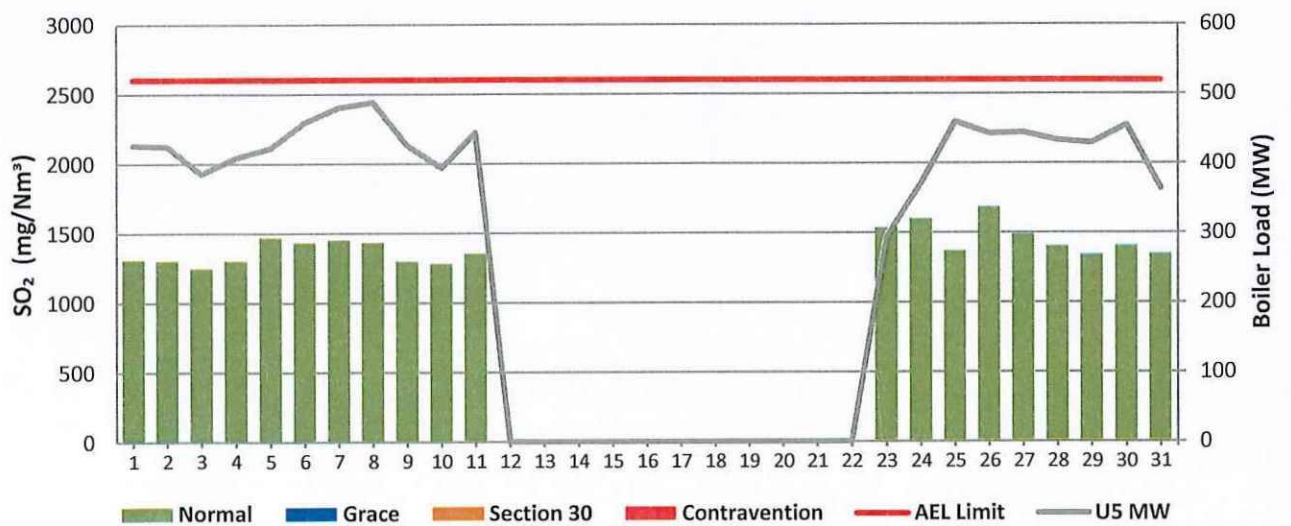


Figure 10: Duvha Unit 6 SO₂ Emissions - August 2025

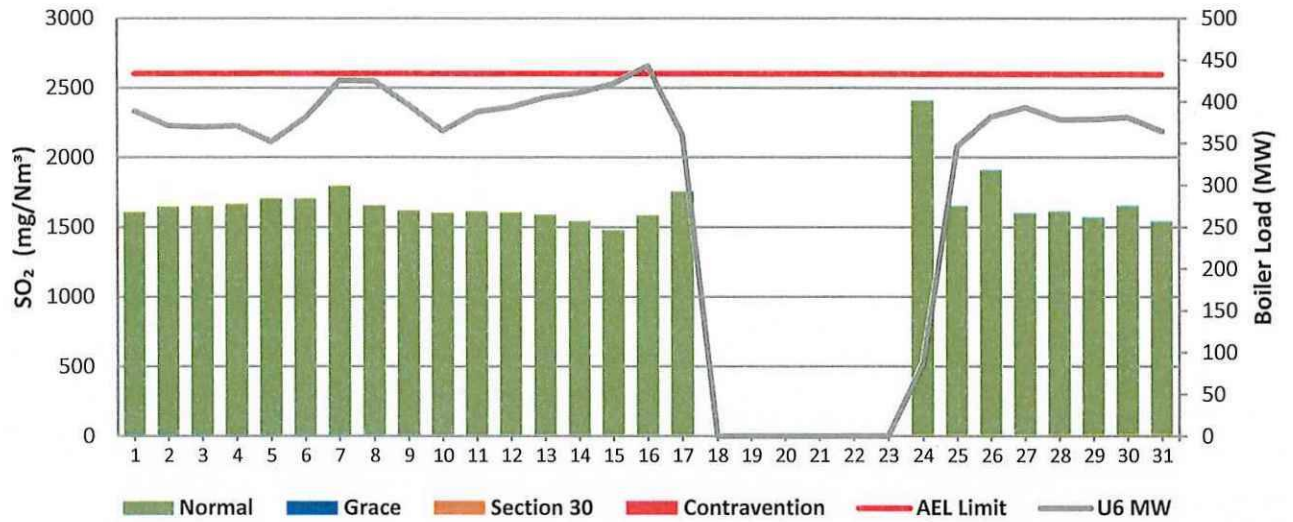


Figure 11: Duvha Unit 1 NO_x Emissions - August 2025

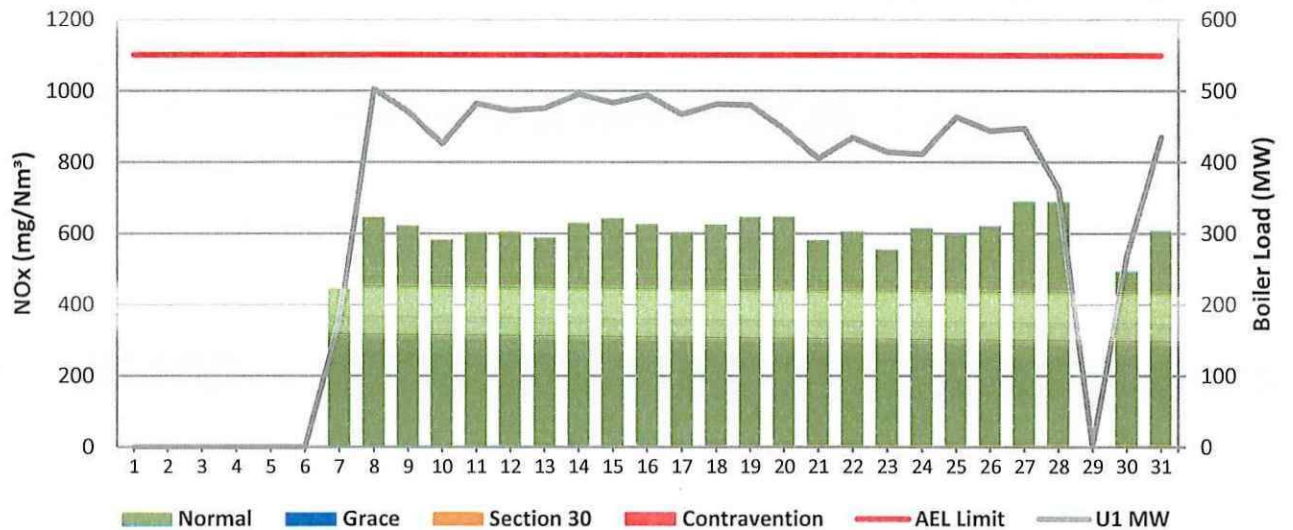


Figure 12: Duvha Unit 2 NO_x Emissions - August 2025

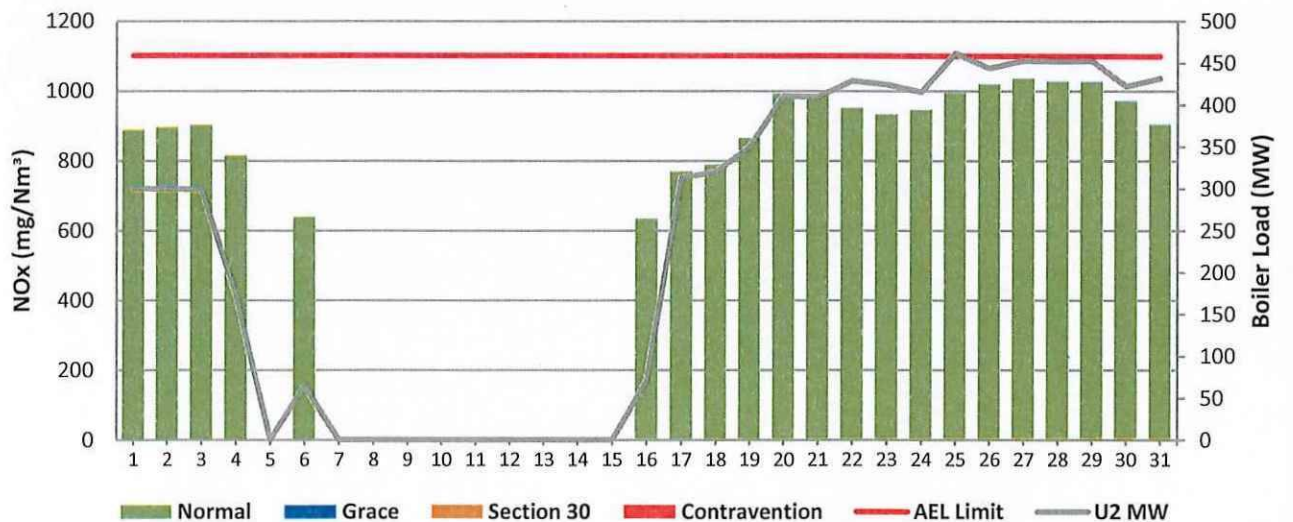


Figure 13: Duvha Unit 4 NO_x Emissions - August 2025

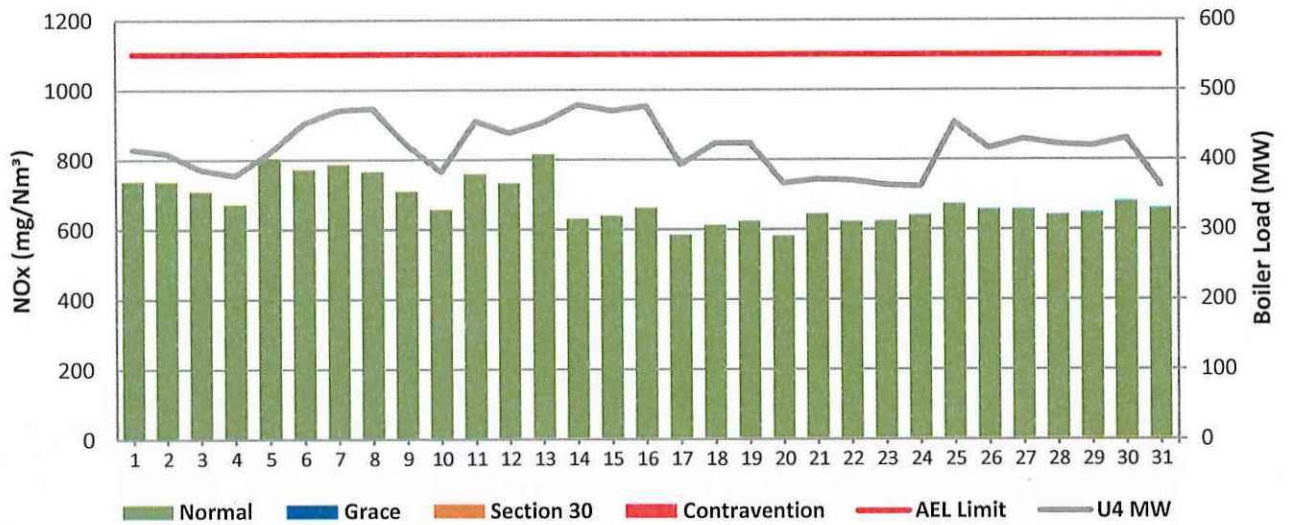


Figure 14: Duvha Unit 5 NO_x Emissions - August 2025

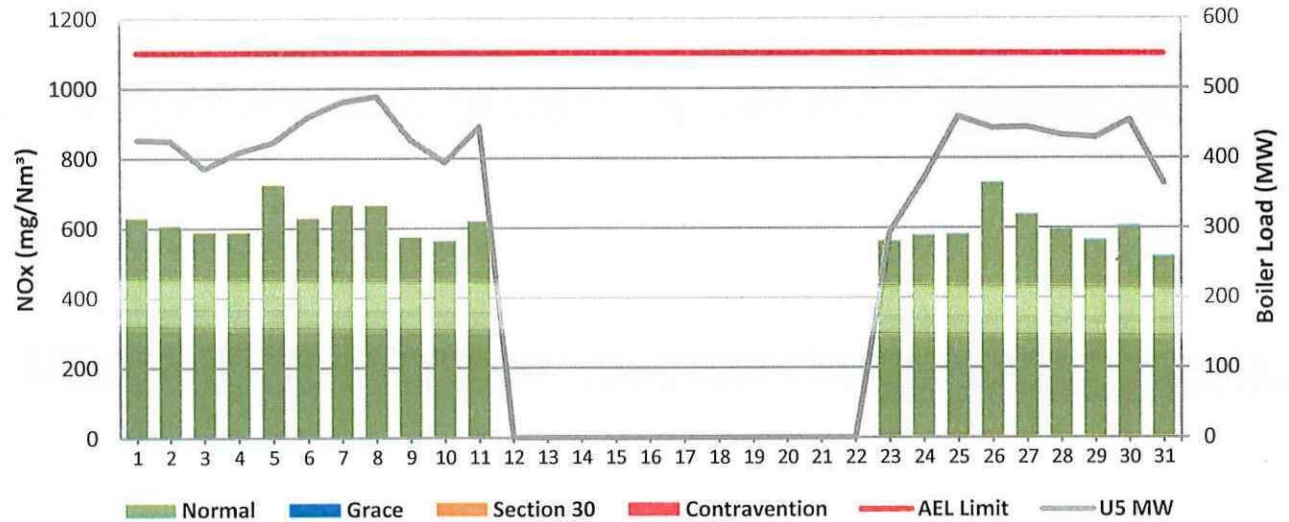
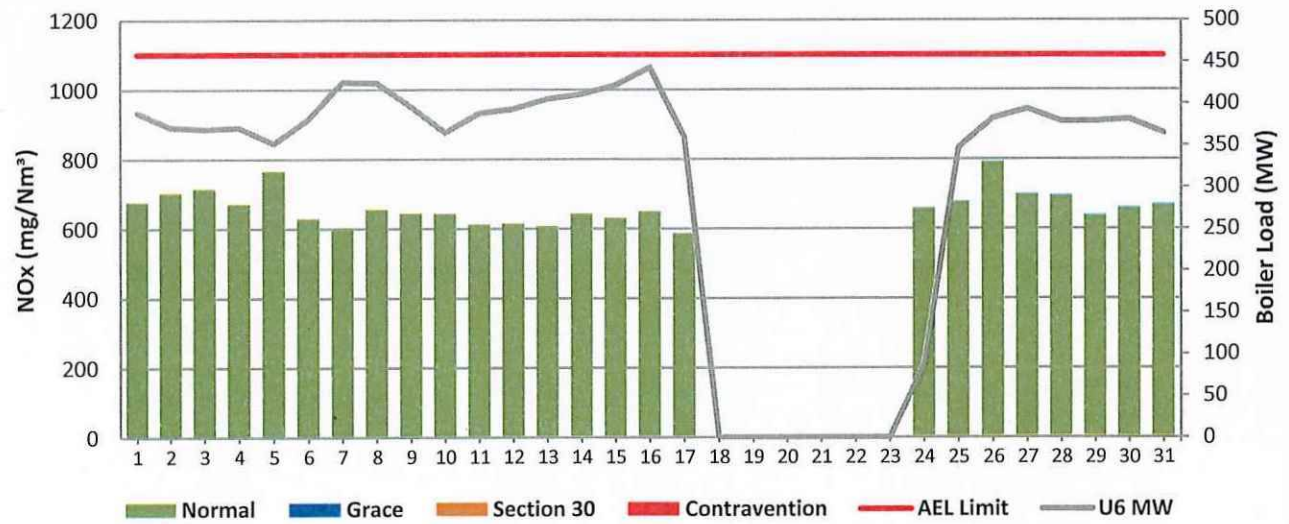


Figure 15: Duvha Unit 6 NO_x Emissions - August 2025



7. SHUT-DOWN AND LIGHT-UP INFORMATION FOR AUGUST 2025

	Event Description	Event 1		Event 2	
Unit 1	Breaker Open (BO)	BO previously	BO previously	7:30 pm	2025/08/28
	Draught Group (DG) Shut Down (SD)	n/a	n/a	12:30 pm	2025/08/29
	BO to DG SD (duration)	n/a	DD:HH:MM	00:17:00	DD:HH:MM
	Fires in time	12:45 am	2025/08/07	9:25 pm	2025/08/29
	Synch. to Grid (or BC)	11:45 am	2025/08/07	4:55 am	2025/08/30
	Fires in to BC (duration)	00:11:00	DD:HH:MM	00:07:30	DD:HH:MM
	Emissions below limit from BC (end date)	12:00 am	2025/08/09	12:00 am	2025/09/01
	Emissions below limit from BC (duration)	01:12:15	DD:HH:MM	01:19:05	DD:HH:MM

	Event Description	Event 1	
Unit 2	Breaker Open (BO)	1:55 pm	2025/08/04
	Draught Group (DG) Shut Down (SD)	10:00 am	2025/08/07
	BO to DG SD (duration)	02:20:05	DD:HH:MM
	Fires in time	9:45 am	2025/08/16
	Synch. to Grid (or BC)	4:35 pm	2025/08/16
	Fires in to BC (duration)	00:06:50	DD:HH:MM
	Emissions below limit from BC (end date)	12:00 am	2025/08/18
	Emissions below limit from BC (duration)	01:07:25	DD:HH:MM

	Event Description	Event 1	
Unit 6	Breaker Open (BO)	9:00 pm	2025/08/17
	Draught Group (DG) Shut Down (SD)	11:45 am	2025/08/19
	BO to DG SD (duration)	01:14:45	DD:HH:MM
	Fires in time	8:05 am	2025/08/24
	Synch. to Grid (or BC)	1:55 am	2025/08/25
	Fires in to BC (duration)	00:17:50	DD:HH:MM
	Emissions below limit from BC (end date)	12:00 am	2025/08/26
	Emissions below limit from BC (duration)	00:22:05	DD:HH:MM

8. COMPLAINS

There were no complains for this month.

Source Code / Name	Root Cause Analysis	Calculation of Impacts / emissions associated with the incident	Dispersion modelling of pollutants where applicable	Measures implemented to prevent reoccurrence

9. GENERAL

Exceedances:

Particulate Matter:

Unit 5

11/08/2025

There were high dust hoppers on the right-hand side of the dust handling plant caused by the dust hopper gates that were closed due to the right-hand side airlift vessels being blocked.

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

Unit 1

- There was multiple prolonged light up events (hot and cold unit light up).
- The unit was on half load to clean the A EFP coolers.

- There was a support combustion event while soot blowing the boiler.

Unit 2

- There was a Cold unit light up.
- The Unit was on half load due to B EFP oil that was contaminated.
- There was Support combustion while soot blowing the boiler.

Unit 4

- The unit was continuously supported by B1&B4 oil burner support due to unstable combustion and pyros.
- There was support combustion while soot blowing the boiler and testing of soot blower lances.

Unit 5

- The Mills were not available hence a continuous support of unstable combustion.
- There was a sold unit light up
- There was support combustion while soot blowing the boiler.

Unit 6

- The Mills were not available hence a continuous support of unstable combustion.
- There was an oil leak on the burner tips.
- There was support combustion while soot blowing the boiler.
- The unit had multiple light up events (Cold and hot unit light ups).

10. S30 Incidents Register

There were no Section 30 incidents for this month

<u>B Hlotshwayo</u>	<u>26/09/2025</u>	<u>[Signature]</u>	<u>2025/09/26</u>
Boiler Plant Engineering Manager	Date	Environmental Manager	Date

<u>M. MAMALELA</u>	<u>2025-09-26</u>
Engineering Manager	Date

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