

	Medupi Power Station Annual Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

Stanley Koenait

Date: 2024/04/26

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Ref: H16/1/13-AEL/M1/R1 Annual 2023/2024

Dear Mr Koenait

MEDUPI POWER STATION ANNUAL EMISSIONS REPORT

This serves as the Annual report required in terms of Section 7.7.3 of Medupi Power Station Provisional Atmospheric Emission License (AEL).

Table 1: Authorized list of Activities in terms of Section 21 (Government Notice No.893)

This report covers listed activities in terms of section 21 of AQA authorized to be conducted at the premises by the license holder. See table below for the Listed activity:

Category of Listed Activity	Sub-category of the Listed Activity	Description of the listed activity
1-Combustion Installations	1.1 -Solid Fuel combustion installations	Solid fuels combustion installations used primarily for steam raising or electricity generation.
2-Petroleum industry	2.4-Storage and handling of petroleum	Petroleum product storage tanks and product transfer facilities, except those under liquefied petroleum gas.
5-Mineral Processing, Storage, and handling	5.1 -Storage and Handling of ore and coal	Storage and handling of ore and coal not situated on premises of a mine or works as defined in mines healthy and safety Act 29/1996

1. The emissions Performance, Compliances Statistics and Spot/Verification tests annual Data Summaries 2023/2024 FY

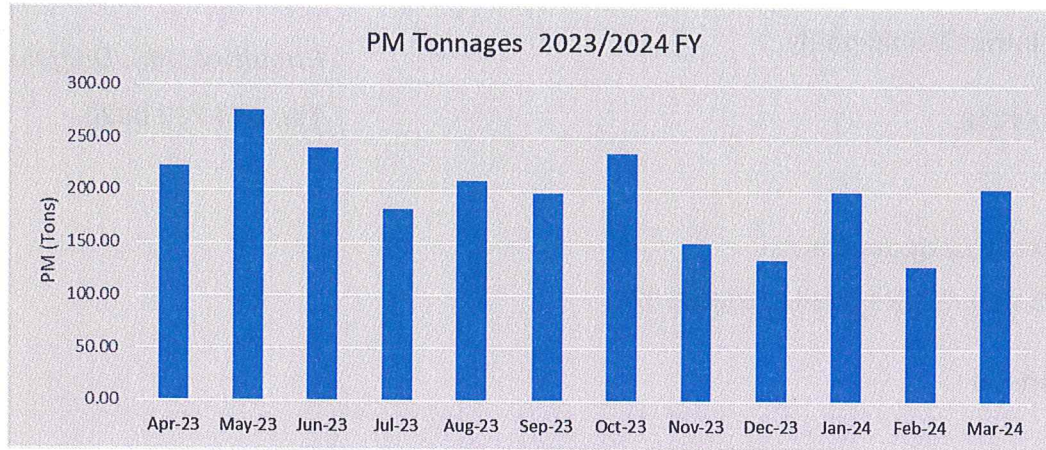


Figure 1: Unit 1-6 PM Tonnages

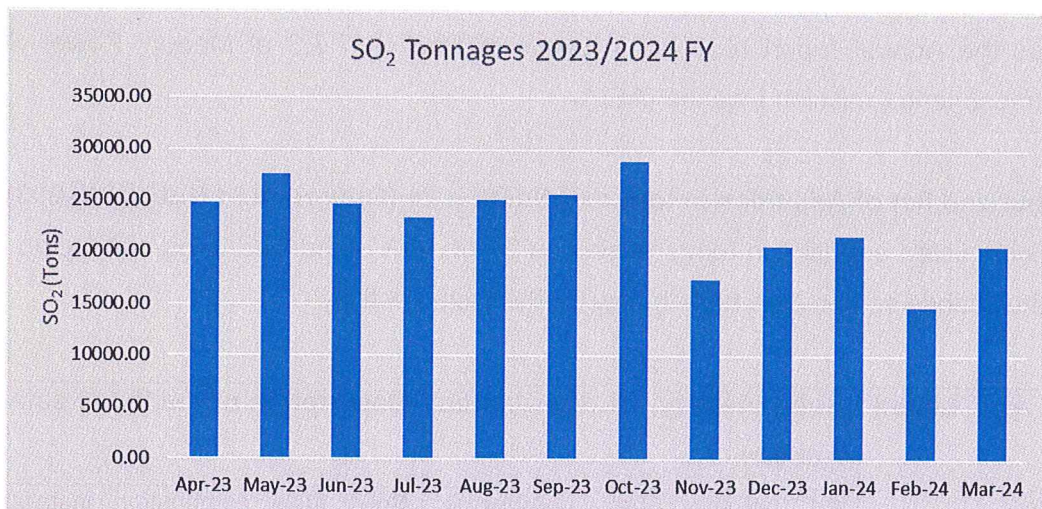


Figure 2: Unit 1-6 SO₂ Tonnages

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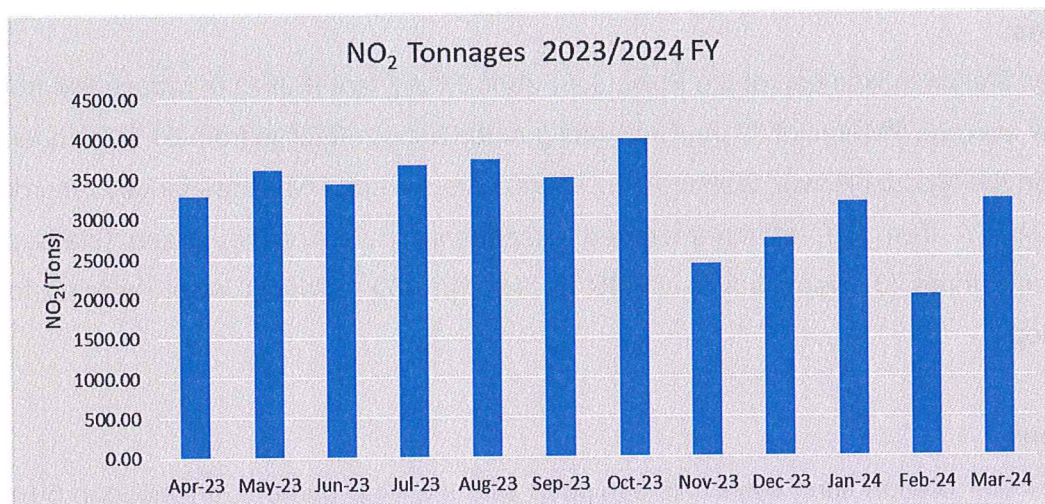


Figure 3: Unit 1-6 NO₂ Tonnages

2.1 Emissions Exceedances

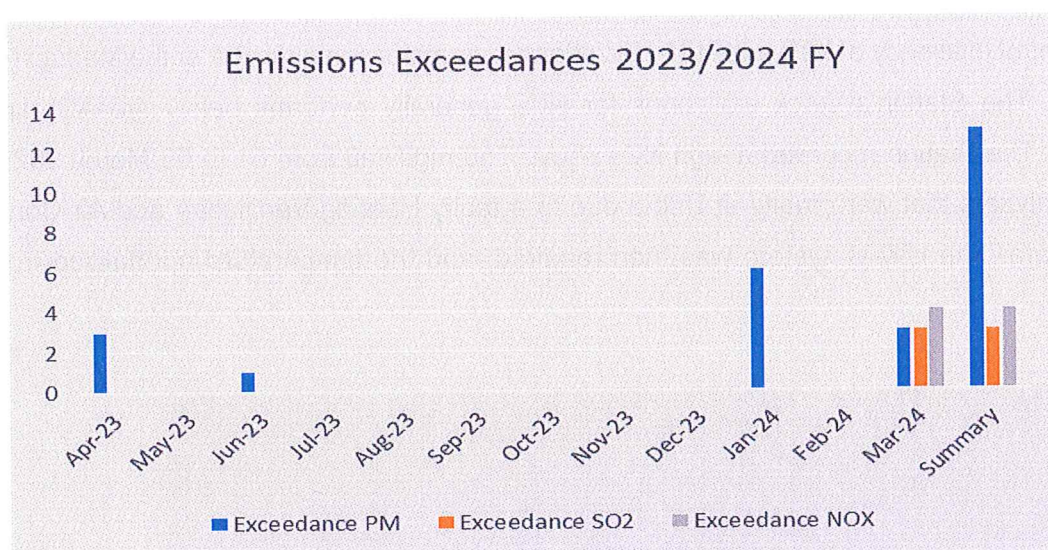


Figure 4: Stack Emissions Exceedances Unit 1 - 6

SO₂ Emissions

A monthly average SO₂ limit of 3500 mg/Nm³ was granted effective from 01 December 2020 as reflected on the Medupi Power Station AEL. SO₂ emissions are monitored and managed daily to ensure duty of care. There was a total of three (3) SO₂ exceedance of the 3500mg/Nm³ limit from 01-03 March 2024 at Unit 3. All the exceedances were due to the faulty analyzer.

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PM Emissions

Medupi Power Station makes use of the Pulse Jet Fabric Filter Plant (PJFF) to reduce PM from the stacks. A daily average PM limit of 50 mg/Nm³ was granted and is effective from 01 December 2020 as reflected on the Medupi Power Station AEL. There were several PM exceedances recorded for the 2023/2024 FY. Ten (10) of the recorded exceedances were within grace (start-up and shutdowns), and three (3) were due to CEMS issues. No s30 incidents were reported for this reporting period.

NO₂ Emissions

The Medupi Power Station firing system is equipped with low NO₂ burners, arranged in 5 rows of burners, and designed for normal operation with one standby-mill (4-mill operation), i.e., with 24 out of 30 burners. The Low NO₂ burners are designed to ensure efficiency and improved performance. This Abatement Equipment Control Technology (Low NO₂ Burners) is required to maintain a minimum control efficiency of 70% with 100 utilizations in terms of condition 7.1 of the Medupi Power Station AEL. The Station's stack emissions for NO₂ generally performs below the AEL limit of 750mg/Nm³. The Station recorded a high NO₂ above 750 mg/Nm³ from 01 to 03 March 2024 due to CEMS analyzers that were faulty at Unit 3 due to a faulty Heating Ventilation and Air Condition (HVAC) system. The HVAC system was then repaired, and the temperature normalised from 04 March 2024.

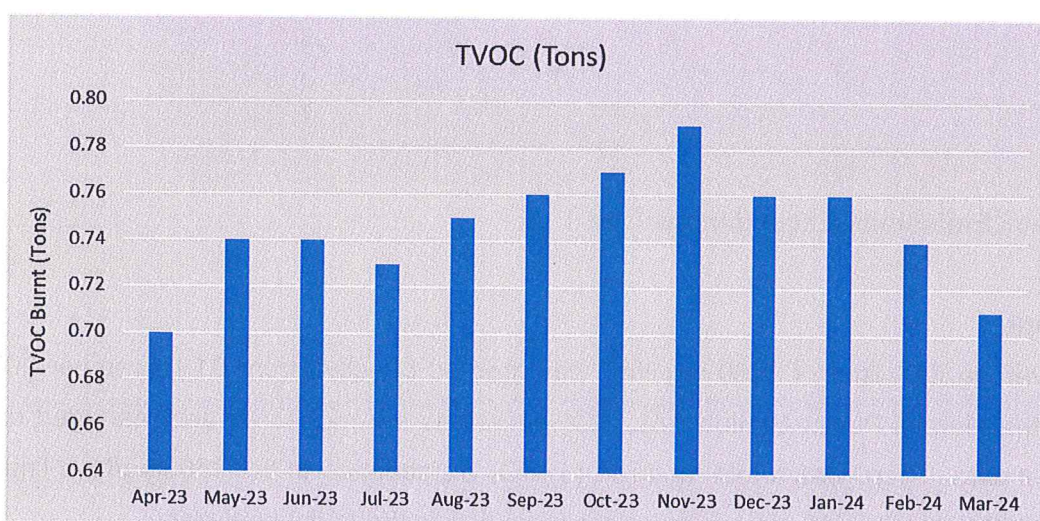


Figure 5: Fuel Oil Tank TVOC Emissions

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2.2 CEMS reliability (%) 2023/24 FY

Table 2: CEMS reliability

April 2023

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	99.3	99.3	99.3
Unit 2	99.9	99.9	99.7	99.7
Unit 3	100.0	99.8	99.8	98.4
Unit 4	Unit Off	Unit off	Unit off	Unit off
Unit 5	99.9	100.0	100.0	99.9
Unit 6	99.9	100.0	99.9	98.7

May 2023

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	98.7	99.8	99.8	99.2
Unit 2	98.9	99.7	99.7	99.7
Unit 3	98.2	96.0	95.9	19.7
Unit 4	Unit Off	Unit off	Unit off	Unit off
Unit 5	99.5	100.0	100.0	100.0
Unit 6	100.0	99.9	99.9	99.8

June 2023

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	99.7	99.6	99.6	98.9
Unit 2	99.2	99.5	99.5	99.2
Unit 3	99.7	99.4	99.4	99.6
Unit 4	Unit Off	Unit off	Unit off	Unit off
Unit 5	99.7	99.1	98.9	98.4
Unit 6	99.6	99.6	99.6	99.6

July 2023

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Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	99.7	99.3	99.2	98.4
Unit 2	99.5	99.6	99.6	99.6
Unit 3	99.5	99.6	99.6	99.6
Unit 4	Unit Off	Unit off	Unit off	Unit off
Unit 5	99.2	99.5	99.6	99.5
Unit 6	99.2	99.5	99.6	99.5

August 2023

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	99.3	99.3	99.3
Unit 2	99.9	99.9	99.7	99.7
Unit 3	100.0	99.8	99.8	98.4
Unit 4	Unit Off	Unit off	Unit off	Unit off
Unit 5	99.9	100.0	100.0	99.9
Unit 6	99.9	100.0	99.9	98.7

September 2023

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	96.7	96.7	96.7
Unit 2	100.0	97.4	97.4	97.1
Unit 3	100.0	96.5	96.5	90.1
Unit 4	Unit Off	Unit off	Unit off	Unit off
Unit 5	100.0	99.8	99.8	99.8
Unit 6	100.0	96.4	96.3	92.9

October 2023

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	100.0	99.7	99.7

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Unit 2	100.0	100.0	100.0	99.7
Unit 3	100.0	100.0	99.7	99.2
Unit 4	Unit Off	Unit off	Unit off	Unit off
Unit 5	100.0	99.9	99.9	99.7
Unit 6	100.0	99.2	99.2	96.4

November 2023

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	100.0	100.0	100.0
Unit 2	88.6	90.2	90.0	88.6
Unit 3	100.0	99.6	99.6	99.6
Unit 4	Unit Off	Unit off	Unit off	Unit off
Unit 5	99.6	98.0	98.0	97.4
Unit 6	99.0	99.5	99.5	99.5

December 2023

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	93.8	100.0	100.0	99.2
Unit 2	100.0	99.7	99.5	99.9
Unit 3	100.0	99.7	99.7	99.9
Unit 4	Unit off	Unit off	Unit off	Unit off
Unit 5	100.0	100.0	99.8	99.4
Unit 6	100.0	97.0	99.9	80.0

January 2024

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	95.1	95.1	96.9
Unit 2	99.2	95.6	93.1	98.3
Unit 3	99.2	98.8	98.1	97.7
Unit 4	Unit off	Unit off	Unit off	Unit off
Unit 5	Outage	Outage	Outage	Outage

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Unit 6	100.0	98.5	99.9	99.9
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February 2024

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	99.5	99.5	99.3
Unit 2	100.0	99.5	100.0	99.5
Unit 3	100.0	99.7	99.7	99.3
Unit 4	Unit off	Unit off	Unit off	Unit off
Unit 5	Outage	Outage	Outage	Outage
Unit 6	100.0	99.9	99.9	99.9

March 2024

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	92.4	92.8	92.3
Unit 2	100.0	99.6	99.8	98.5
Unit 3	96.2	96.0	99.6	94.4
Unit 4	Unit off	Unit off	Unit off	Unit off
Unit 5	Outage	Outage	Outage	Outage
Unit 6	100.0	99.5	99.1	99.3

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2.3 Ambient Air Quality

Eskom commissioned an ambient air quality monitoring station at Kroomdraai farm to assess background conditions of ambient air quality prior to the commissioning of Medupi Power Station and the impacts on the environment thereof. The Medupi site is equipped for continuous monitoring of ambient concentrations of sulphur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), fine particulate matter of sizes <10µm and <2.5 in diameter (PM₁₀ and PM_{2.5}). Ambient air quality monitoring is presented on a calendar year cycle (Jan 2023 to Dec 2023)

Table 3: Number of exceedances of the National Ambient Air Quality Limits for reporting period

Months	SO ₂ Hourly	SO ₂ Daily	SO ₂ 10-Minute	NO ₂ Hourly	PM ₁₀ Daily	PM _{2.5} Daily	O ₃ 8- Hourly
Jan-23	0	0	0	0	4	ND	0
Feb-23	0	0	0	0	1	ND	2
Mar-23	0	0	0	0	4	7	0
Apr-23	3	0	8	0	0	1	0
May-23	5	1	14	0	0	0	0
Jun-23	2	0	11	0	0	2	0
Jul-23	1	0	2	0	2	2	0
Aug-23	3	0	4	0	3	ND	17
Sep-23	2	0	4	0	4	ND	69
Oct-23	4	0	3	0	2	ND	42
Nov-23	0	0	4	0	3	ND	0
Dec-23	1	0	3	0	0	ND	ND
Total	21	1	53	0	23	12	130
Allow Number of exceedances	88	4	526	0	4	4	11

The number of exceedances for the PM₁₀ daily limit, PM_{2.5} daily, and O₃ 8-hourly moving average limit were above the allowable number of exceedances per year respectively, and therefore the site was in non-compliance with the respective national ambient air standards. The monitoring station has not been operating optimally from August 2023 and as such unable to record enough data for PM_{2.5} daily. Though exceedances of the SO₂ 10-min average, hourly, daily limits were recorded during monitoring period 2023 and were still below the respective allowable number of exceedances per year. There were no exceedances of the NO₂ hourly limit recorded from January 2023 to December 2023. Monitoring report for ambient air quality is submitted to the local authorities monthly.

Table 4: Ambient Air Quality Data January 2023 – December 2023

Parameter measured	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
PM _{2.5} (µg/m ³)	ND	ND	34.1	26.8	15.8	24.6	22.3	ND	ND	ND	ND	ND	25
PM ₁₀ (µg/m ³)	59.5	40.6	41.8	27.4	26.2	36.2	24.6	32.4	36.5	112.5	54.5	ND	45
CO (ppm)	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NO ₂ (ppb)	6.6	3.7	4.8	5.6	6.1	6.5	6	6.7	6.6	5.2	6.6	6.8	6
O ₃ (ppb)	14	21.2	20.3	28.7	22.4	25.3	28.3	35	42.4	39.2	32	35.3	29
SO ₂ (ppb)	6.6	4.9	9.5	16.6	15.1	13.1	9.4	14.1	14	12	20.5	15.2	13

Calculated annual concentrations for NO₂ and SO₂ monitored during the 2023 monitoring period were recorded below their respective annual ambient concentration limits. The calculated annual mean concentrations for PM₁₀ and PM_{2.5}, were above their annual limits of 40 µg/m³ and 20 µg/m³, respectively. Ambient PM₁₀, NO₂ and CO concentrations were contributed by emissions from low level sources, other industries, and tall stacks.

Note: Annual allowable exceedances are measured in a calendar year and as such this report contain the results for the period January 2023 to December 2023.

2.4 Dust Fall-out Monitoring.

Medupi Power Station dust monitoring network consists of 20 buckets which are collected and analysed within 30 +/- 3 days. The results for the reporting period April 2023 to March 2024 is depicted in figure 6 and it is evident that the dust management practice within the Power Station were a challenge during the windy season (Aug – Dec). Exceedances of Non-residential National Dust-fallout Regulation Limit (1200 mg/m²/days) were measured at the points indicated below.

Table 5: Fugitive Dust Buckets Exceedances

Monitoring Point	Number of Exceedances	Months and Dust fallout (mg/m ² /days)
D03	1	March 2024 = 1860 mg/m ² /d.
D15a	6	July 2023 = 1712 mg/m ² /d, Aug 2023 = 1873 mg/m ² /d, Sep 2023 = 1895 mg/m ² /d, Oct 2023 = 1474 mg/m ² /d, Nov 2023 = 1223 mg/m ² /d, and Dec 2023 = 1979 mg/m ² /d.
D13	2	Oct 2023 = 1645 mg/m ² /d, and Nov 2023 = 2046 mg/m ² /d.

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D5a	5	Aug 2023 = 1544 mg/m ² /d, Sep 2023 = 1525 mg/m ² /d, Oct 2023 = 2574 mg/m ² /d, Nov 2023 = 2496 mg/m ² /d, and Dec 2023 = 1555 mg/m ² /d.
D16	2	Oct 2023 = 1558mg/m ² /d, and Nov 2023 = 1501 mg/m ² /d.

Note: Medupi Power Station developed a dust management plan, and the measures are being implemented and monitored regularly to determine their effectiveness

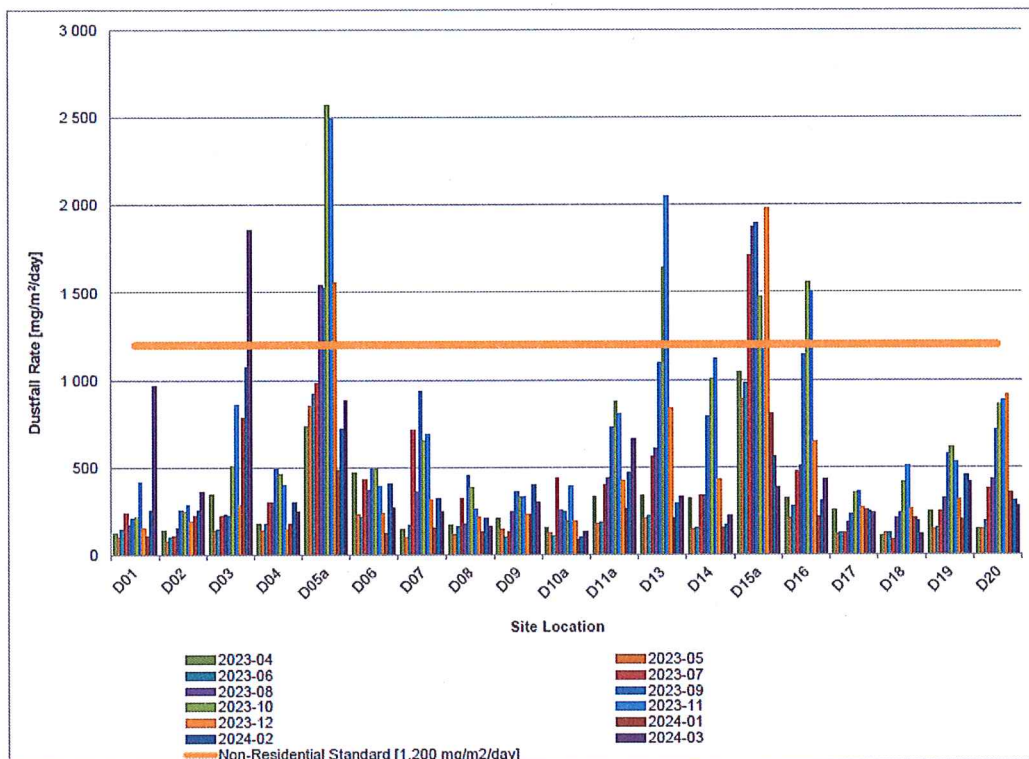


Figure 6: Fugitive Dust Emissions

2.5 Spot/verification/correlation/parallel test results

The following tests were conducted during the reporting period:

Table 6: Emissions pot/verification/correlation/parallel test results

Unit	Type of test	Date
1	Particulate Matter Monitor Correlation Measurements	May 2022
	Gaseous parallel Measurements	January 2023

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	Particulate Matter Monitor Spot Check Measurements	None
2	Particulate Matter Monitor Correlation Measurements	February 2023
	Gaseous parallel Measurements	November 2022
	Particulate Matter Monitor Spot Check Measurements	None
	Particulate Matter Monitor Correlation Measurements	January 2023
3	Gaseous parallel Measurements	October 2022
	Particulate Matter Monitor Spot Check Measurements	October 2022
	Particulate Matter Monitor Correlation Measurements	None
4	Gaseous parallel Measurements	None
	Particulate Matter Monitor Spot Check Measurements	None
	Particulate Matter Monitor Correlation Measurements	July 2022
5	Gaseous parallel Measurements	April 2023
	Particulate Matter Monitor Spot Check Measurements	May 2022
	Particulate Matter Monitor Correlation Measurements	August 2023
6	Particulate Matter Monitor Spot Check Measurements	March 2022
	Gaseous parallel Measurements	November 2022

3 Operation and Annual Data Summaries

3.1 Coal Consumption

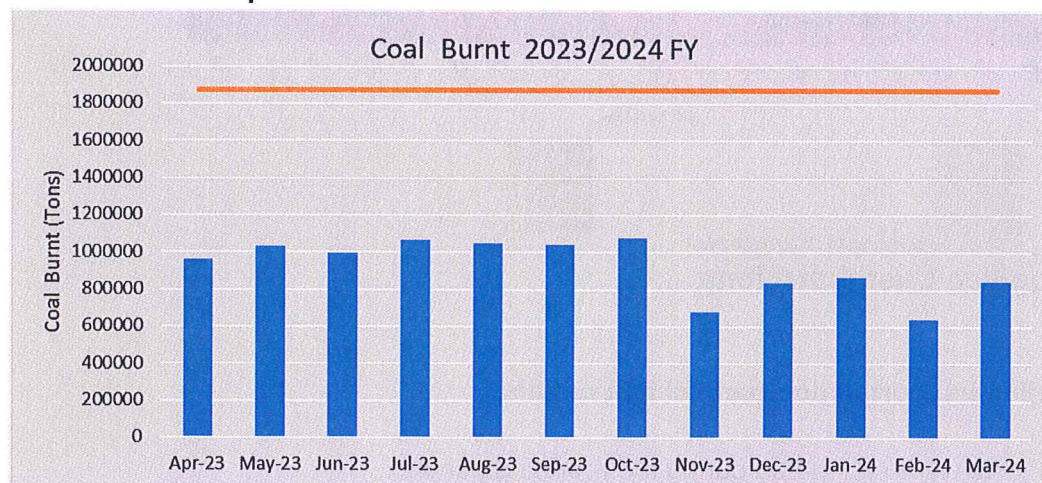


Figure 7: Medupi Power Station monthly coal consumption rate

Medupi Power Station AEL No. H16/1/13-AEL/M1/R1 prescribes limits for raw materials consumption for coal and fuel oil. The maximum allowable consumption rate for fuel oil and coal is

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20 000 and 1 875 000 tons per month respectively. Medupi Power Station coal consumption rate was well within the limit 1 875 000 tons/month as prescribed by the provisional AEL.

3.2 Fuel Oil consumption

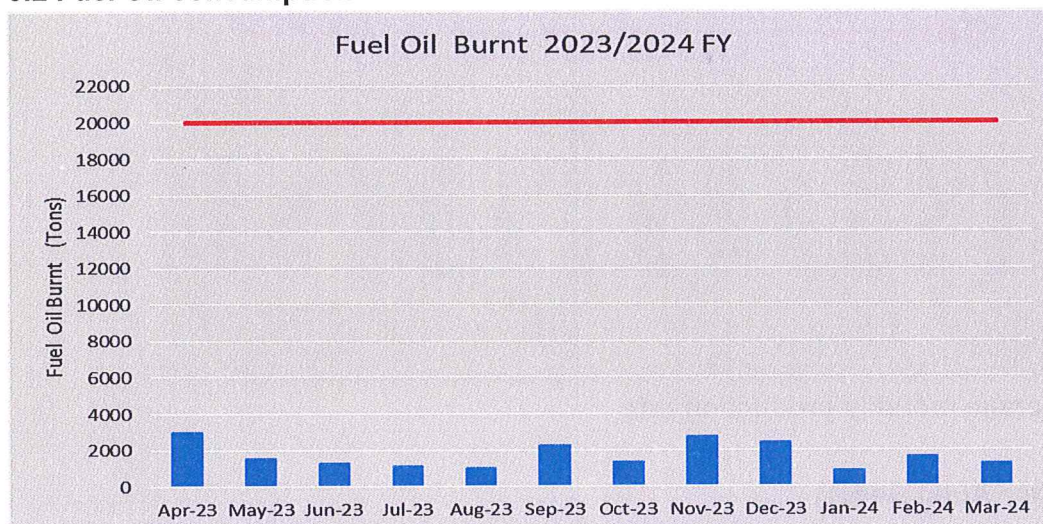


Figure 8: Medupi Power Station Fuel Oil Consumption

Medupi Power Station uses fuel oil during Unit light up, the maximum allowable tons of fuel oil to be used by Medupi Power Station is 20 000 tons/month. The Power Station monitors the monthly usage and report to Waterberg District Municipality (WDM), figure 8 indicates that the Power Station is complying with the requirements of the provisional AEL limit of 20 000 tons per month.

3.3 Production rates

The maximum licensed production capacity is limited to 4 800 MW. The power station remained within prescribed limit for the period between April 2023 and March 2024. For most of the months, the Units were operated with load losses to reduce particulate emissions.

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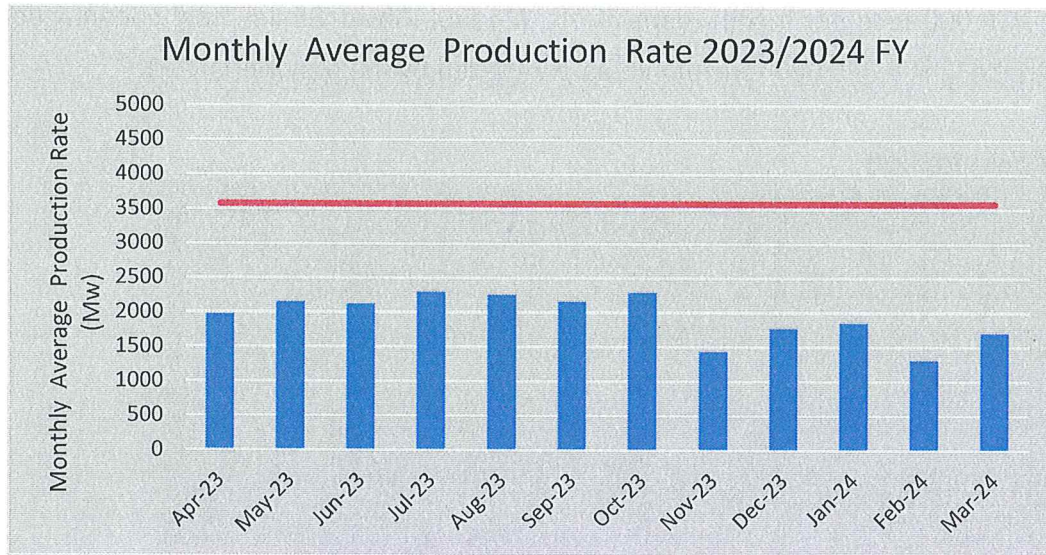


Figure 9: Average monthly production rate

4 Compliance Audit Report

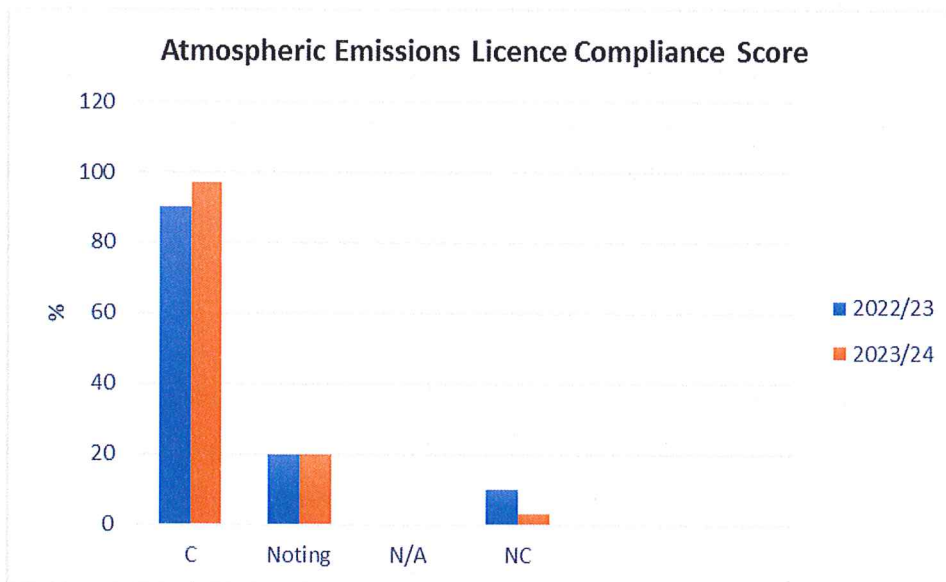


Figure 10: AEL Compliance status

Medupi Power Station monitors compliance to the provisional AEL conditions daily, and if a possible non-compliance is identified, relevant personnel within the Power Station are informed to address and/or prevent the non-compliance. The Authorities are notified of such non-compliances and action plan is then drafted, submitted, and implemented as required by the Medupi AEL. The AEL

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compliance score improved with 7% between the 2022/23 FY and 2023/24 FY. Status of the current open findings is indicated on Table 7 below.

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Table 7: Status of AEL Non-compliances from the External Audit of 2023/24 FY

	Condition	Finding /Non-Compliance	Recommendation	Target Date
4.1	The holder of the atmospheric emission License must ensure that all units, processes and apparatus used for the purpose of undertaking the listed activity in question, and all appliances and mitigation measures for preventing or reducing atmospheric emissions, are at all times properly maintained and operated.	According to the internal AEL Compliance Review compiled by the Department Air Quality Centre of Excellence (AQ CoE) in October 2023, all unit processes and apparatus used for the purpose of undertaking the listed activity and all appliances and mitigation measures for preventing or reducing atmospheric emissions are at all times properly maintained and operated in accordance to the relevant procedures and work instructions (WI). However, the station has been operating without an FGD plant for more than 6 years after the commissioning of the units. The project update indicates that the FGD Plant is scheduled for commissioning in September 2029.	Drive FGD implementation and ensure the project is executed	30 September 2029
4.8a.	The License Holder is responsible for quality assurance of methods and performance. Where the License Holder uses external laboratories for sampling or analysis, accredited laboratories shall be used.	The Station does not have proof of notification of the Interested and Affected Parties, to the effect that an AEL has been issued.	Submit a variation of the current Licence and once the new Licence is received then a notification will be sent to the I&AP registered during the variation process	30 December 2025
7.15	The License Holder shall, continuously operate, and maintain a flue gas desulphurization (FGD) plant for control of SO ₂ on all six units. The Flue Gas Desulphurization plant shall be retrofitted in each unit within six (06) years after first commissioning of each unit and during the General Overhaul outages	The Flue Gas Desulphurization (FGD) plant is not installed at the station, and it has been more than 06 years since the first unit was commission. Notwithstanding, a letter notifying the authorities regarding the change of construction dates, dated 03 September 2018	Drive FGD implementation and ensure the project is executed	30 September 2029

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5 Start-UP, Maintenance, Shutdowns or malfunction occurrence and duration annual Statics 2023/2024 FY

Table 8: Medupi Power Station Philosophy Outages (Planned Maintenance)

Units	Outage Description	Status	Actual Start Time	Actual End Time	Revised End Time
Unit 6	Generator Excitation Repairs	Completed	2023/04/26 23:17:00	2023/04/27 10:30:00	2023/04/27 09:17:00
Unit 1	3 Mills Min Gen Test 1	Completed	2023/04/28 00:00:00	2023/04/28 06:08:00	2023/04/28 08:00:00
Unit 1	HP Bypass leak repairs	Completed	2023/04/28 21:42:00	2023/04/30 12:38:00	2023/04/30 21:41:00
Unit 1	3 Mills Min Gen Test 2	Completed	2023/04/30 22:18:00	2023/05/01 04:54:00	2023/05/01 06:18:00
Unit 1	3 Mill Min Gen Test 4	Completed	2023/05/21 23:43:00	2023/05/22 06:24:00	2023/05/22 08:13:00
Unit 1	3 Mill Min Gen Test 3	Completed	2023/05/20 23:20:00	2023/05/21 06:52:00	2023/05/21 07:50:00
Unit 1	4 Mill Min Gen Test	Completed	2023/05/28 01:23:00	2023/05/28 05:09:00	2023/05/28 09:53:00
Unit 5	Bled Steam NRV Repairs	Completed	2023/06/14 21:50:00	2023/06/18 16:33:00	2023/06/19 11:50:00
Unit 1	SSC Repairs	Completed	2023/07/27 22:27:00	2023/07/29 01:06:00	2023/07/28 22:26:00
Unit 3	GAH washing & Repairs	Completed	2023/08/06 01:11:00	2023/08/15 17:25:00	2023/08/16 04:00:00
Unit 6	Correlation Test @ 80%	Completed	2023/08/25 21:45:00	2023/08/26 04:58:00	2023/08/26 03:44:00
Unit 6	Correlation Test @ 60%	Completed	2023/08/26 22:51:00	2023/08/27 08:09:00	2023/08/27 04:50:00
Unit 3	4 Mill Min Gen test	Completed	2023/09/09 22:00:00	2023/09/10 02:26:00	2023/09/10 06:00:00
Unit 6	Unit islanding @60% load	Completed	2023/09/23 00:17:00	2023/09/26 07:24:00	2023/09/23 04:16:00
Unit 6	Unit 6 Gen protection relay (P345) replacement & gland steam v/v replacement	Completed	2023/09/23 00:18:00	2023/09/26 07:24:00	2023/09/25 01:15:00

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Unit 1	Dummy Brush test @80%	Completed	2023/10/14 10:15:00	2023/10/14 14:46:00	2023/10/14 16:14:00
Unit 5	4 Mill Min Gen test	Completed	2023/10/15 22:10:00	2023/10/16 02:11:00	2023/10/16 06:10:00
Unit 1	Dummy Brush test @60%	Completed	2023/10/16 00:26:00	2023/10/16 04:08:00	2023/10/16 06:25:00
Unit 1	Dummy Brush test @80%	Completed	2023/10/21 22:11:00	2023/10/22 04:24:00	2023/10/22 04:10:00
Unit 1	60% Dummy Brush test	Completed	2023/10/23 00:11:00	2023/10/23 09:32:00	2023/10/23 08:11:00
Unit 1	Dummy Brush test @80%	Completed	2023/10/30 00:34:00	2023/10/30 04:55:00	2023/10/30 08:34:00
Unit 1	Dummy Brush test @60%	Completed	2023/10/29 04:20:00	2023/10/30 04:55:00	2023/10/29 12:20:00
Unit 1	Inspection	Completed	2023/11/03 01:58:00	2023/12/14 04:07:00	2023/12/15 01:57:00
Unit 5	Mini General Overhaul	In progress	2023/12/25 23:04:00		2024/05/10 23:03:00
Unit 6	Excitation Bridge 5 repairs	Completed	2024/03/06 22:19:00	2024/03/07 02:35:00	2024/03/07 02:19:00

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Table 9: Medupi Power Station Unit trips 2023/2024 FY

STARTDATE	REASON	ACTUALSTARTDATE	ACTUALENDDATE
2023/04/28 21:42:00	Unit shutdown for HP bypass monostat repairs	2023/04/28 21:42:00	2023/04/30 12:38:00
2023/05/07 09:33:00	M1 shutdown due to boiler tube leak.	2023/05/07 09:33:00	2023/05/15 10:13:00
2023/06/07 12:11:00	Unit 1 Turbine Tripped on DP HP Turbine Protection	2023/06/07 12:11:00	2023/06/07 13:03:00
2023/06/14 00:30:00	U1 shutdown due to HP turbine MCVB vickers valve replacement.	2023/06/14 00:30:00	2023/06/14 04:10:00
2023/06/25 02:35:00	Unit turbine tripped due to gen excitation system	2023/06/25 02:35:00	2023/06/25 07:05:00
2023/07/09 06:39:00	Unit 1 Boiler Trip on Loss of Both Draught Groups	2023/07/09 06:39:00	2023/07/09 12:36:00
2023/07/09 12:36:00	Faulty excitation field breaker	2023/07/09 12:36:00	2023/07/10 12:55:00
2023/07/14 02:17:00	U1 tripped on Boiler Air Ratio 1 & 2	2023/07/14 02:17:00	2023/07/14 09:41:00
2023/07/27 22:27:00	U1 shutdown for SSC repairs	2023/07/27 22:27:00	2023/07/29 01:06:00
2023/08/28 10:31:00	Faulty relay on HP bypass monostat.	2023/08/28 10:31:00	2023/08/28 15:11:00
2023/10/16 04:08:00	Unit 1 tripped on HP turbine stress	2023/10/16 04:08:00	2023/10/16 07:08:00
2023/11/03 01:58:00	Inspections	2023/11/03 01:58:00	2023/12/14 04:07:00
2023/12/15 14:18:00	Turbine loop oil pressure low.	2023/12/15 14:18:00	2023/12/15 18:45:00
2023/12/16 12:59:00	IP turbine stress	2023/12/16 12:59:00	2023/12/16 15:52:00
2024/01/17 23:52:00	Loss of Pyrometers	2024/01/17 23:52:00	2024/01/18 05:50:00
2024/01/28 19:52:00	Unit tripped due 11KV unit transformer fault	2024/01/28 19:52:00	2024/02/05 00:30:00
2024/02/10 00:23:00	Generator tripped due to bad signal conductivity on stator coolant	2024/02/10 00:23:00	2024/02/10 01:49:00
2024/02/12 01:50:00	Reheater outlet temp high	2024/02/12 01:50:00	2024/02/12 05:42:00
2024/02/22 16:45:00	Boiler Blow Down Level High	2024/02/22 16:45:00	2024/02/22 22:25:00
2024/02/23 00:20:00	Unit 1 tripped due to eco flow low	2024/02/23 00:20:00	2024/02/23 05:14:00
2024/03/08 02:36:00	Unit 1 Generator trip on Excitation fault	2024/03/08 02:36:00	2024/03/08 04:40:00

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2024/03/17 22:11:00	U1 shutdown due to SSC stuck	2024/03/17 22:11:00	2024/03/19 05:56:00
2023/05/06 02:04:00	Unit 2 Turbine Control Trip	2023/05/06 02:04:00	2023/05/06 05:01:00
2023/05/06 05:06:00	Unit 2 Turbine Control Trip	2023/05/06 05:06:00	2023/05/06 09:49:00
2023/05/11 08:56:00	Boiler tube leak	2023/05/11 08:56:00	2023/05/16 02:57:00
2023/05/16 03:22:00	Unit tripped due to IP turbine stress	2023/05/16 03:22:00	2023/05/16 04:33:00
2023/06/03 18:34:00	Turbine tripped due to Gen H2 inlet bypass CV deviation.	2023/06/03 18:34:00	2023/06/04 17:20:00
2023/06/24 14:05:00	U2 force shutdown for Boiler tube leak	2023/06/24 14:05:00	2023/06/28 16:11:00
2023/07/11 01:08:00	Unit 2 Turbine Trip on HP Stress	2023/07/11 01:08:00	2023/07/11 03:41:00
2023/09/18 18:51:00	Unit tripped due to bad signal on FD fan	2023/09/18 18:51:00	2023/09/19 05:48:00
2023/09/24 16:13:00	Reheater 2 outlet temp high	2023/09/24 16:13:00	2023/09/25 01:47:00
2023/10/22 22:37:00	U2 tripped due to distribution board UPS lack of voltage	2023/10/22 22:37:00	2023/10/23 04:34:00
2023/11/08 15:44:00	Unit shutdown due to tube leak(reheater1)	2023/11/08 15:44:00	2023/11/12 20:15:00
2023/11/12 20:15:00	Boiler Header Stub repairs	2023/11/12 20:15:00	2023/11/16 06:52:00
2023/11/16 09:01:00	Unit shutdown due to fuel oil temperature low	2023/11/16 09:01:00	2023/11/16 17:58:00
2023/12/11 21:12:00	Boiler Tube Leak repairs	2023/12/11 21:12:00	2023/12/22 04:32:00
2023/12/26 14:10:00	Turbine tripped on stress	2023/12/26 14:10:00	2023/12/26 18:05:00
2024/02/09 03:35:00	Gen leakage detector	2024/02/09 03:35:00	2024/03/09 08:50:00
2024/03/12 11:13:00	U2 shutdown due to GAH 2 guide bearing damaged.	2024/03/12 11:13:00	2024/03/15 19:10:00
2023/04/25 22:01:00	Unit 3 Boiler Tripped on loss of both draught groups	2023/04/25 22:01:00	2023/04/26 07:37:00
2023/05/06 02:48:00	SSC Chain repair	2023/05/06 02:48:00	2023/05/07 16:22:00
2023/05/22 12:38:00	Unit tripped due to ID fan suction pressure low	2023/05/22 12:38:00	2023/05/22 15:33:00
2023/07/07 00:35:00	Unit 3 Boiler tripped on No Draught Group in service	2023/07/07 00:35:00	2023/07/07 02:59:00
2023/08/06 01:11:00	GAS Air Heater Repairs and washing	2023/08/06 01:11:00	2023/08/15 17:25:00
2023/09/05 17:22:00	Unit 3 Boiler tripped due to no draught group in service	2023/09/05 17:22:00	2023/09/06 03:47:00
2023/10/08 15:29:00	Unit 3 Tripped on HP Turbine Stress after a failed Draught Group Capability	2023/10/08 15:29:00	2023/10/08 17:44:00

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2024/02/09 00:03:00	SSC Chain repair	2024/02/09 00:03:00	2024/02/11 13:49:00
2024/03/21 16:55:00	Unit 3 tripped due to loss of draught group.	2024/03/21 16:55:00	2024/03/21 22:14:00
2023/04/12 23:33:00	U5 shutdown due to SSC flights damaged	2023/04/12 23:33:00	2023/04/14 04:30:00
2023/04/14 04:30:00	Unit 5 shutdown due to Turbine Vibrations High	2023/04/14 04:30:00	2023/04/16 10:56:00
2023/06/14 21:50:00	Unit shutdown for Bled steam valve repair	2023/06/14 21:50:00	2023/06/18 16:33:00
2023/06/23 23:12:00	CCW leak repairs.	2023/06/23 23:12:00	2023/06/24 21:41:00
2023/09/04 08:23:00	SSC Repairs	2023/09/04 08:23:00	2023/09/05 10:30:00
2023/09/27 05:14:00	M5 Tripped due to turbine speed probes were faulty	2023/09/27 05:14:00	2023/09/27 20:14:00
2023/11/03 18:57:00	11KV U5 BRD 1 tripped	2023/11/03 18:57:00	2023/11/05 11:15:00
2023/11/05 11:29:00	Re-heater temp high	2023/11/05 11:29:00	2023/11/05 14:57:00
2023/11/05 20:09:00	Unit 5 tripped due to eco flow low.	2023/11/05 20:09:00	2023/11/06 03:10:00
2023/11/06 10:04:00	Unit 5 shutdown due to SSC Stuck	2023/11/06 10:04:00	2023/11/07 05:51:00
2023/11/11 13:50:00	U5 shutdown due to SSC off sprocket.	2023/11/11 13:50:00	2023/11/12 09:01:00
2023/11/18 17:45:00	Unit tripped due to reheater 1 outlet temp high.	2023/11/18 17:45:00	2023/11/18 17:49:00
2023/11/18 17:49:00	Boiler tube leak Repairs	2023/11/18 17:49:00	2023/11/20 23:49:00
2023/11/20 23:49:00	IP ESV oil leak repairs	2023/11/20 23:49:00	2023/11/22 14:33:00
2023/11/25 02:31:00	Unit 5 tripped on ID fan tripped	2023/11/25 02:31:00	2023/11/25 10:50:00
2023/11/26 02:26:00	Reheater 1 outlet temperature high.	2023/11/26 02:26:00	2023/11/26 14:13:00
2023/11/27 08:11:00	Reheater 1 outlet temperature high	2023/11/27 08:11:00	2023/11/27 21:46:00
2023/12/13 18:41:00	Turbine hydraulic oil pressure low.	2023/12/13 18:41:00	2023/12/15 00:12:00
2023/12/25 23:04:00	MGO	2023/12/25 23:04:00	
2023/04/01 04:39:00	Unit 6 Generator Protection System Trip	2023/04/01 04:39:00	2023/04/01 11:19:00
2023/04/01 19:04:00	Unit tripped due to turbine speed probe faulty	2023/04/01 19:04:00	2023/04/02 05:38:00
2023/04/02 07:01:00	Unit 6 Boiler Trip on SH3 Leg 3 Outlet Temp High	2023/04/02 07:01:00	2023/04/02 11:01:00
2023/04/02 17:03:00	Unit 6 Generator Trip on Excitation Fault	2023/04/02 17:03:00	2023/04/07 22:26:00

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2023/04/08 11:42:00	Unit shutdown for LHS GAH guide bearing inspection and repair	2023/04/08 11:42:00	2023/04/17 10:00:00
2023/04/17 12:31:00	Unit shutdown for LHS GAH guide bearing inspection and repair	2023/04/17 12:31:00	2023/04/17 13:08:00
2023/04/20 10:45:00	Unit 6 Generator Excitation Protection Trip	2023/04/20 10:45:00	2023/04/20 20:53:00
2023/04/24 07:46:00	Unit 6 Generator tripped on Excitation fault	2023/04/24 07:46:00	2023/04/24 17:20:00
2023/04/26 23:17:00	U6 shutdown due to AVR thyristor 5 repairs	2023/04/26 23:17:00	2023/04/27 06:17:00
2023/04/27 06:17:00	Boiler tripped on eco flow	2023/04/27 06:17:00	2023/04/27 10:30:00
2023/05/06 01:36:00	Unit 6 Generator Protection System Trip	2023/05/06 01:36:00	2023/05/06 14:50:00
2023/05/08 05:02:00	Unit 6 Generator Excitation Protection Trip	2023/05/08 05:02:00	2023/05/08 07:42:00
2023/05/10 10:39:00	U6 tripped on generator excitation	2023/05/10 10:39:00	2023/05/10 14:55:00
2023/05/11 01:18:00	Unit shutdown to reset excitation alarms	2023/05/11 01:18:00	2023/05/11 04:06:00
2023/05/11 06:04:00	U6 tripped on generator excitation	2023/05/11 06:04:00	2023/05/11 15:27:00
2023/05/12 22:28:00	U6 shutdown due to AVR repairs	2023/05/12 22:28:00	2023/05/13 03:39:00
2023/05/22 17:01:00	U6 tripped on generator excitation	2023/05/22 17:01:00	2023/05/23 05:59:00
2023/06/15 13:16:00	Unit 6 Turbine tripped on DP HP turbine after RH Reheat safety valves opened	2023/06/15 13:16:00	2023/06/15 17:32:00
2023/09/10 16:28:00	Unit 6 Tripped due to ACCCT LVL high	2023/09/10 16:28:00	2023/09/11 04:52:00
2023/09/23 00:17:00	Islanding test	2023/09/23 00:17:00	2023/09/23 00:18:00
2023/09/23 00:18:00	Gen protection relay & gland steam VM replacement	2023/09/23 00:18:00	2023/09/25 01:15:00
2023/09/25 01:15:00	Turbine barring disengaged	2023/09/25 01:15:00	2023/09/26 07:24:00
2023/10/02 05:30:00	Unit 6 Turbine Trip on Main Steam Temperature Rate of Change	2023/10/02 05:30:00	2023/10/02 06:24:00
2023/10/02 06:24:00	Superheater 2 header leak repairs	2023/10/02 06:24:00	2023/10/05 11:14:00
2023/10/05 14:37:00	Unit 6 Boiler tripped on Water Steam Cycle	2023/10/05 14:37:00	2023/10/05 21:31:00
2023/11/12 00:05:00	Unit 6 Turbine tripped on Generator Protection Trip	2023/11/12 00:05:00	2023/11/17 23:14:00
2023/12/06 15:50:00	U6 tripped for boiler air flow ratio	2023/12/06 15:50:00	2023/12/07 00:45:00
2023/12/07 00:55:00	HP turbine surface temperature probes faulty	2023/12/07 00:55:00	2023/12/07 03:57:00
2024/02/27 01:30:00	Turbine Cooling stress	2024/02/27 01:30:00	2024/02/27 22:52:00

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2024/03/04 13:37:00	ID fan suction pressure low	2024/03/04 13:37:00	2024/03/05 05:16:00
2024/03/06 22:19:00	Excitation bridge 5 repairs	2024/03/06 22:19:00	2024/03/07 02:35:00
2024/03/26 00:50:00	U6 tripped due to HP exhaust temperature high.	2024/03/26 00:50:00	2024/03/26 02:16:00

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6 Conclusion

In general, Medupi Power Station complies with most of the requirements of the AEL issued in terms of Section 40(1) (a) of the National Environmental Management: Air Quality Act, 2004, listed activity No. 1.1, 2.4 and 5.1.

There was no major upgrade on the plant for the reporting period. Medupi Power Station has identified areas of improvement in order to avoid legal contraventions, prevent significant environmental impact. Action plans have been developed to improve compliance and actions are tracked on an on-going basis.

There were no recommendations received from the authorities regarding any non-compliance or potential non-compliance.

Yours sincerely

Compiled by:



Ramokone Makgoka

MEDUPI POWER STATION: ENVIRONMENTAL MANAGEMENT OFFICER

Reviewed by:



Thabo Khoza

MEDUPI POWER STATION: ENVIRONMENTAL MANAGEMENT SENIOR ADVISOR

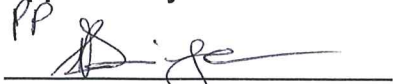
Supported by:



Mokgadi Dikgale

MEDUPI POWER STATION: ENVIRONMENTAL MANAGEMENT MANAGER

Approved by:



Zweli Witbooi

MEDUPI POWER STATION: GENERAL MANAGER