



Ms Mpho Nembilwi
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Date

Aug 2022

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Ref *Kusile Power Station AEL (17/4/AEL/MP311/12/01)*

Dear Ms Nembilwi

KUSILE POWER STATION'S MONTHLY EMISSIONS REPORT FOR JULY 2022

This serves as the monthly report required in terms of Section 7.6 in Kusile Power Station's Atmospheric Emission License 17/4/AEL/MP311/12/01. The emissions are for the month of July 2022.

Hoping the above will meet your satisfaction

Yours sincerely

Bongumusa A Mashazi
GENERAL MANAGER
DATE: 29/08/2022

1. KUSILE POWER STATION MONTHLY EMISSIONS REPORT: Atmospheric Emission License 17/4/AEL/MP311/12/01



2 Raw Materials and Products

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Jul-2022
	Coal	Tons	1 818 083	596 755
	Fuel Oil	Tons	5 533	1582,26
	Limestone	Tons	72 917	23008

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jul-2022
	Energy	GWh	3321,216	1 279,52
	Ash	Tons	663 583	171 089,6
	Gypsum	Tons	129 250	12 884,5
	RE PM	kg/MWh	not specified	0,044
	RE SO ₂	kg/MWh	not specified	1,531

3 Energy source characteristics

Fuel Characteristic	Units	Stipulated Range	Monthly Average Content
Coal CV	MJ/kg	not specified	21,330
Coal Sulphur	%	1,3	1,180
Ash in Coal	%	38	28,670

4 Emissions Limits (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
North	50	500	750
South	50	500	750

5 Abatement Technology (%)

Associated Unit/Stack	Technology Type	Efficiency Jul-2022	Technology Type	Efficiency Jul-2022
Unit 1	FFP	99,983%	FGD	90,216%
Unit 2	FFP	99,955%	FGD	96,136%
Unit 3	FFP	99,968%	FGD	89,258%

Note Both the FFP and FGD does not have bypass mode operation, hence plant 100% Utilised

6. Monitoring reliability (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	40,5	99,5	99,2	99,2
Unit 2	42,9	100,0	87,1	87,7
Unit 3	99,8	94,1	73,1	93,1
Unit 4	100,0	99,3	100,0	100,0

7. Emissions Performance

Table 7 1. Monthly tonnages for the month of July-2022

Associated Unit/Stack	PM	SO ₂	NO _x	CO ₂
Unit 1	7,2	842	762	448 888
Unit 2	14,8	106	200	109 475
Unit 3	25,3	698	499	382 445
Unit 4	0,0	0	0	0
Unit 5	0,0	0	0	0
Unit 6	0,0	0	0	0
SUM	47,3	1 646	1 461	940 808

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Table 7.2: Operating days in compliance to PM AEL Limit - July 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	29	0	0	0	0	4,2
Unit 2	14	0	0	0	0	26,0
Unit 3	29	0	0	0	0	18,4
Unit 4	0	0	0	0	0	0
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	72	0	0	0	0	





Table 7.3: Operating days in compliance to SO₂ AEL Limit - July 2022

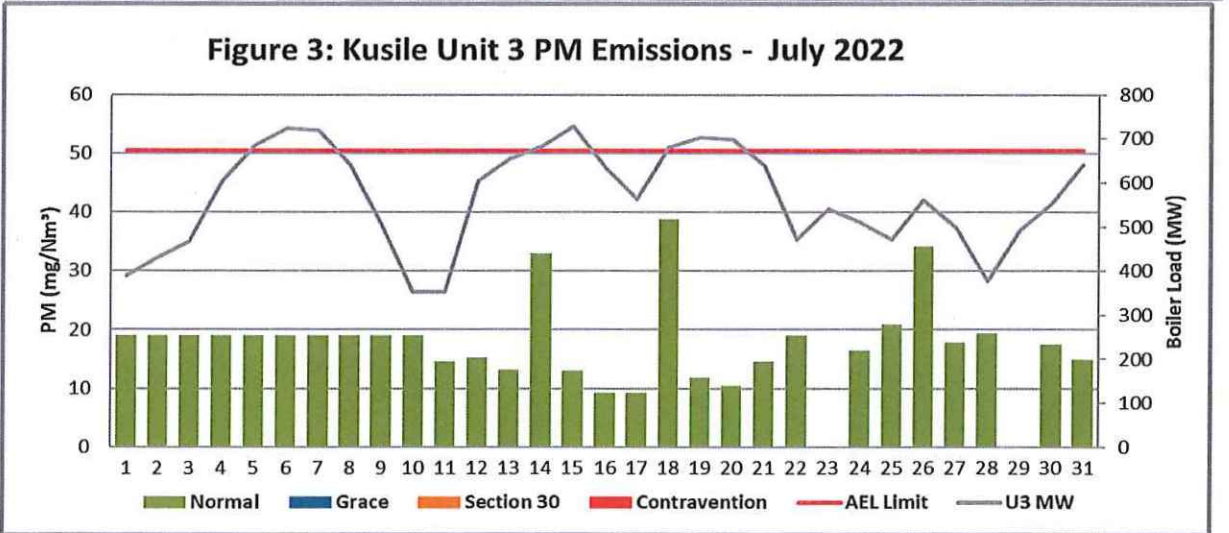
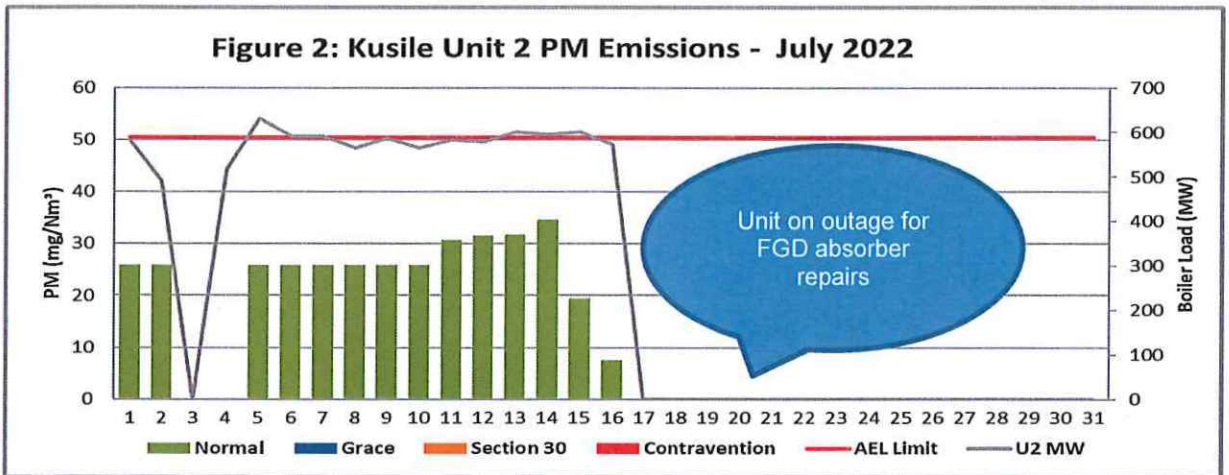
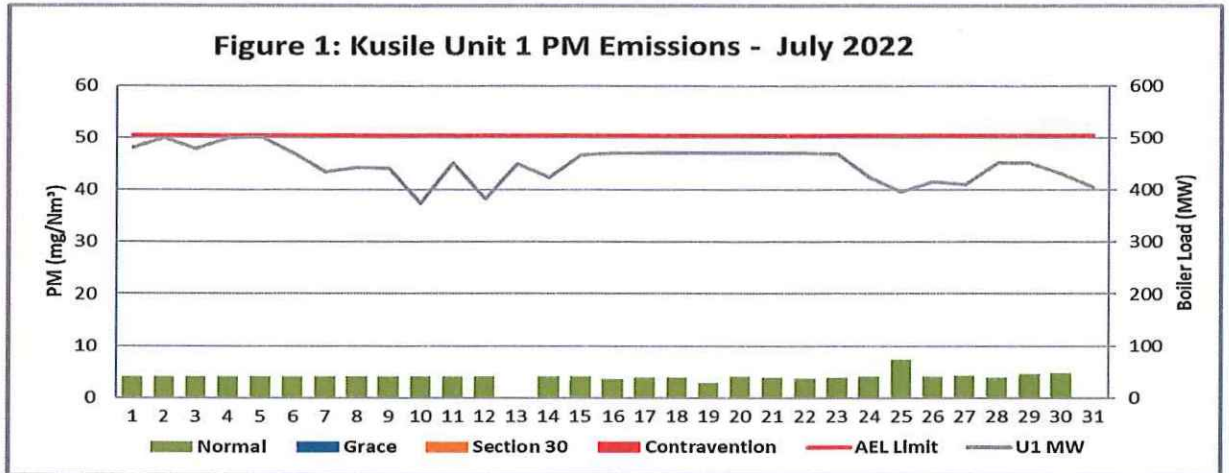
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	24	7	0	0	7	400,9
Unit 2	14	1	0	0	1	240,1
Unit 3	22	7	2	0	9	409,1
Unit 4	0	0	0	0	0	0
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	60	15	2	0	17	

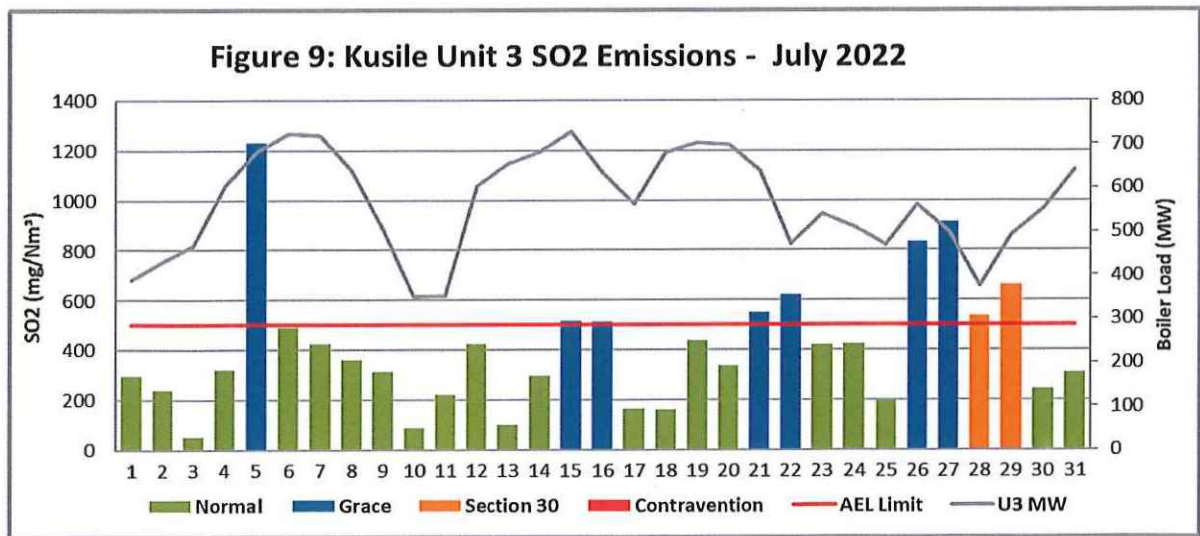
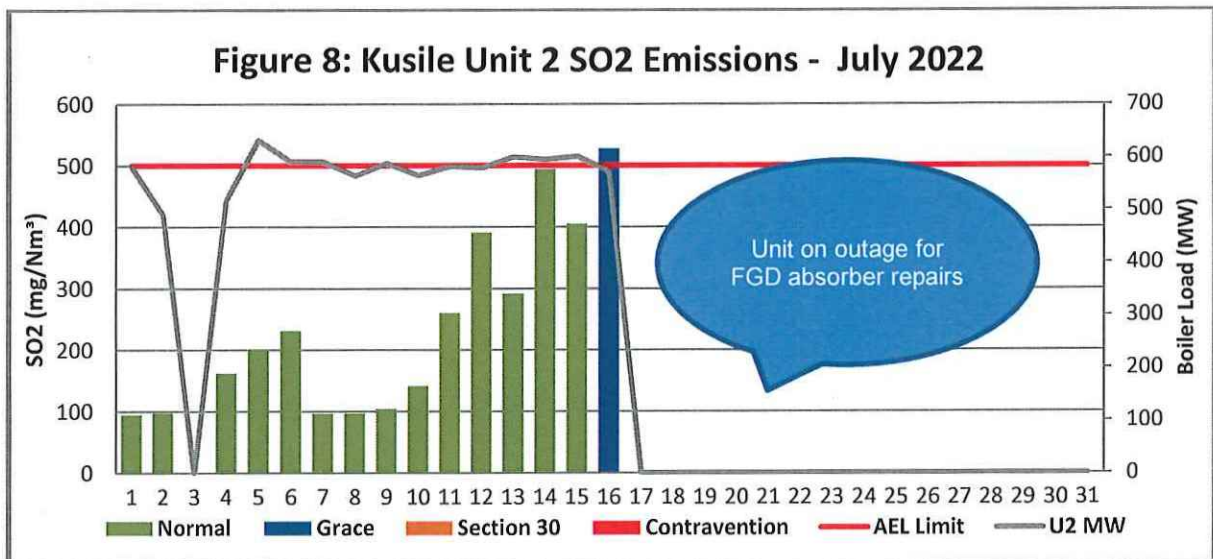
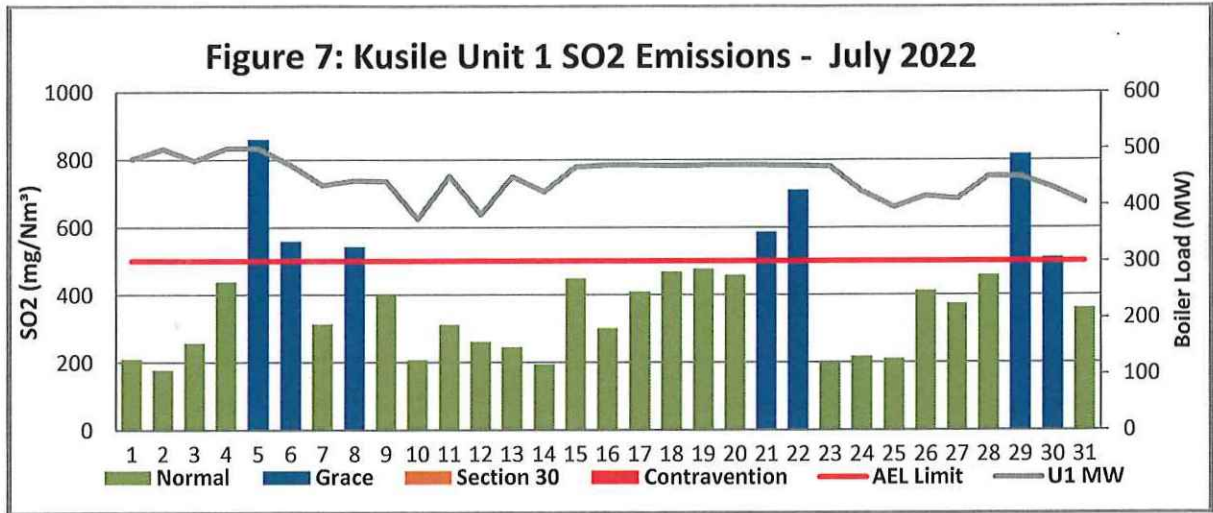
Table 6.4: Operating days in compliance to NO_x AEL Limit - July 2022

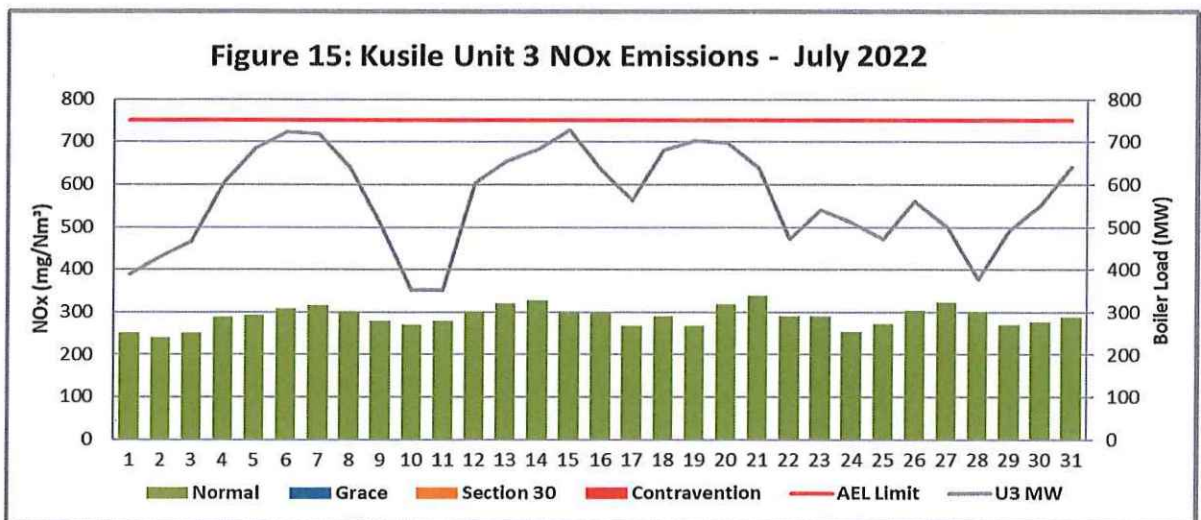
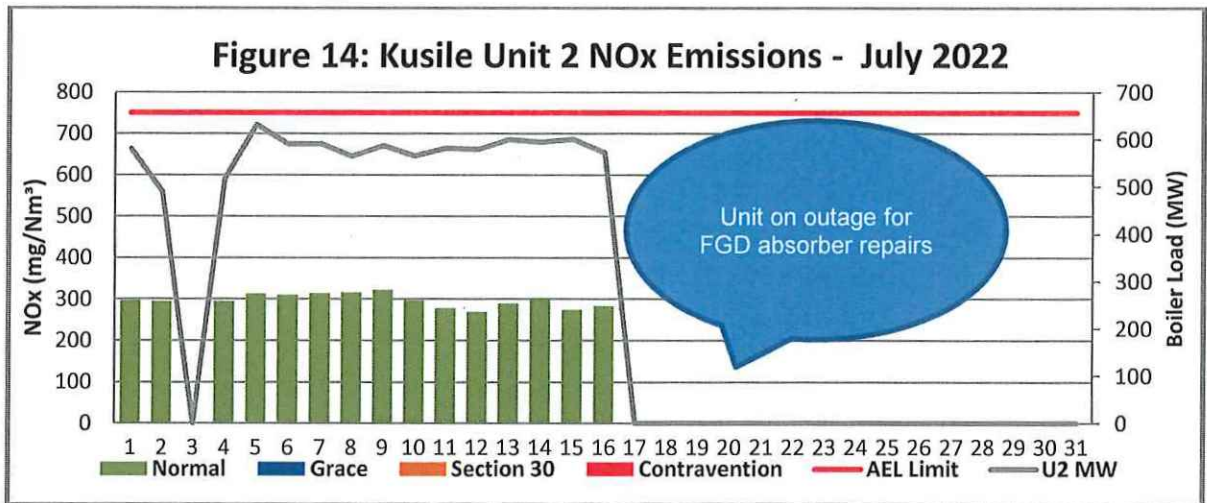
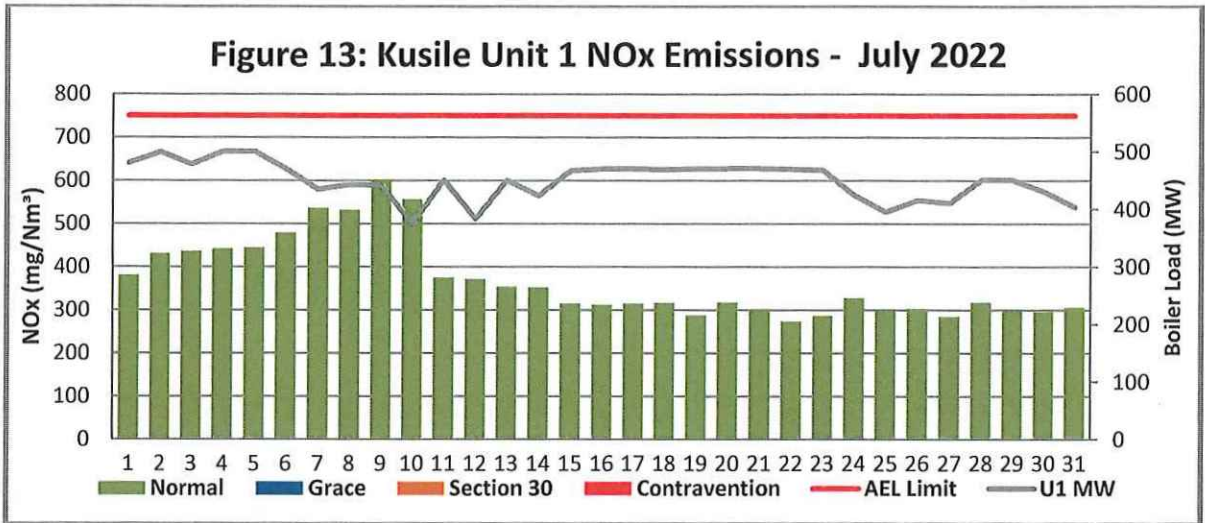
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	31	0	0	0	0	369,8
Unit 2	15	0	0	0	0	297,5
Unit 3	31	0	0	0	0	289,5
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	77	0	0	0	0	

Table 7.5: 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







8. Shut down and Light up information

Unit No. 1	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	6 55 am	2022/07/10	5 20 am	2022/07/12	2 30 pm	2022/07/25	10 35 pm	2022/07/30
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	5 20 am	2022/07/12	DG did not trip or SD	DG did not trip or SD	10 35 pm	2022/07/30
BO to DG SD (duration)	n/a	DD HH MM	00 00 00	DD HH MM	n/a	DD HH MM	30 22 35	DD HH MM
Fires in time	10 02 am	2022/07/10	11 30 pm	2022/07/13	9 45 am	2022/07/25		
Synch. to Grid (or BC)	4 45 pm	2022/07/10	4 15 pm	2022/07/14	2 45 pm	2022/07/25		
Fires in to BC (duration)	00 06 42	DD HH MM	00 16 45	DD HH MM	00 05 00	DD HH MM		DD HH MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit		
Emissions below limit from BC (duration)	n/a	DD HH MM	n/a	DD HH MM	n/a	DD HH MM		DD HH MM

Unit No. 2	Event 1		Event 2	
Breaker Open (BO)	5 50 pm	2022/07/02	1 35 am	2022/07/16
Draught Group (DG) Shut Down (SD)	5 50 pm	2022/07/02	4 35 am	2022/07/16
BO to DG SD (duration)	00 00 00	DD HH MM	00 03 00	DD HH MM
Fires in time	6 32 am	2022/07/04		
Synch. to Grid (or BC)	12 10 pm	2022/07/04		
Fires in to BC (duration)	00 05 37	DD HH MM		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		DD HH MM

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Unit No. 3	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	2 25 pm	2022/07/12	10 50 am	2022/07/17	6 05 pm	2022/07/22	8 35 am	2022/07/26
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	8 35 am	2022/07/26
BO to DG SD (duration)	n/a	DD HH MM	n/a	DD HH MM	n/a	DD HH MM	00 00 00	DD HH MM
Fires in time			12 11 pm	2022/07/17	6 47 pm	2022/07/22	10 46 am	2022/07/26
Synch. to Grid (or BC)			3 35 pm	2022/07/17	3 15 am	2022/07/23	2 40 pm	2022/07/26
Fires in to BC (duration)		DD HH MM	00 03 23	DD HH MM	00 08 28	DD HH MM	00 03 53	DD HH MM
Emissions below limit from BC (end date)			not > limit	not > limit	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)		DD HH MM	n/a	DD HH MM	n/a	DD HH MM	n/a	DD HH MM

9. Complaints

One complaint was received during the month of 18 July 2022. A site visit was done by Department of Forest Fishery and Environmental on 19 July 2022 and investigation was done and reports submitted to DFFE and your office.

Date and time complaint was received	Complaint received	Source code name	Root cause analysis	Calculation of impact/emissions associated with incidents and dispersion modelling of pollutants where applicable.	Measures implemented or to be implemented to prevent recurrence	Date by which measures will be implemented
On 18/07/22 at around 11h00 a call was received from DFFE regarding a complaint lodged against Kusile Power Station (The complaint was lodged anonymously through DFFE hotline)	Cloud of ash observed from Kusile Power Station	N/A	Erosion on ash conveying line that caused a leak on the line	N/A	A spare was sourced to repair the leaking ash conveying line Install cage arresters on the Pulse Jet Fabric Filter Plant (PJFFP) hoppers Conduct thickness test on the conveying line	Completed 30 Sep 2022 30 Oct 2022

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					bends	
					Install lagging and cladding to prevent condensation from taking place in the compress airline	30 December 2022
					Commissioning of the ash silo lifting equipment and passenger lift	30 Nov 2022