



Ms Mpho Nembilwi
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Date:

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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 SEPTEMBER 2021

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 September 2021.

Hoping the above will meet your satisfaction.

Yours sincerely

Bongumusa A. Mashazi
GENERAL MANAGER
DATE: 2021/11/04

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 Sep-2021
	Coal	Tons	1 818 083	517 693
	Fuel Oil	Tons	5 533	4872,83
	Limestone	Tons	72 917	15447

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Sep-2021
	Energy	GWh	3214,08	713,77
	Ash	Tons	663 583	152 098,2
	Gypsum	Tons	129 250	8 650,0
	RE PM	kg/MWh	not specified	0,053
	RE SOx	kg/MWh	not specified	1,453

3 Energy source characteristics

Fuel Characteristic	Units	Stipulated Range	Monthly Average Content
Coal CV	MJ/kg	not specified	21,130
Coal Sulphur	%	1,3	0,750
Ash in Coal	%	38	29,380

4 Emissions Limits (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NOx
North	50	500	750
South	50	500	750

5 Abatement Technology (%)

Associated Unit/Stack	Technology Type	Efficiency Sep-2021	Technology Type	Efficiency Sep-2021
Unit 1	FFP	99,980%	FGD	70,630%
Unit 2	FFP	99,978%	FGD	90,024%
Unit 3	FFP	99,950%	FGD	87,144%
Unit 4	FFP		FGD	
Unit 5	FFP		FGD	
Unit 6	FFP		FGD	

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	CO ₂	O ₂
Unit 1	8,8	81,3	79,3	80,5	79,5
Unit 2	100,0	79,7	81,3	92,9	81,4
Unit 3	72,3	94,2	89,1	91,7	85,9
Unit 4					
Unit 5					
Unit 6					

The monitor reliability for Unit 1 and 3 PM were affected and the following action were put in place:

Issue	Action	Responsible Person	Status
Unit 1 – PM Monitor temperature tea was damaged resulting in low temperature (Temperature tea and heater chamber replaced – the temperature did not improve)	Replace the PM monitor	C&I Maintenance Manager	Complete
Unit 3 - Purge line was blocked.	Purge line was unblocked.	C&I Maintenance Manager	Complete

7. Emissions Performance

Table 7.1: Monthly tonnages for the month of September-2021

Associated Unit/Stack	PM	SO _x	NO _x	CO ₂
Unit 1	5,6	410	378	275 460
Unit 2	14,0	317	760	363 216
Unit 3	18,3	310	548	257 163
Unit 4	0,0	0	0	0
Unit 5	0,0	0	0	0
Unit 6	0,0	0	0	0
SUM	37,9	1 037	1 687	895 839

Table 7.2: Operating days in compliance to PM AEL Limit - September 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	15	0	0	0	0	5,6
Unit 2	29	0	0	0	0	7,2
Unit 3	20	0	0	0	0	15,5
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	64	0	0	0	0	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - September 2021

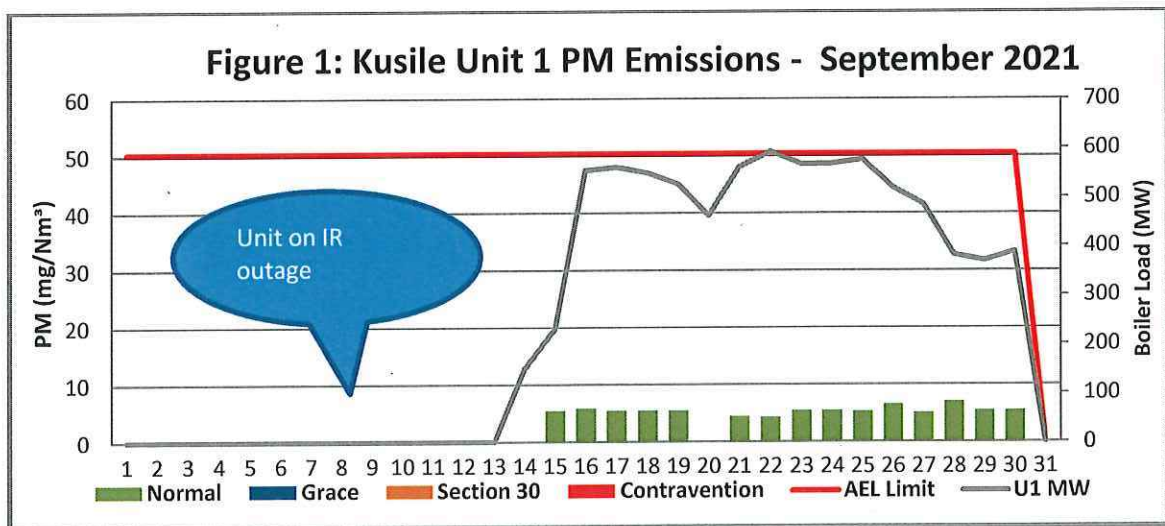
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	16	1	0	0	1	299,1
Unit 2	30	0	0	0	0	156,3
Unit 3	19	3	0	0	3	223,5
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	65	4	0	0	4	

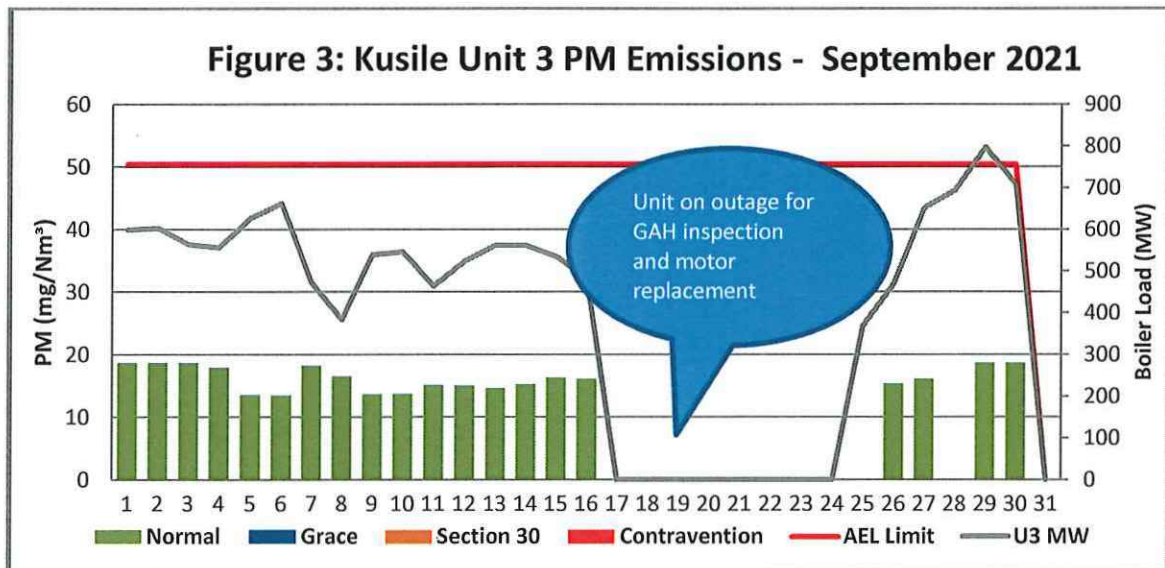
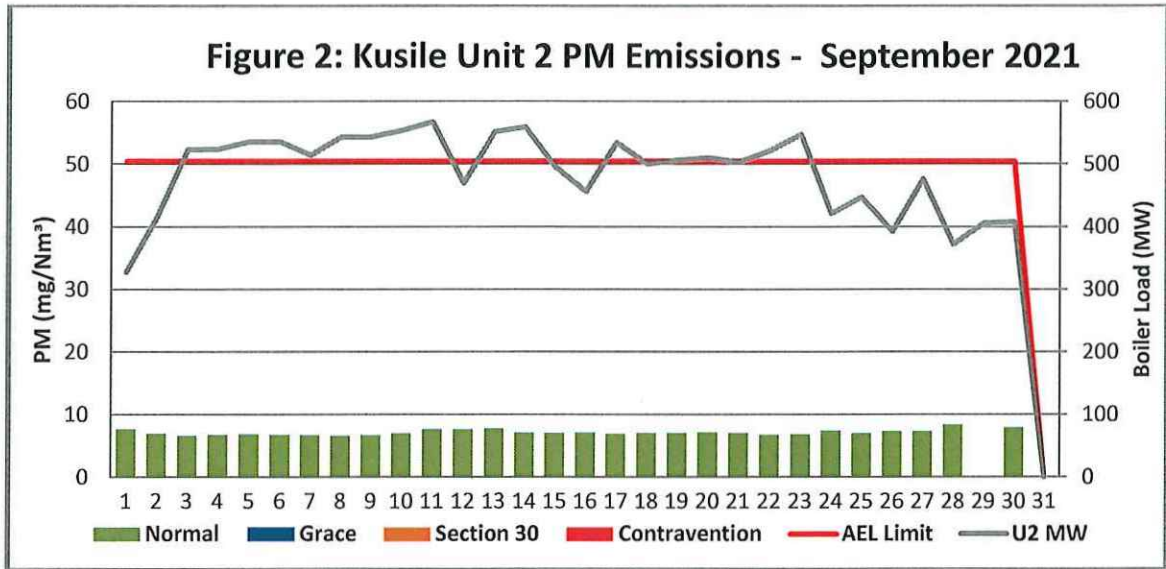
Table 7.4: Operating days in compliance to NOx AEL Limit - September 2021

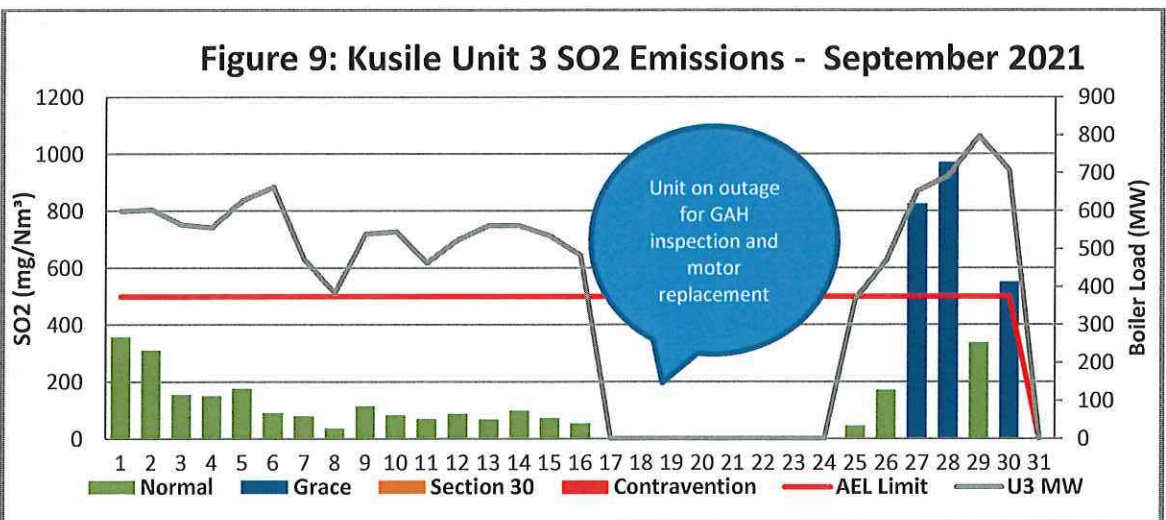
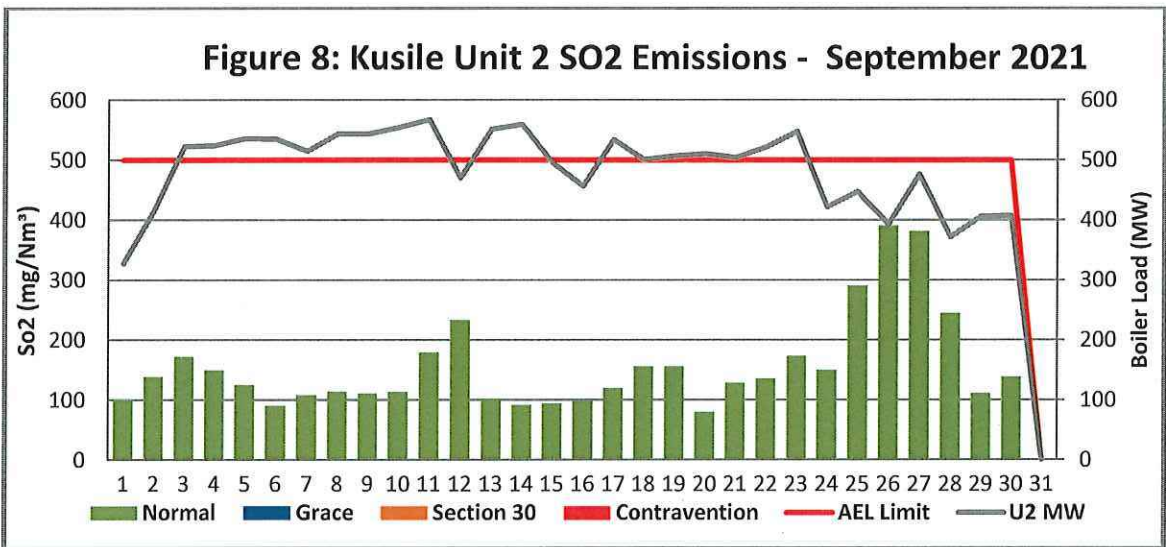
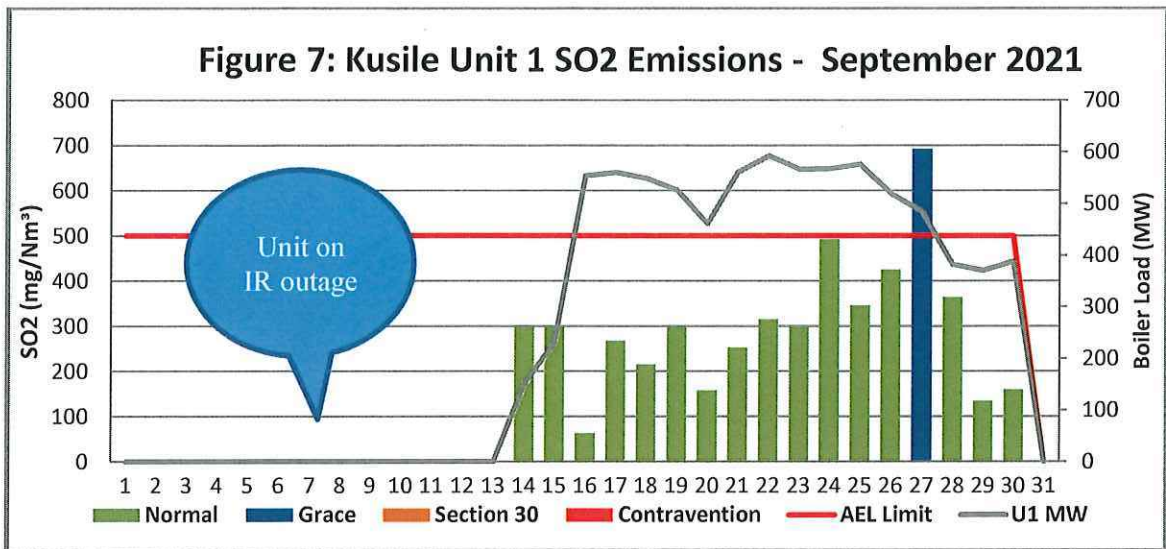
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	17	0	0	0	0	281,2
Unit 2	30	0	0	0	0	368,5
Unit 3	22	0	0	0	0	413,3
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	69	0	0	0	0	

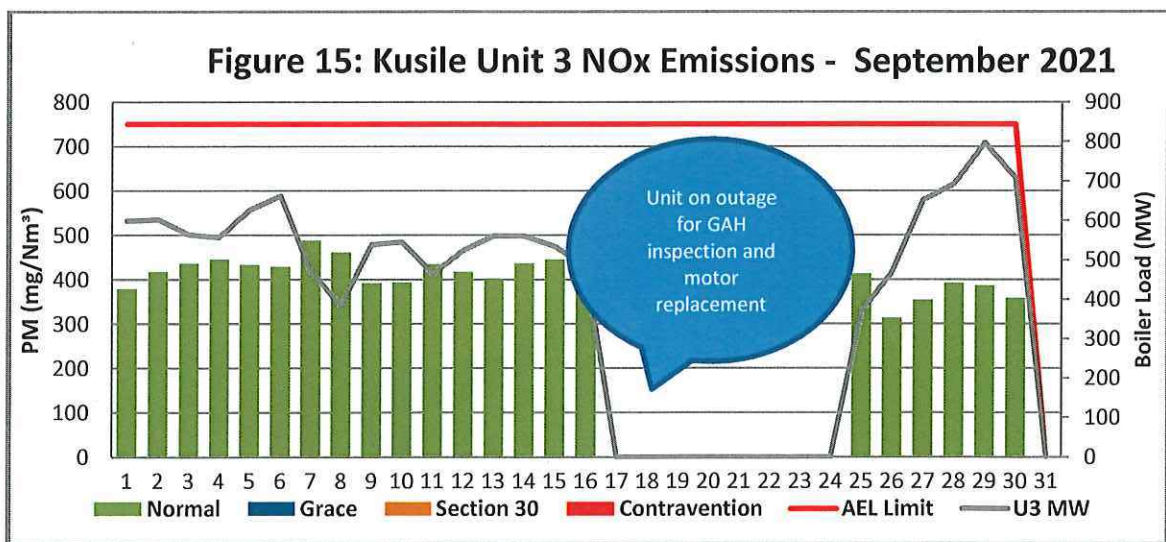
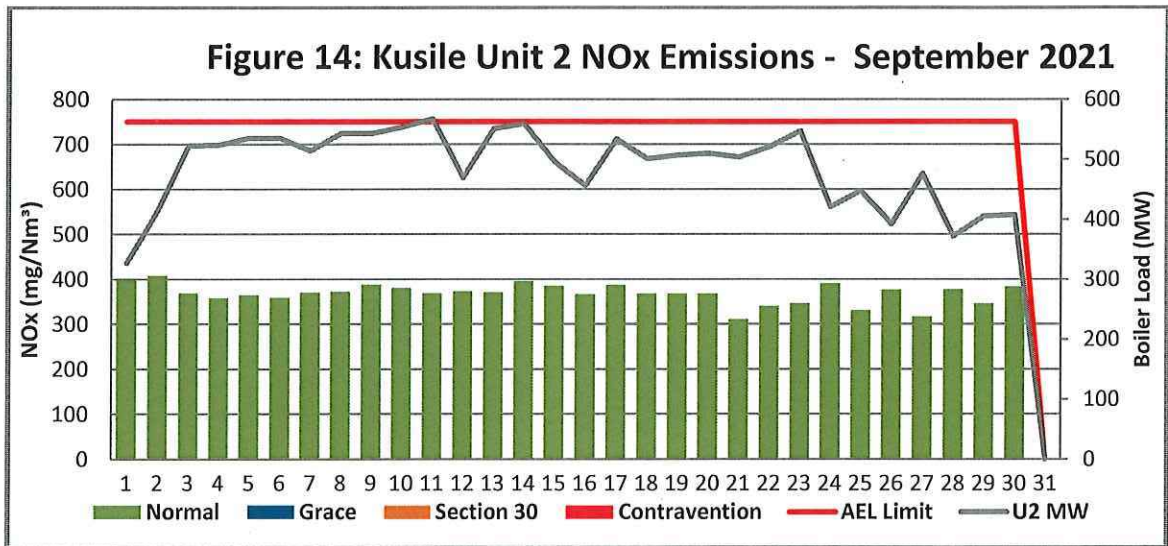
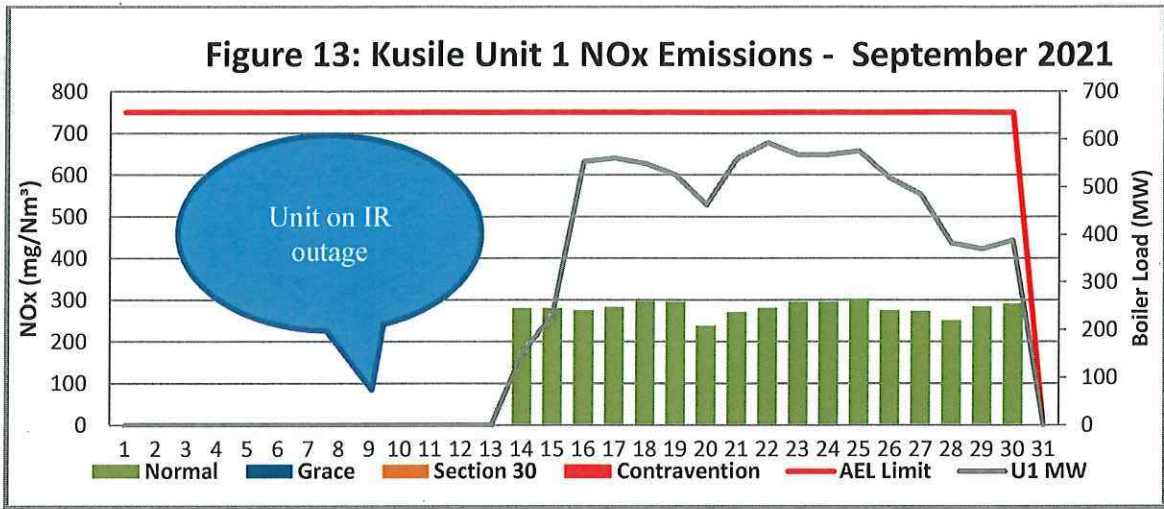
Table 7.5: Legend Description

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









8. Shut down and Light up information

Table 8. PM Start-up information for the month of Sep-2021

Unit No. 1	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	BO previously	BO previously	12:40 pm	2021/09/19	9:50 pm	2021/09/22	6:20 am	2021/09/29
Draught Group (DG) Shut Down (SD)	n/a	n/a	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
BO to DG SD (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM
Fires in time	12:25 am	2021/09/14	2:50 pm	2021/09/19			12:25 pm	2021/09/29
Synch. to Grid (or BC)	5:15 pm	2021/09/14	2:35 am	2021/09/20			4:00 pm	2021/09/29
Fires in to BC (duration)	00:16:50	DD:HH:MM	00:11:45	DD:HH:MM		DD:HH:MM	00:03:35	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		DD:HH:MM	n/a	DD:HH:MM

Unit No. 2	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	12:30 am	2021/09/01	1:30 am	2021/09/20	2:50 pm	2021/09/28	10:10 pm	2021/09/30
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	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM
Fires in time	3:55 am	2021/09/01	1:30 am	2021/09/20	11:35 pm	2021/09/28	5:05 am	2021/10/01
Synch. to Grid (or BC)	12:30 pm	2021/09/01	1:50 pm	2021/09/20	2:15 am	2021/09/29	5:05 am	2021/10/01
Fires in to BC (duration)	00:08:35	DD:HH:MM	00:12:20	DD:HH:MM	00:02:40	DD:HH:MM	00:00:00	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	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	n/a	DD:HH:MM

KUSILE POWER STATION'S MONTHLY EMISSIONS REPORT FOR SEP 2021 - 17/4/AEL/MP311/12/01

Unit No. 3	Event 1		Event 2		Event 3	
Breaker Open (BO)	8:00 am	2021/09/07	11:05 pm	2021/09/16	7:45 pm	2021/09/27
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	3:05 pm	2021/09/17	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD:HH:MM	00:16:00	DD:HH:MM	n/a	DD:HH:MM
Fires in time	8:00 am	2021/09/07	6:50 pm	2021/09/24	8:05 am	2021/09/28
Synch. to Grid (or BC)	1:50 pm	2021/09/07	7:55 pm	2021/09/25	10:25 am	2021/09/28
Fires in to BC (duration)	00:05:50	DD:HH:MM	01:01:05	DD:HH:MM	00:02:20	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

9. Complaints

No complaints received during the month of Sep - 2021