

Ms Mpho Nembilwi
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Date:
Jan 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 NOVEMBER 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 November 2021.

Hoping the above will meet your satisfaction.

Yours sincerely



Bongumusa A. Mashazi
GENERAL MANAGER
DATE: 2022/01/04

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

Compiled by:



Cylia Malebana
Senior Environmental Advisor

Date: 03 Jan 2022

Checked by:



Tsholofelo Lekhuleni
Process Engineer

Date: 04 Jan 2022

Supported by:



Nontobeko Moyo
PJFFP System Engineer

Date: 03/01/2022

Verified by:

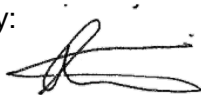


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Lesiba Kgobe
Environmental Management Manager

Date: 04/01/2022

Validated by:



Gomotsegang Sehlabi
Acting Boiler Engineering Manger

Date: 04/01/2022

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 Nov-2021
	Coal	Tons	1 818 083	425 430
	Fuel Oil	Tons	5 533	1177,31
	Limestone	Tons	72 917	17721

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Nov-2021
	Energy	GWh	3214,08	620,76
	Ash	Tons	663 583	124 183,0
	Gypsum	Tons	129 250	9 923,8
	RE PM	kg/MWh	not specified	0,070
	RE SOx	kg/MWh	not specified	1,845

3 Energy source characteristics

Fuel Characteristic	Units	Stipulated Range	Monthly Average Content
Coal CV	MJ/kg	not specified	21,130
Coal Sulphur	%	1,3	0,740
Ash in Coal	%	38	29,190

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 Nov-2021	Technology Type	Efficiency Nov-2021
Unit 1	FFP	99,980%	FGD	64,483%
Unit 2	FFP	On outage		
Unit 3	FFP	99,947%	FGD	91,373%
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	64,0	88,5	88,4	88,4	98,6
Unit 2	On outage				
Unit 3	78,4	94,7	99,5	92,1	99,5
Unit 4					
Unit 5					
Unit 6					

7. Emissions Performance

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

Associated Unit/Stack	PM	SO ₂	NO _x	CO ₂
Unit 1	10,3	867	945	454 450
Unit 2	On outage			
Unit 3	33,6	278	614	338 328
Unit 4	0,0	0	0	0
Unit 5	0,0	0	0	0
Unit 6	0,0	0	0	0
SUM	43,9	1 145	1 559	792 778

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	22	0	0	0	0	4,8
Unit 2	On outage					
Unit 3	25	1	0	0	1	20,7
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	47	1	0	0	1	

Table 7.3: Operating days in compliance to SO₂ AEL Limit - November 2021

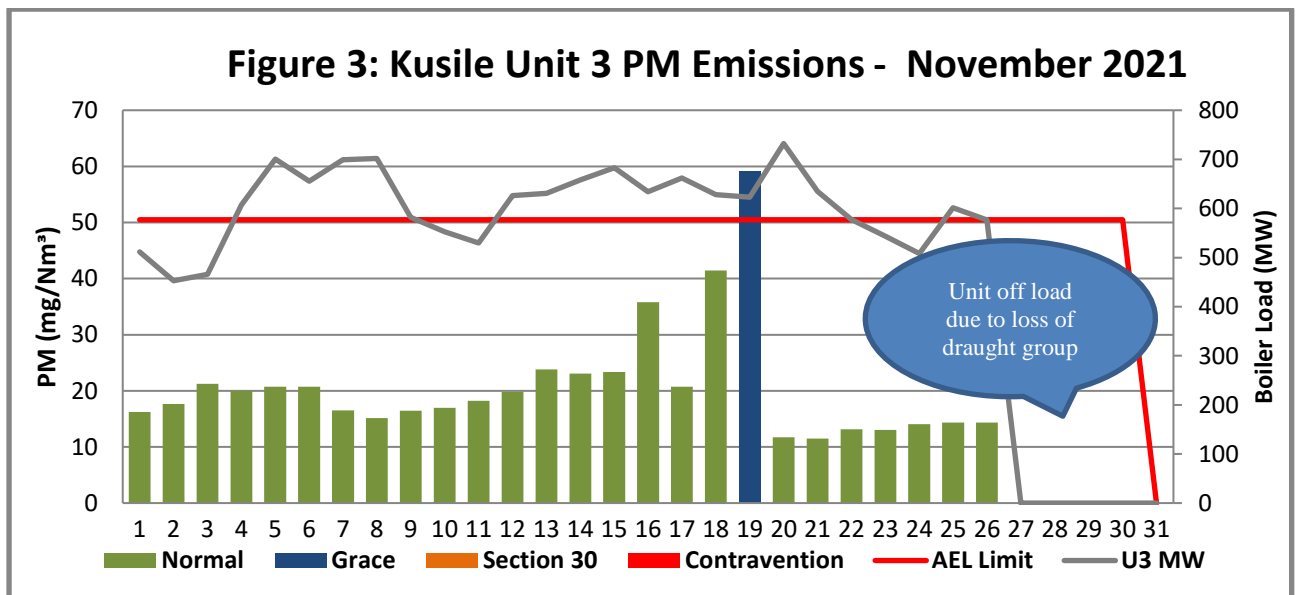
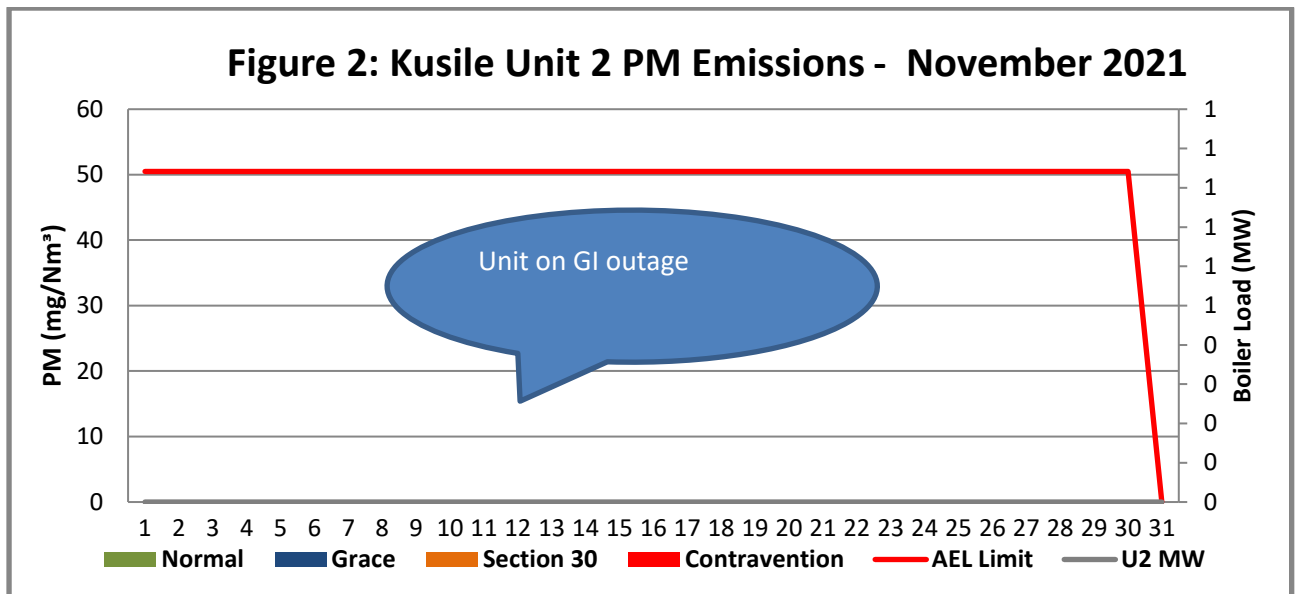
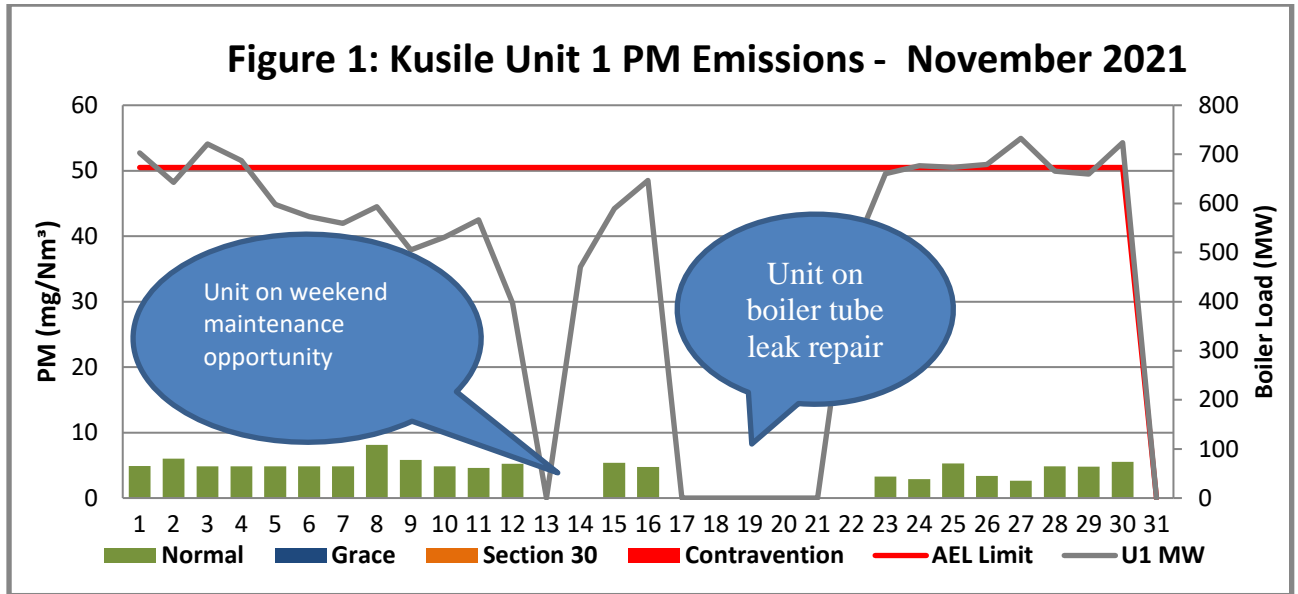
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	22	2	0	0	2	366,6
Unit 2	On outage					
Unit 3	26	0	0	0	0	159,8
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	48	2	0	0	2	

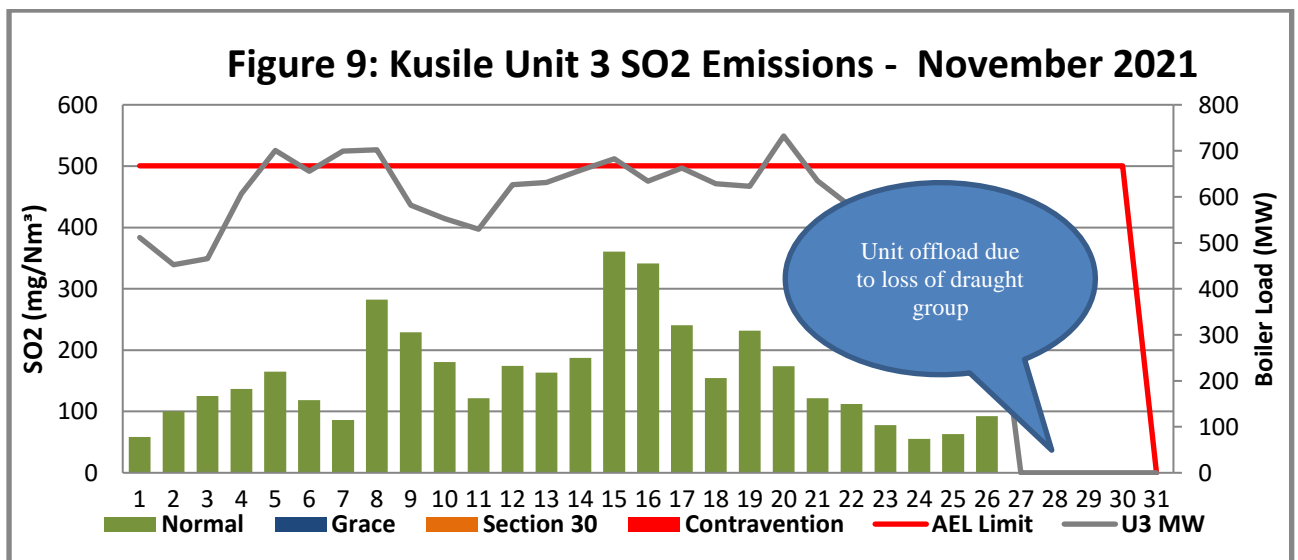
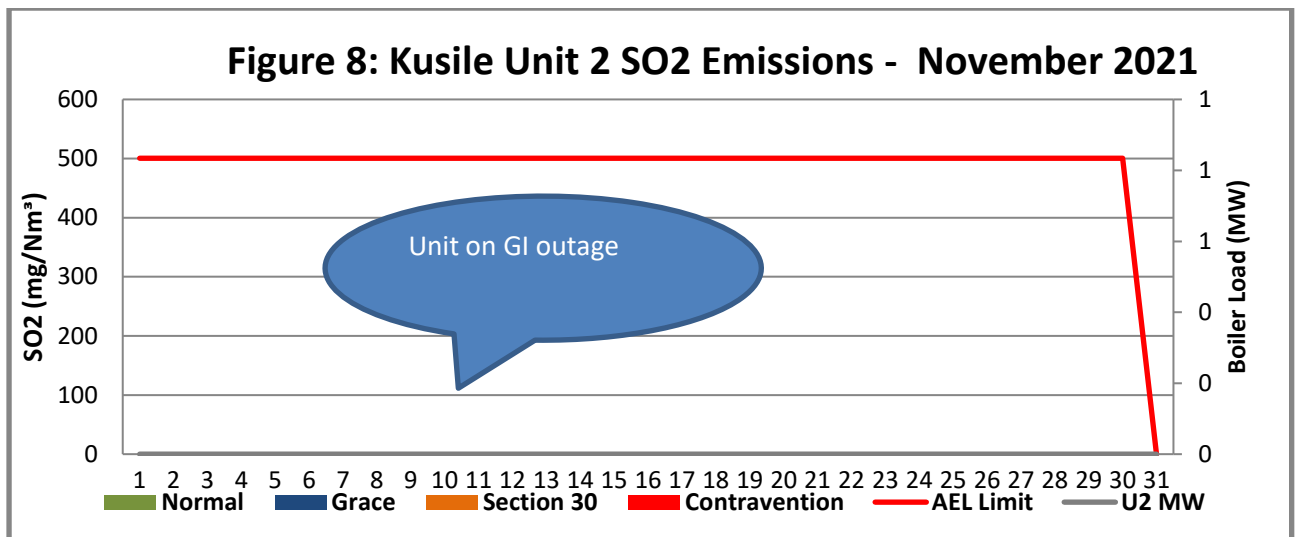
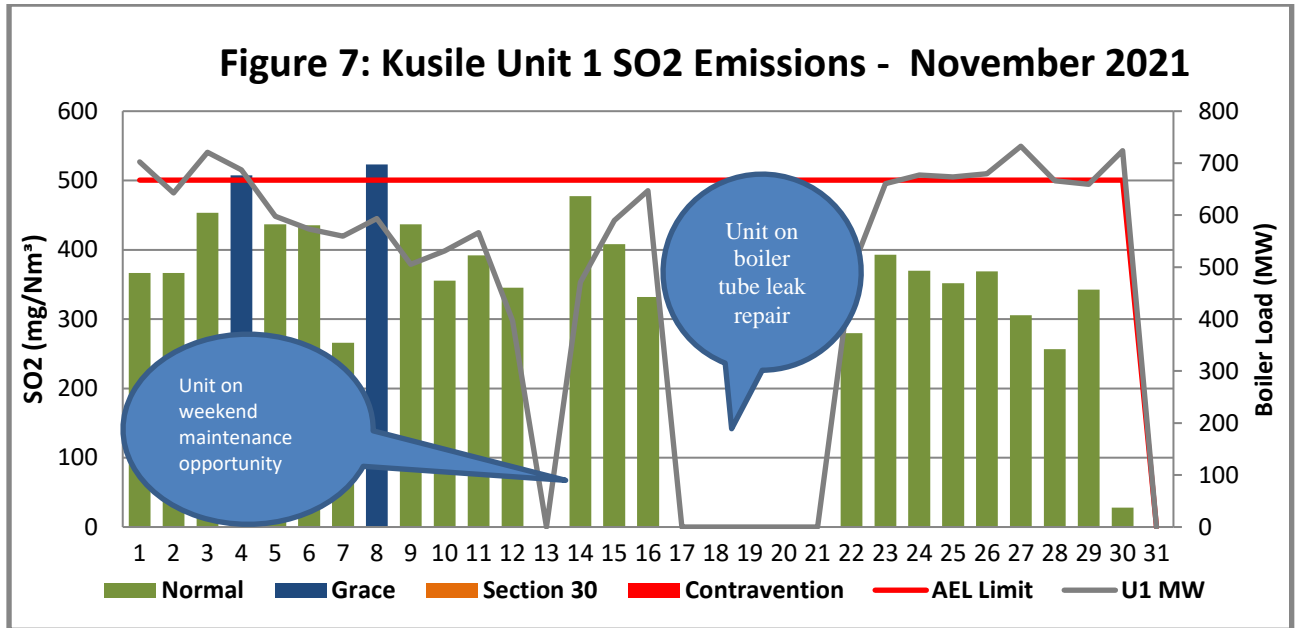
Table 7.4: Operating days in compliance to NO_x AEL Limit - November 2021

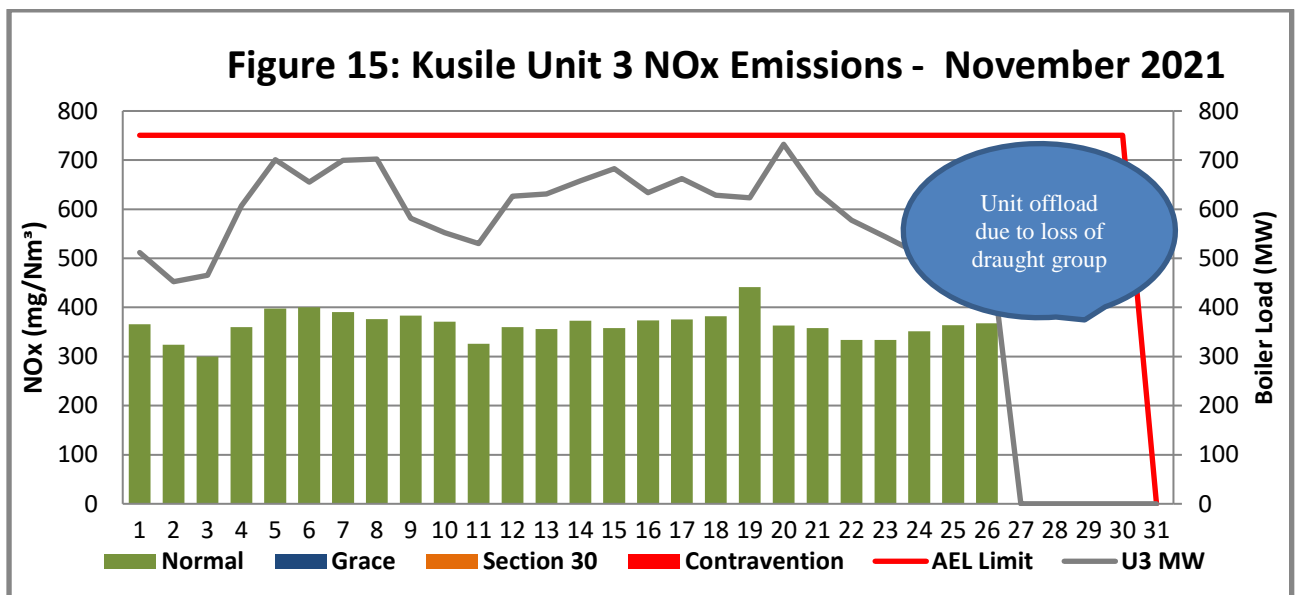
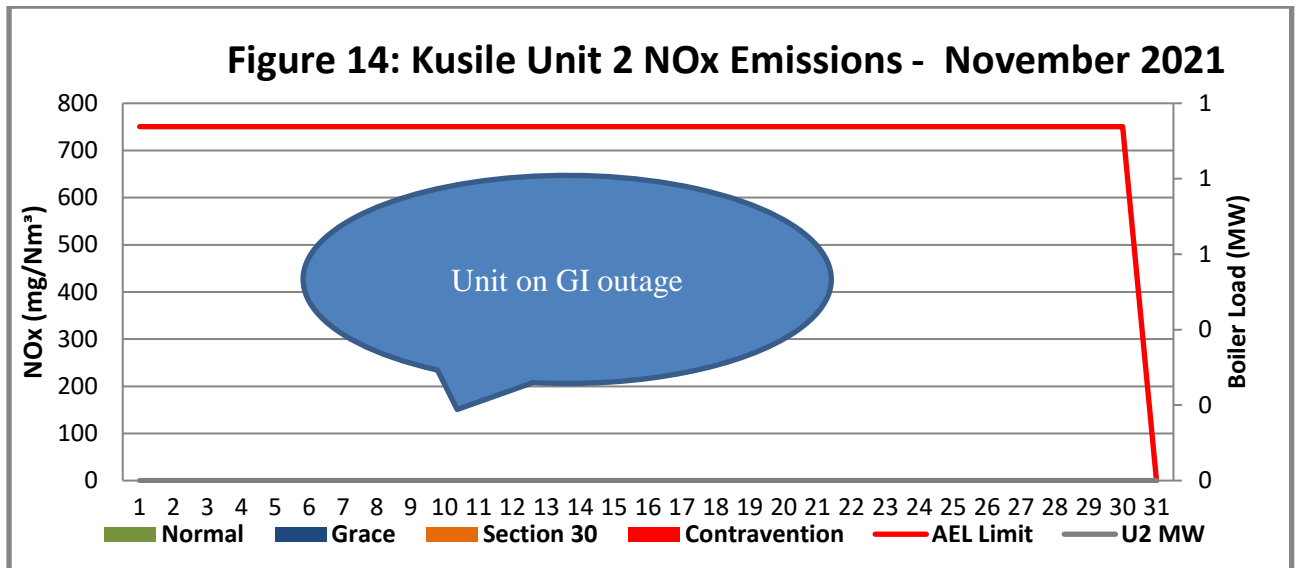
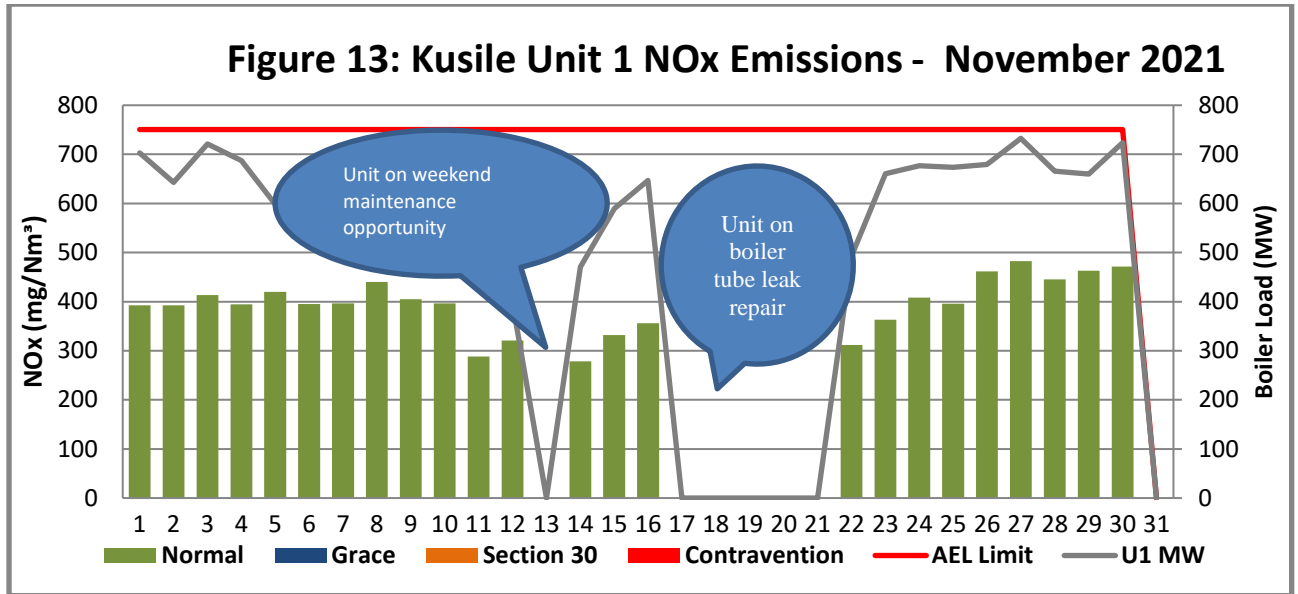
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	24	0	0	0	0	392,7
Unit 2	On outage					
Unit 3	26	0	0	0	0	364,7
Unit 4	0	0	0	0	0	
Unit 5	0	0	0	0	0	
Unit 6	0	0	0	0	0	
SUM	50	0	0	0	0	

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

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

Unit No. 1	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	2:00 pm	2021/11/02	12:45 am	2021/11/12	2:45 pm	2021/11/16	5:00 pm	2021/11/30
Draught Group (DG) Shut Down (SD)	2:40 pm	2021/11/02	8:50 am	2021/11/12	9:50 am	2021/11/17	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	00:00:40	DD:HH:MM	00:08:05	DD:HH:MM	17:09:50	DD:HH:MM	n/a	DD:HH:MM
Fires in time	3:40 pm	2021/11/02	2:05 am	2021/11/14	11:55 pm	2021/11/21	4:15 pm	2021/12/01
Synch. to Grid (or BC)	3:40 pm	2021/11/02	12:40 pm	2021/11/14	4:00 am	2021/11/22	7:15 pm	2021/12/01
Fires in to BC (duration)	00:00:00	DD:HH:MM	00:10:35	DD:HH:MM	00:04:05	DD:HH:MM	00:03:00	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

Unit No. 3	Event 1		Event 2	
Breaker Open (BO)	5:10 am	2021/11/06	2:40 pm	2021/11/26
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	11:50 am	2021/11/27
BO to DG SD (duration)	n/a	DD:HH:MM	00:21:10	DD:HH:MM
Fires in time			2:55 am	2021/12/02
Synch. to Grid (or BC)			4:35 am	2021/12/03
Fires in to BC (duration)		DD:HH:MM	01:01:40	DD:HH:MM
Emissions below limit from BC (end date)			not > limit	not > limit
Emissions below limit from BC (duration)		DD:HH:MM	n/a	DD:HH:MM

9. Complaints

No complaints received during the month of Nov - 2021