



Generation

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AND

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DUVHA POWER STATION

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

GENERAL MANAGER

2020 - 05 -18

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	Maximum Permitted Consumption Rate	Consumption Rate Mar-2020
	Coal	Tons/month	1400000	493445.42
	Fuel Oil	Tons/month	5000	5864.4
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Mar-2020
	Energy	GWh	3600	807.14
	Ash	Tons	not specified	136 931.1
	RE Ash	kg/MWh	not specified	0.418

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to 1.2	0.740
Ash Content	%	27 to 30	27.750

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO _x	NO _x
Unit 1	100	3500	1100
Unit 2	100	3500	1100
Unit 4	100	3500	1100
Unit 5	100	3500	1100
Unit 6	100	3500	1100

4 ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Mar-2020
Unit 1	Fabric Filter Plant (FFP)	99.87%
Unit 2	Fabric Filter Plant (FFP)	99.73%
Unit 4	Electro Static Precipiator (ESP)	99.75%
Unit 5	Electro Static Precipiator (ESP)	99.44%
Unit 6	Electro Static Precipiator (ESP)	99.54%

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	85.1	96.9	96.9
Unit 2	98.4	85.7	85.7
Unit 4	99.8	98.4	98.4
Unit 5	99.8	99.0	99.0
Unit 6	89.4	98.4	98.4

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of March 2020

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	58.8	2 926	1 482
Unit 2	26.1	531	303
Unit 4	63.6	1 678	1 013
Unit 5	131.2	3 050	1 218
Unit 6	89.3	1 351	766
SUM	369.0	9 536	4 782

Table 6.2: Operating days in compliance to PM AEL Limit - March 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	28	0	0	0	0	28.0
Unit 2	7	0	0	0	0	54.1
Unit 4	18	2	0	0	2	62.6
Unit 5	17	6	2	0	8	95.5
Unit 6	8	6	0	0	6	121.5
SUM	78	14	2	0	16	

Table 6.3: Operating days in compliance to SO_x AEL Limit - March 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	30	0	0	0	0	1 353.8
Unit 2	7	0	0	0	0	1 209.0
Unit 4	24	0	0	0	0	1 341.3
Unit 5	26	0	0	0	0	2 058.4
Unit 6	16	0	0	0	0	1 522.2
SUM	103	0	0	0	0	

Table 6.4: Operating days in compliance to NO_x AEL Limit - March 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	30	0	0	0	0	676.5
Unit 2	7	0	0	0	0	690.6
Unit 4	24	0	0	0	0	787.2
Unit 5	26	0	0	0	0	823.5
Unit 6	16	0	0	0	0	858.5
SUM	103	0	0	0	0	

Table 6.5: 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

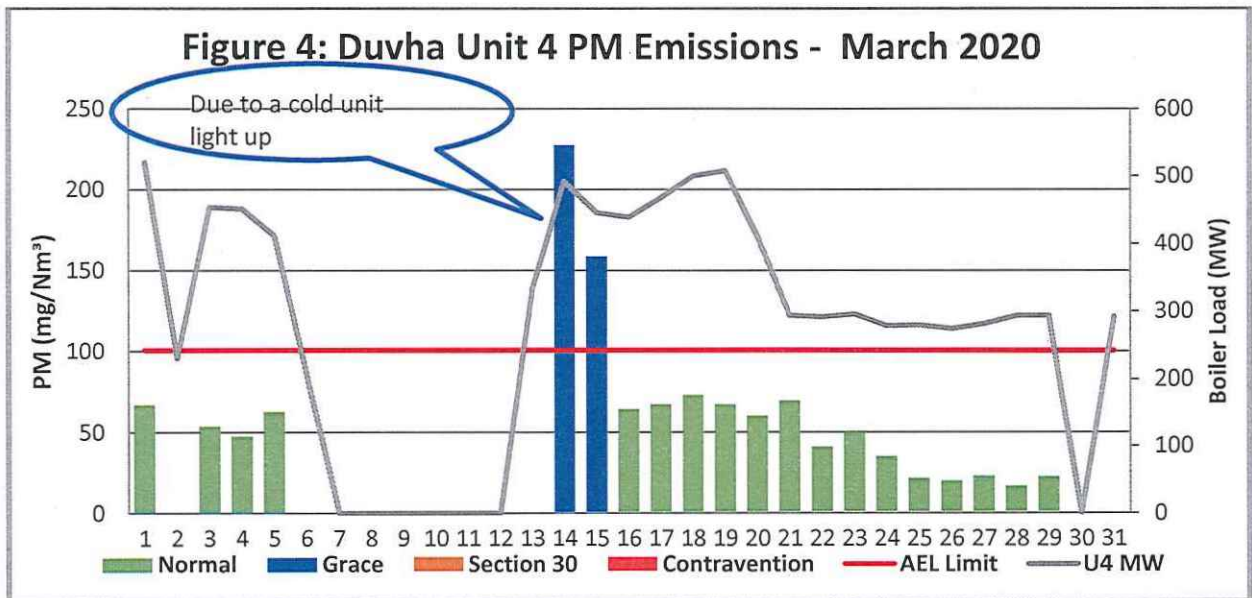
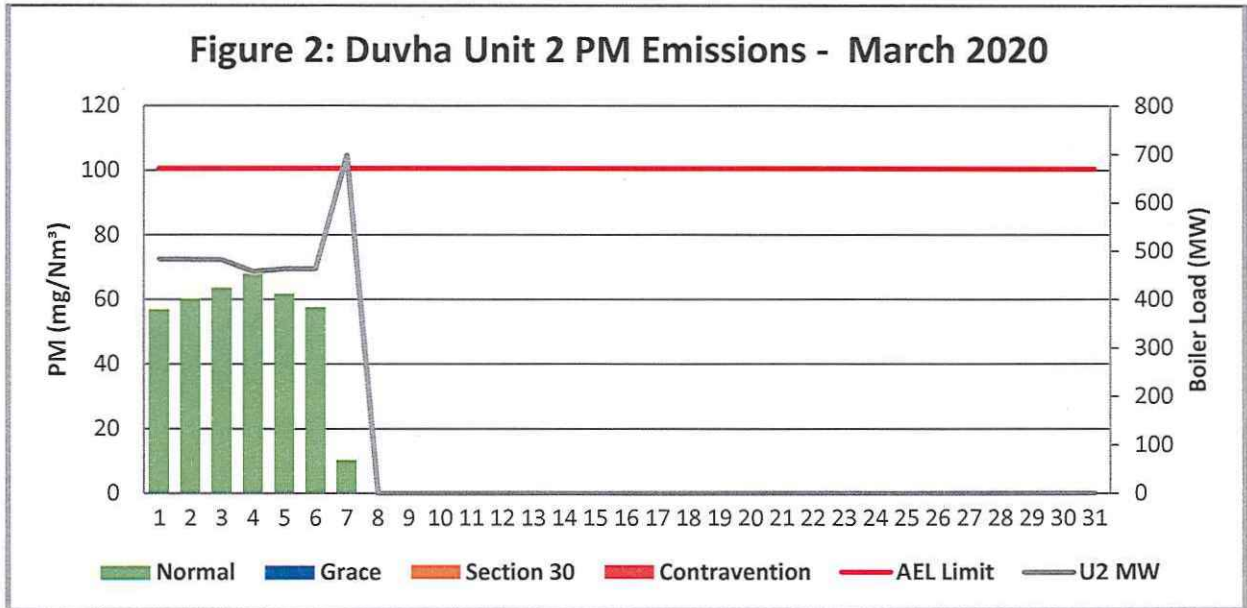


Figure 5: Duvha Unit 5 PM Emissions - March 2020

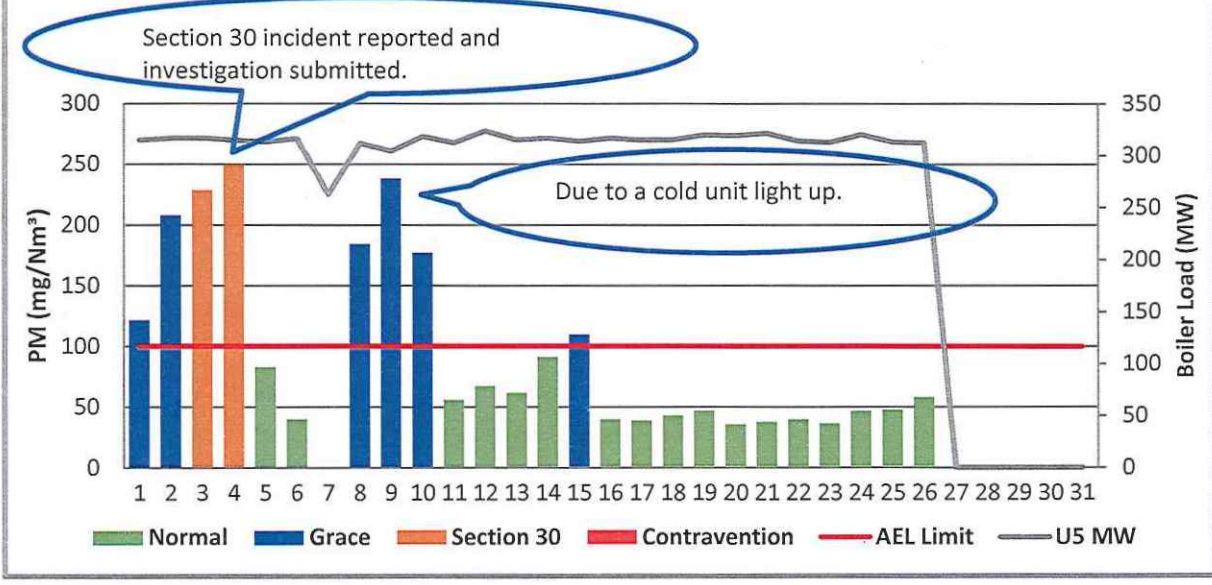


Figure 6: Duvha Unit 6 PM Emissions - March 2020

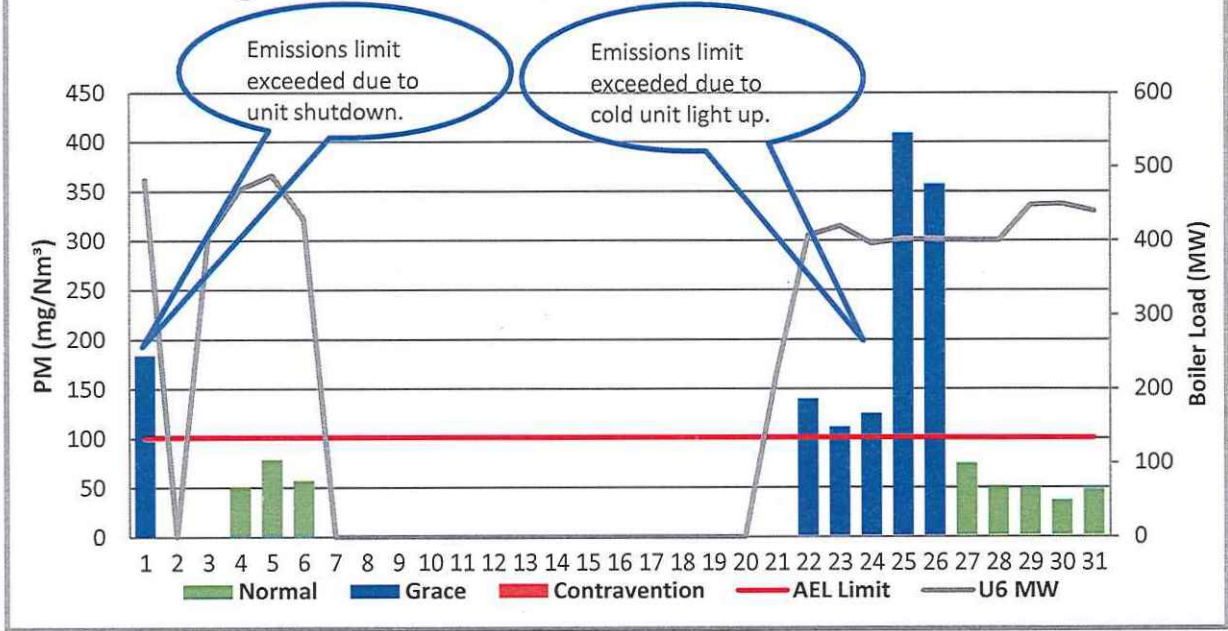


Figure 8: Duvha Unit 2 SOx Emissions - March 2020

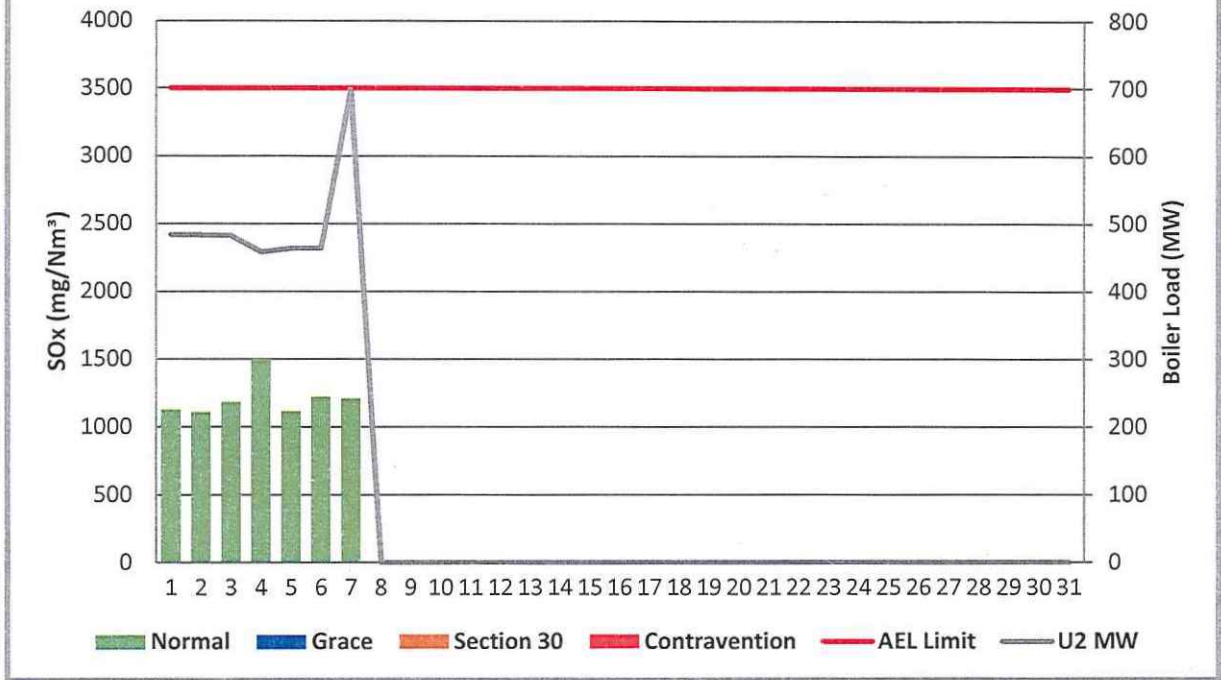


Figure 10: Duvha Unit 4 SOx Emissions - March 2020

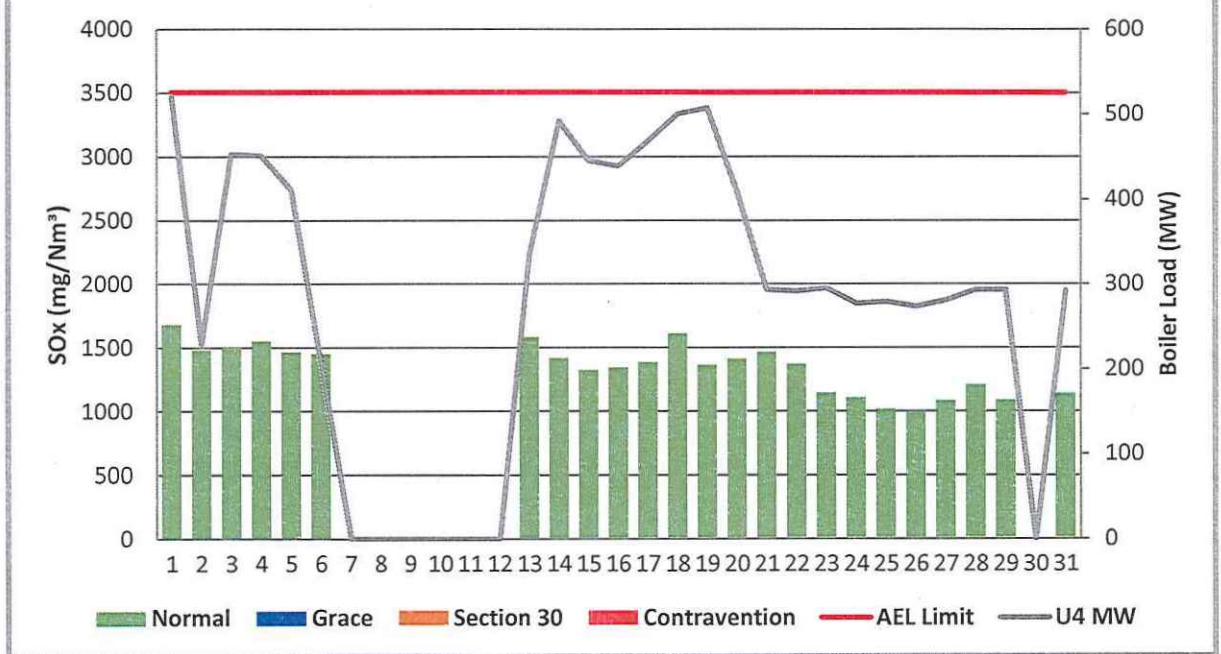


Figure 11: Duvha Unit 5 SOx Emissions - March 2020

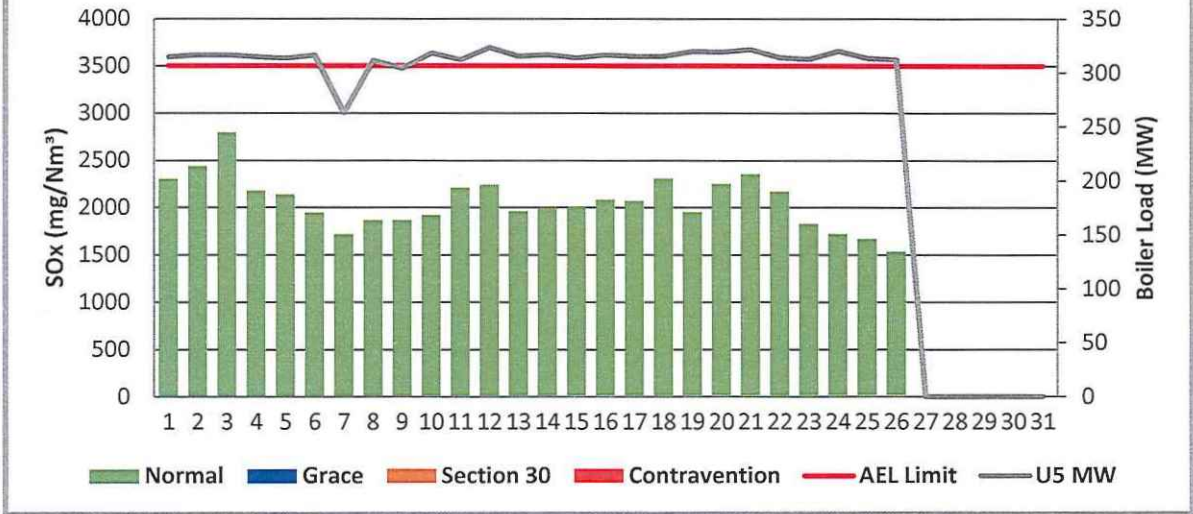


Figure 12: Duvha Unit 6 SOx Emissions - March 2020

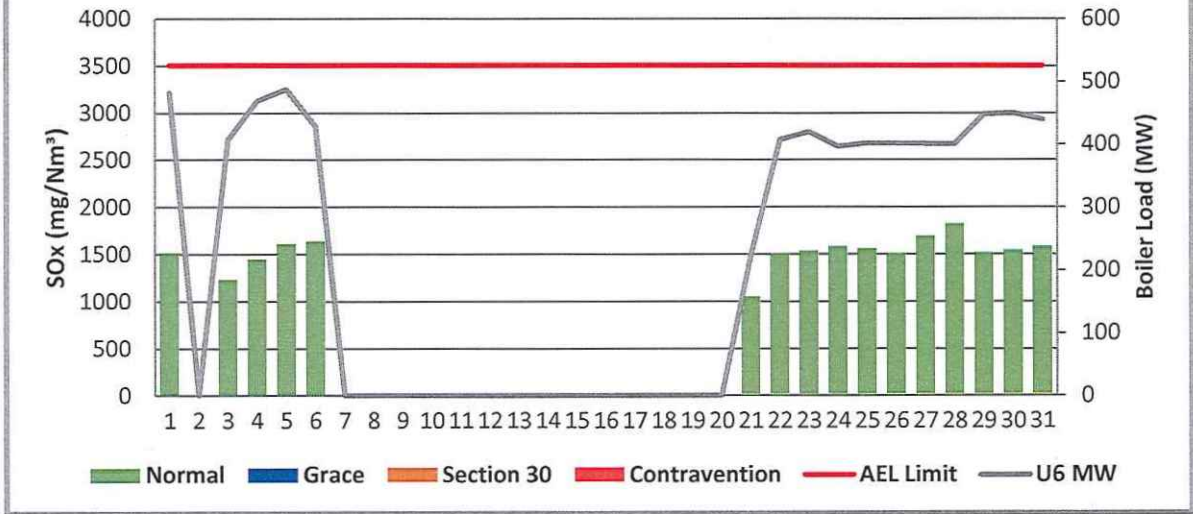


Figure 14: Duvha Unit 2 NOx Emissions - March 2020

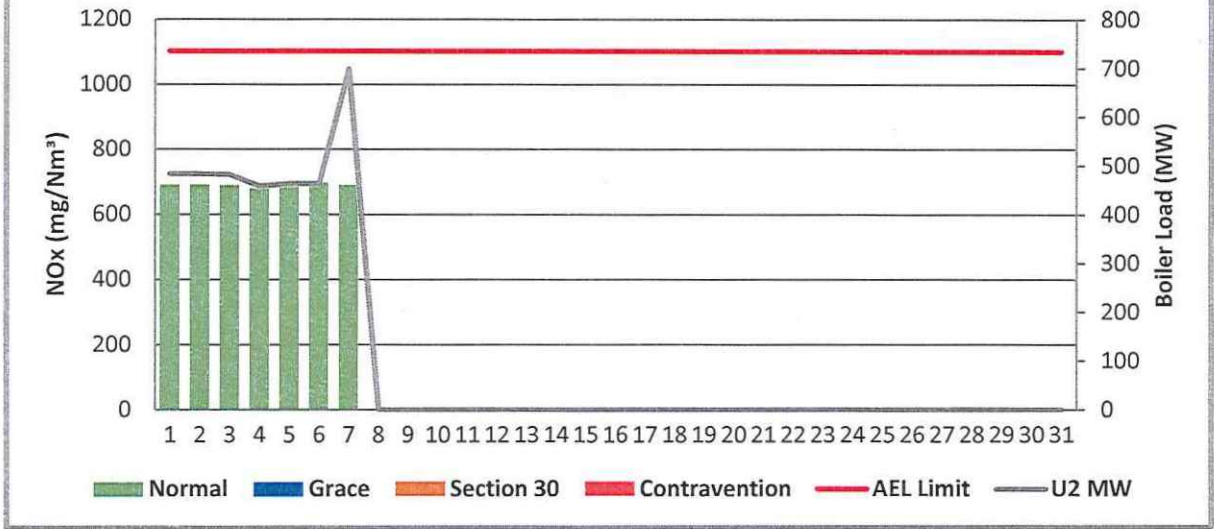


Figure 16: Duvha Unit 4 NOx Emissions - March 2020

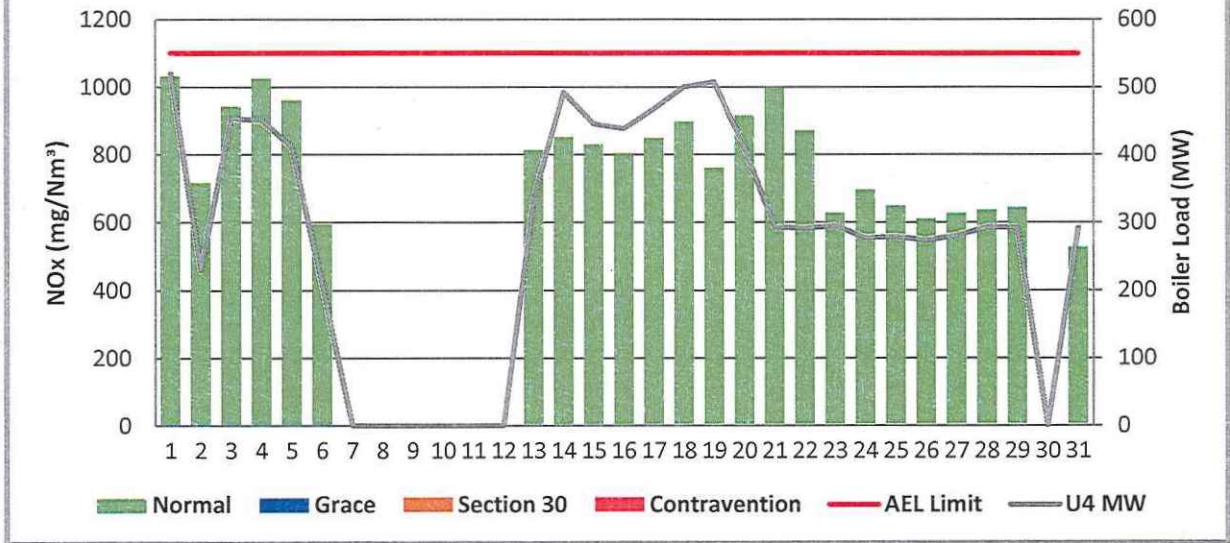


Figure 17: Duvha Unit 5 NOx Emissions - March 2020

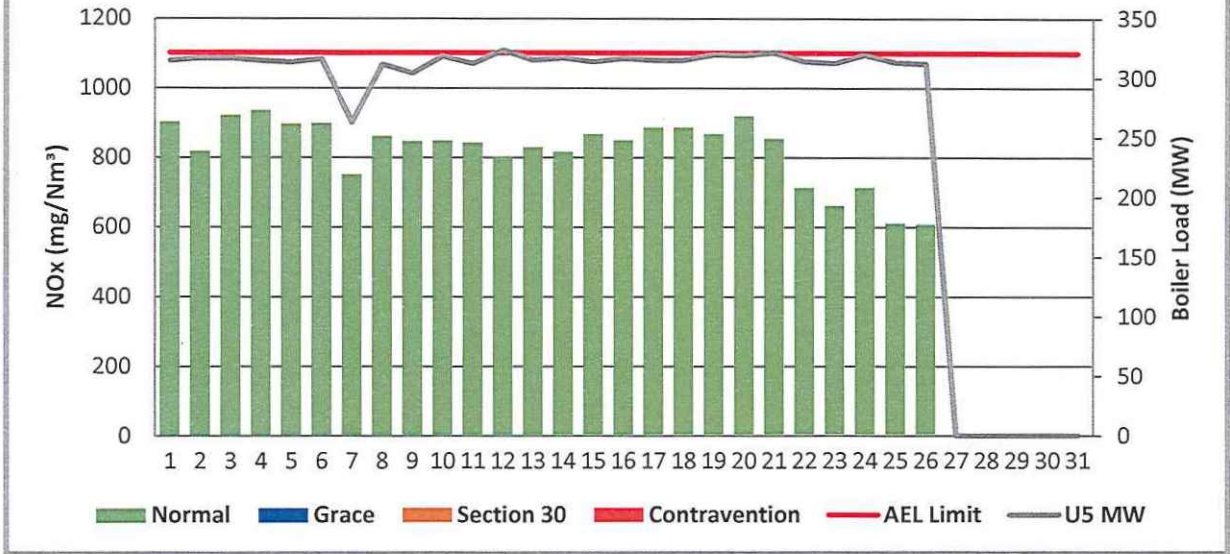
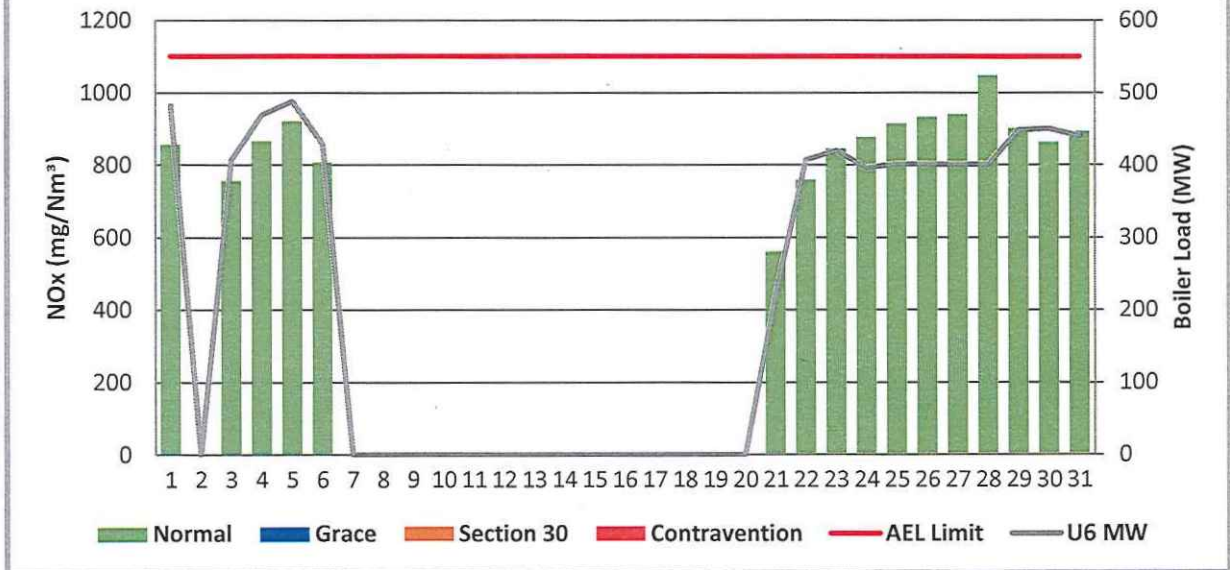


Figure 18: Duvha Unit 6 NOx Emissions - March 2020



7 SHUT DOWN AND LIGHT UP INFORMATION

Unit No.1	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>11:45 PM</i>	<i>2020/03/06</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>12:05 PM</i>	<i>2020/03/07</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:12:20</i>	DD:HH:MM
Fires in time	<i>6:05 AM</i>	<i>2020/03/01</i>	<i>4:35 AM</i>	<i>2020/03/08</i>
Synch. to Grid (or BC)	<i>9:40 AM</i>	<i>2020/03/01</i>	<i>11:10 AM</i>	<i>2020/03/08</i>
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM

Unit No.2	<i>Event 1</i>	
Breaker Open (BO)	<i>10:35 PM</i>	<i>2020/03/07</i>
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM
Fires in time		
Synch. to Grid (or BC)		
Fires in to BC (duration)		DD:HH:MM
Emissions below limit from BC (end date)		
Emissions below limit from BC (duration)		DD:HH:MM

Unit No.4	Event 1		Event 2	
Breaker Open (BO)	3:20 PM	2020/03/01	8:55 PM	2020/03/05
Draught Group (DG) Shut Down (SD)	9:05 PM	2020/03/01	9:05 AM	2020/03/13
BO to DG SD (duration)	00:05:45	DD:HH:MM	07:12:10	DD:HH:MM
Fires in time	6:20 AM	2020/03/02	1:40 PM	2020/03/13
Synch. to Grid (or BC)	6:45 PM	2020/03/02	6:15 PM	2020/03/13
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2020/03/03	12:00 AM	2020/03/16
Emissions below limit from BC (duration)	00:05:15	DD:HH:MM	02:05:45	DD:HH:MM

Unit No.5	Event 1		Event 2	
Breaker Open (BO)	11:50 PM	2020/03/06	3:30 PM	2020/03/26
Draught Group (DG) Shut Down (SD)	1:00 AM	2020/03/07	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	00:01:10	DD:HH:MM	n/a	DD:HH:MM
Fires in time	1:20 PM	2020/03/07		
Synch. to Grid (or BC)	5:35 PM	2020/03/07		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	5:00 AM	2020/03/11		
Emissions below limit from BC (duration)	03:11:25	DD:HH:MM		DD:HH:MM

Unit No.6	Event 1		Event 2	
Breaker Open (BO)	3:25 PM	2020/03/01	11:35 AM	2020/03/06
Draught Group (DG) Shut Down (SD)	5:15 PM	2020/03/01	1:50 AM	2020/03/21
BO to DG SD (duration)	00:01:50	DD:HH:MM	14:14:15	DD:HH:MM
Fires in time	5:35 AM	2020/03/03	5:00 PM	2020/03/21

Synch. to Grid (or BC)	12:40 PM	2020/03/03	8:55 PM	2020/03/21
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2020/03/04	12:00 AM	2020/03/23
Emissions below limit from BC (duration)	00:11:20	DD:HH:MM	01:03:05	DD:HH:MM

8 General

Unit 3 was offload for the month of March 2020.

The rest of the information demonstrate compliance with the emission license conditions is supplied in the annual emission report which will be sent to your office.

9 & 10 Complaints and Incidents Register

Refer to addendum A


 Boiler Plant Engineering
 Manager

13 May 2020
 Date


 Environmental
 Manager

11/05/2020
 Date


 Engineering Manager

2020-05-14
 Date

Compiled
 by: Environmental Department

For: Department of Environmental Affairs
 and Tourism

Chief Air Pollution Control
 Officer

Copies: Eskom Environmental Management

D
 Herbst
 B
 Mccourt

Group Technology Engineering

R
Rampiar
E Patel

Duvha Power Station:

Engineering
Manager
Operating
Manager
Maintenance
Manager
Unit Production Manager
Boiler Engineering Manager
System Engineer
Environmental
Officer
Performance and
Test
Production
Manager

Unit 5	02/03/2020	04/03/2020	<ul style="list-style-type: none"> • Negligence in that it is not any one cause that could be called a root cause but composite causes/failure of processes as outlined on the finding numbers all resulted in SO3 plant non-availability 	<ol style="list-style-type: none"> 1. Take corrective action for non-adherence to BL096 procedure. "Particulate emissions monitoring and control and quick trouble shooting (U4 – 6)". 2. Take corrective action for a SO3 standing alarm that was not actioned from the PM to Maintain Scada Alarm and Discrepancies PM. 	03/03/2020	21/04/2020	2020/05/04	2020/05/04	14/7/6/2/4/2/1592