



Generation

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DUVHA POWER STATION

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

GENERAL MANAGER

2020-08-05

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 May-2020
	Coal	Tons	1 400 000	697 466.53
	Fuel Oil	Tons	5 000	4003.99
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate May-2020
	Energy	GWh	3600	1 233.42
	Ash	Tons	not specified	179946.36
	RE Ash	kg/MWh	not specified	0.24

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 TO >1.2	0.88
Ash Content	%	27 TO 30	25.80

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO _x	NO _x
Unit 1	100	3500	1100
Unit 2	100	3500	1100
Unit 3	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 May-2020
Unit 1	Fabric Filter Plant (FFP)	99.36%
Unit 2	Fabric Filter Plant (FFP)	99.86%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Electro Static Precipiator (ESP)	99.86%
Unit 5	Electro Static Precipiator (ESP)	99.85%
Unit 6	Electro Static Precipiator (ESP)	99.32%
Unit 4	Chemithon (SO ₃)	90.00%
Unit 5	Chemithon (SO ₃)	90.00%
Unit 6	Chemithon (SO ₃)	98.00%

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	95.10	94.85	94.85
Unit 2	100.00	94.89	94.89
Unit 4	99.98	99.78	99.78
Unit 5	99.71	99.22	99.07
Unit 6	100.00	99.54	99.54

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of May 2020

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	74.44	3 592	1 756
Unit 2	70.56	3 277	1 665
Unit 4	59.33	2 156	1 264
Unit 5	56.68	2 477	1 040
Unit 6	59.44	2 500	1 356
SUM	320.44	14 001	7 080

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	30	0	0	0	0	36.23
Unit 2	31	0	0	0	0	36.72
Unit 4	23	0	0	0	0	40.98
Unit 5	19	1	0	0	1	50.28
Unit 6	24	0	0	0	0	40.66
SUM	127	1	0	0	1	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	31	0	0	0	0	1717.83
Unit 2	31	0	0	0	0	1660.89
Unit 4	25	0	0	0	0	1366.84
Unit 5	22	0	0	0	0	2028.55
Unit 6	27	0	0	0	0	1614.15
SUM	136	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	31	0	0	0	0	833.84
Unit 2	31	0	0	0	0	843.61
Unit 4	25	0	0	0	0	792.59
Unit 5	22	0	0	0	0	817.24
Unit 6	27	0	0	0	0	859.45
SUM	136	0	0	0	0	

Table 6.5: 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

Figure 1: Duvha Unit 1 PM Emissions - May 2020

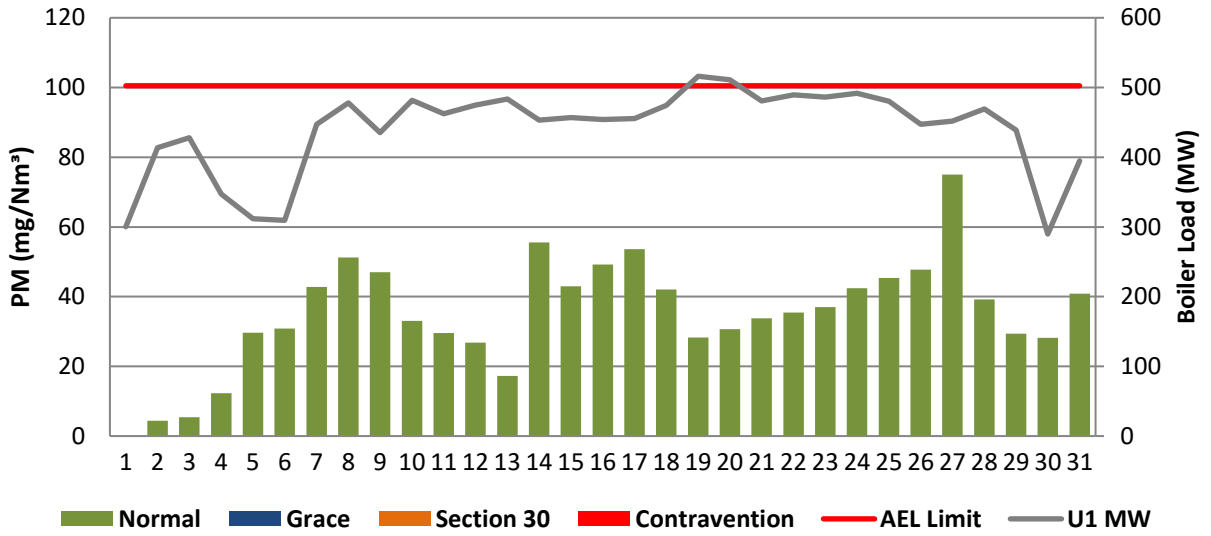


Figure 2: Duvha Unit 2 PM Emissions - May 2020

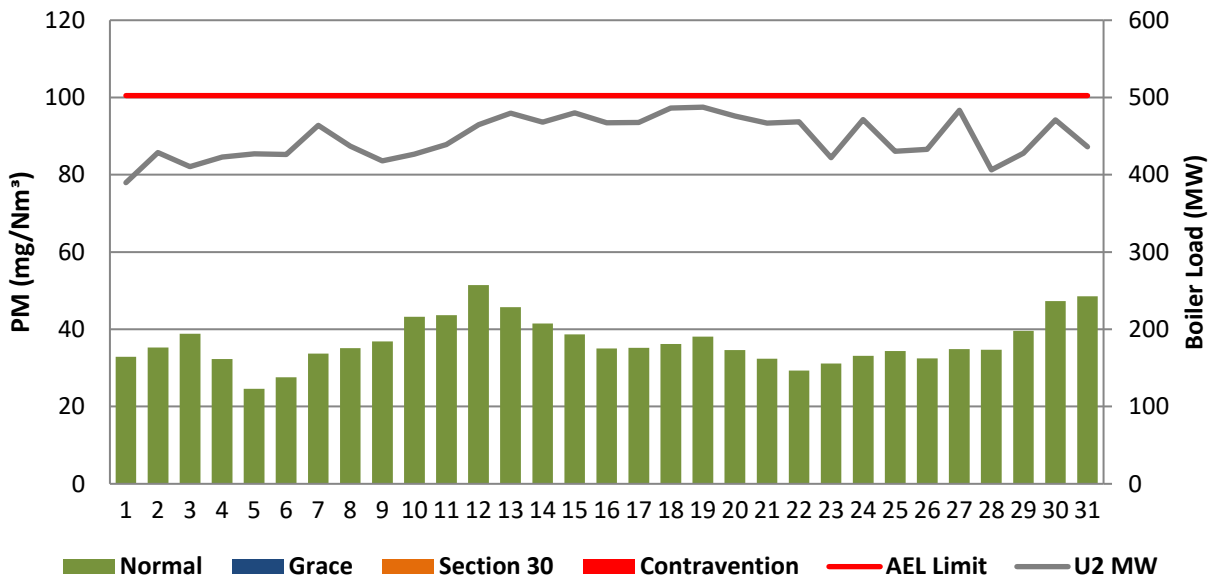


Figure 4: Duvha Unit 4 PM Emissions - May 2020

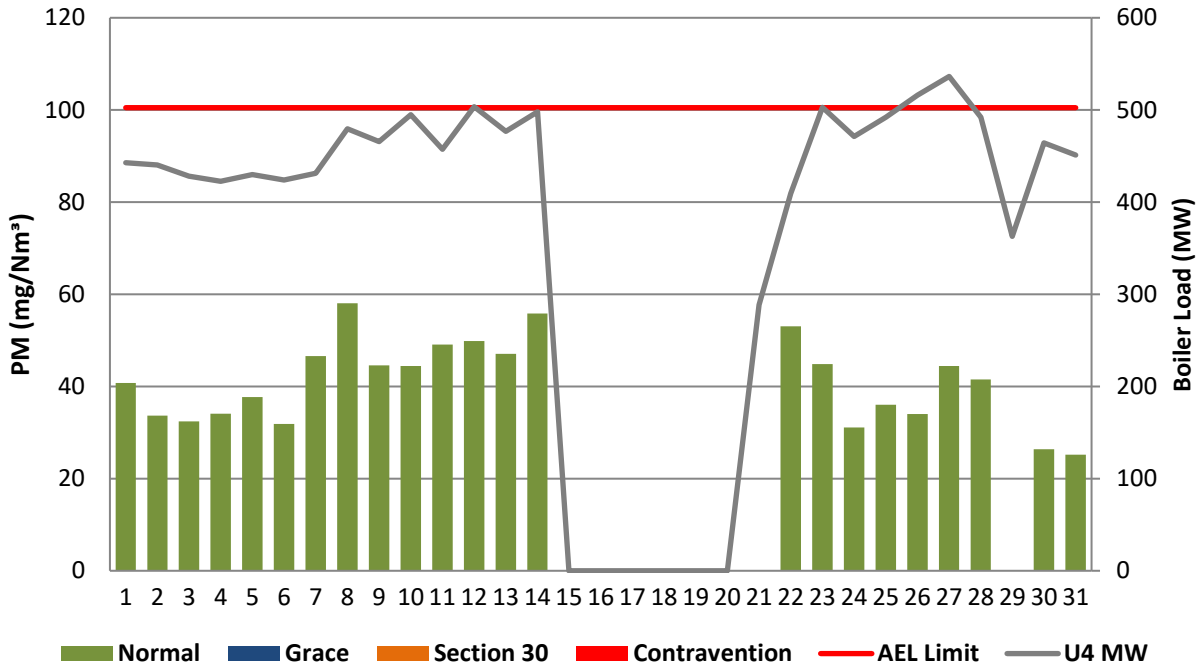


Figure 5: Duvha Unit 5 PM Emissions - May 2020

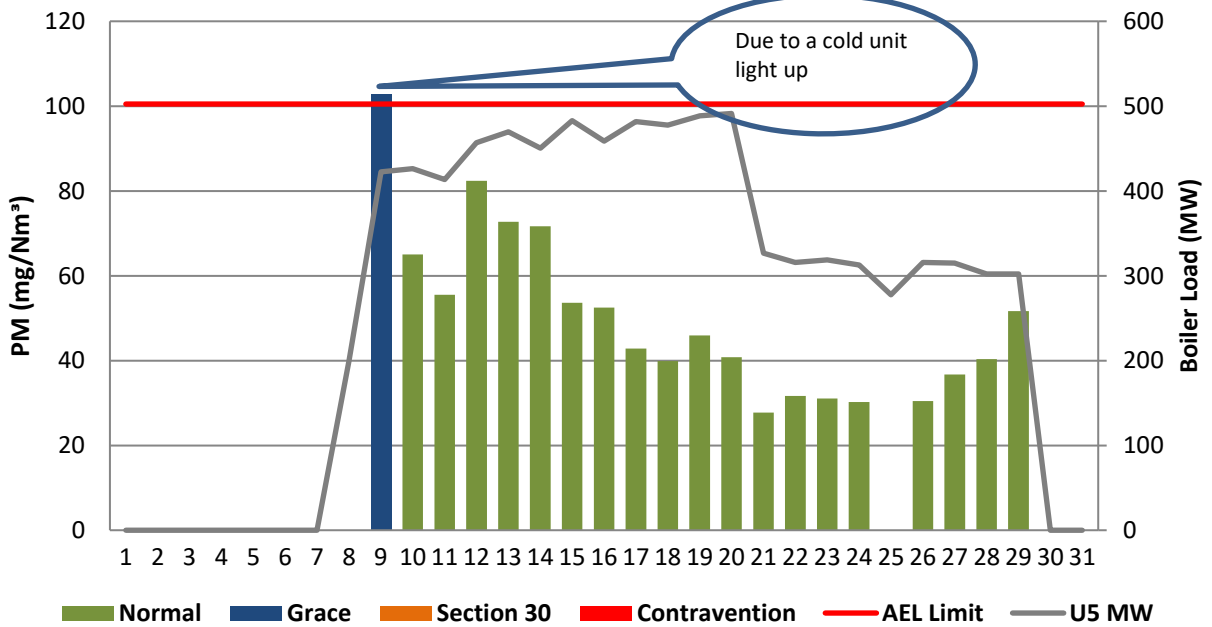


Figure 6: Duvha Unit 6 PM Emissions - May 2020

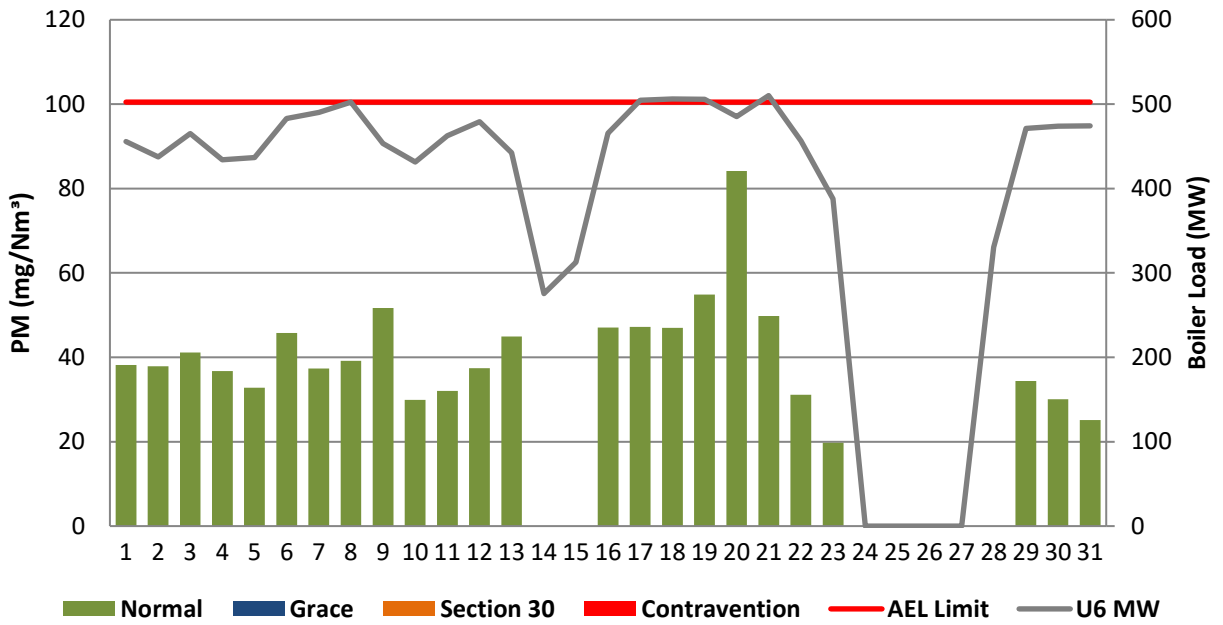


Figure 7: Duvha Unit 1 SOx Emissions - May 2020

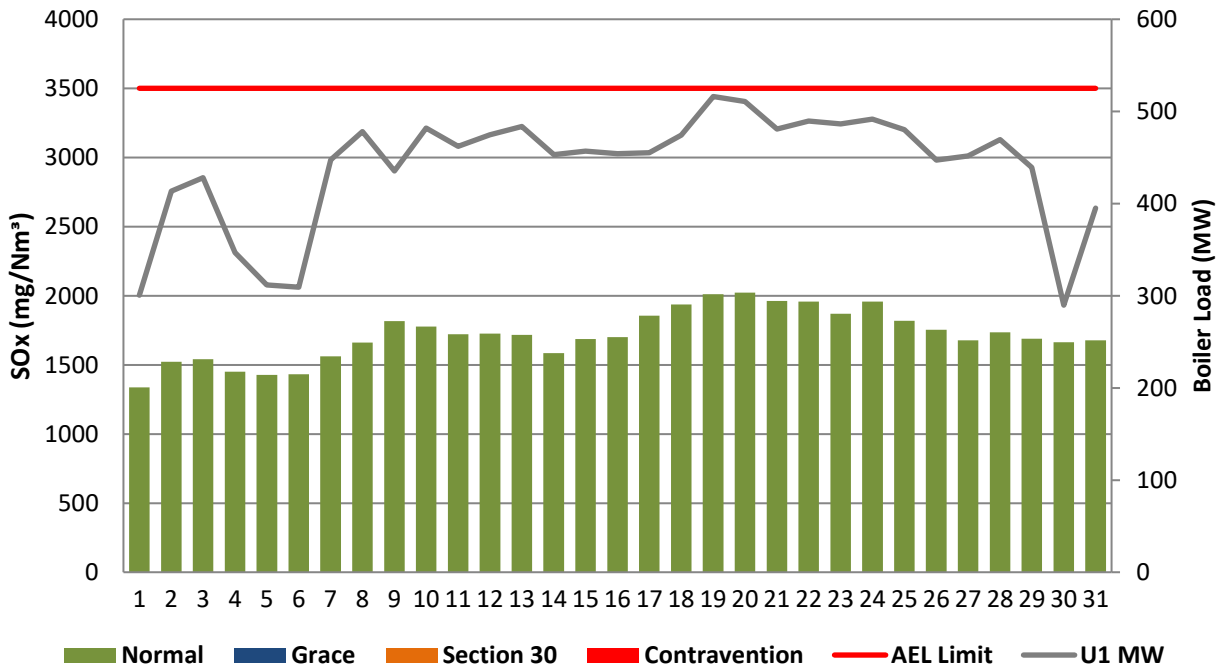


Figure 8: Duvha Unit 2 SOx Emissions - May 2020

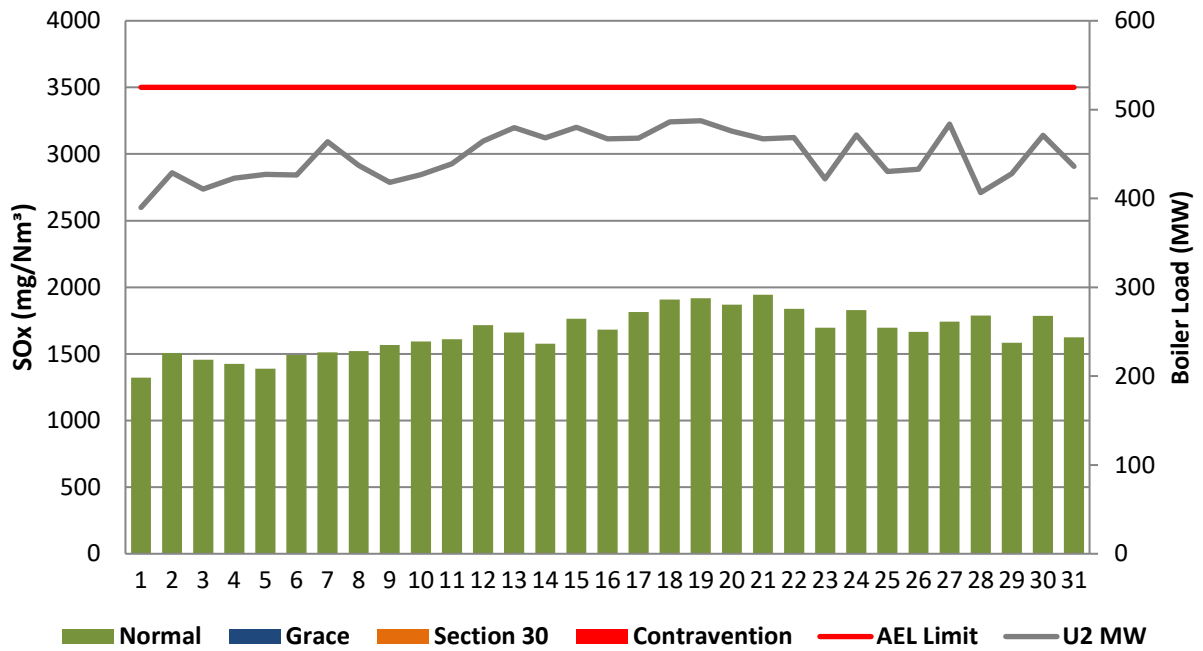


Figure 10: Duvha Unit 4 SOx Emissions - May 2020

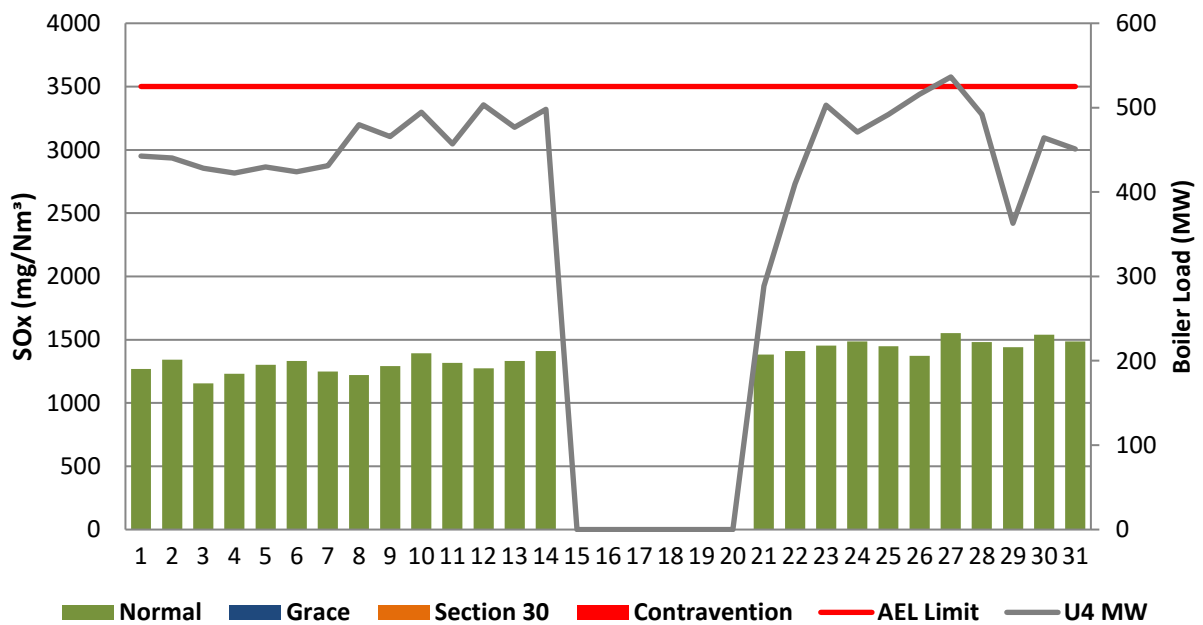


Figure 11: Duvha Unit 5 SOx Emissions - May 2020

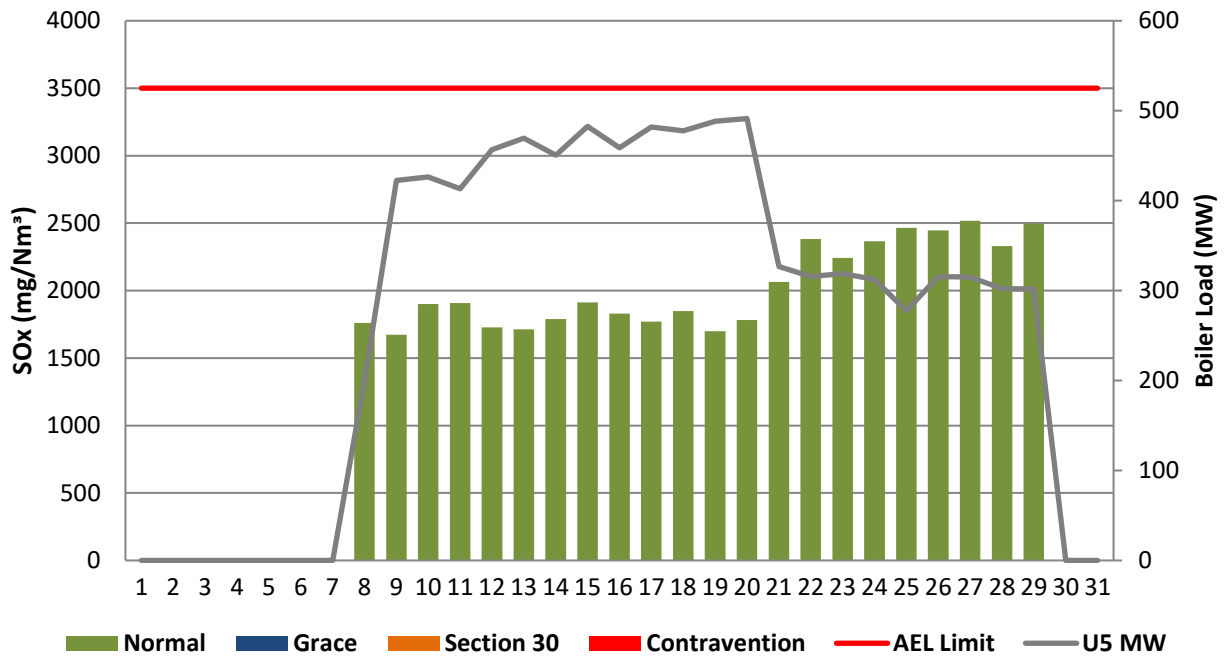


Figure 11: Duvha Unit 5 SOx Emissions - May 2020

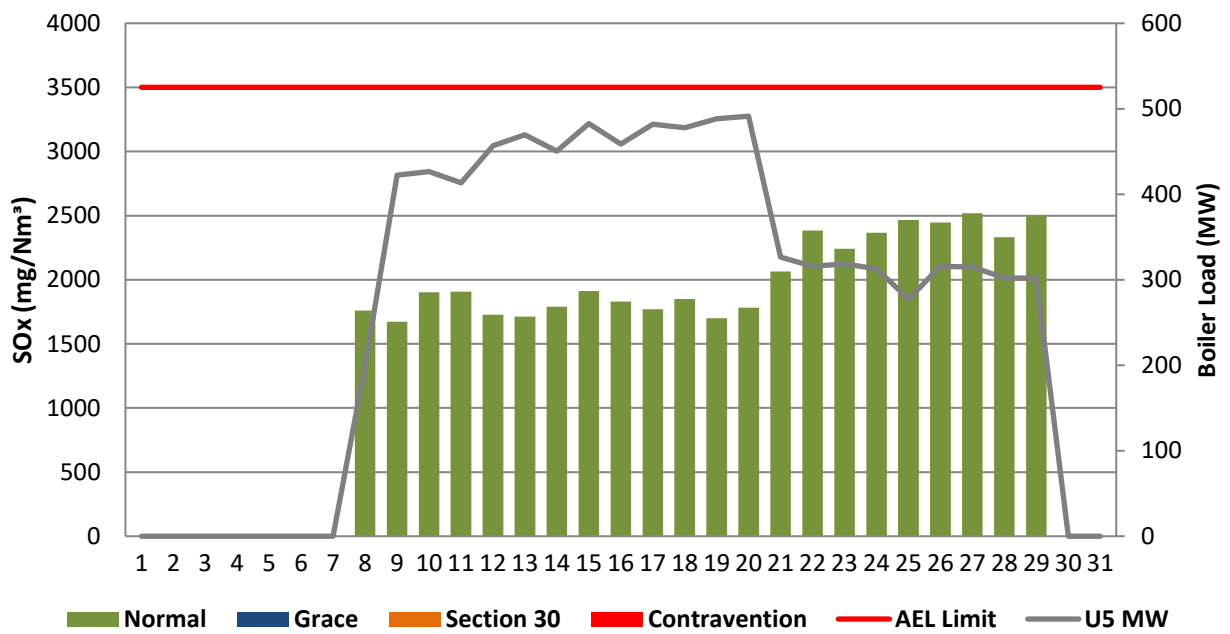


Figure 12: Duvha Unit 6 SOx Emissions - May 2020

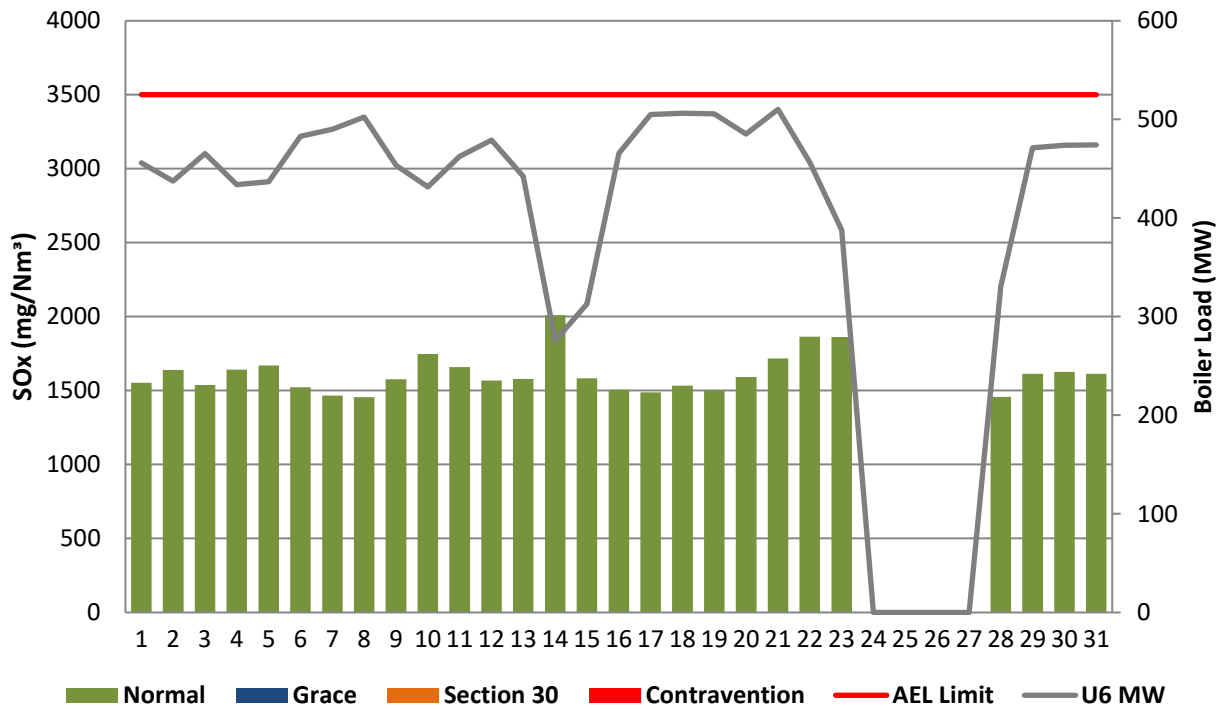


Figure 13: Duvha Unit 1 NOx Emissions - May 2020

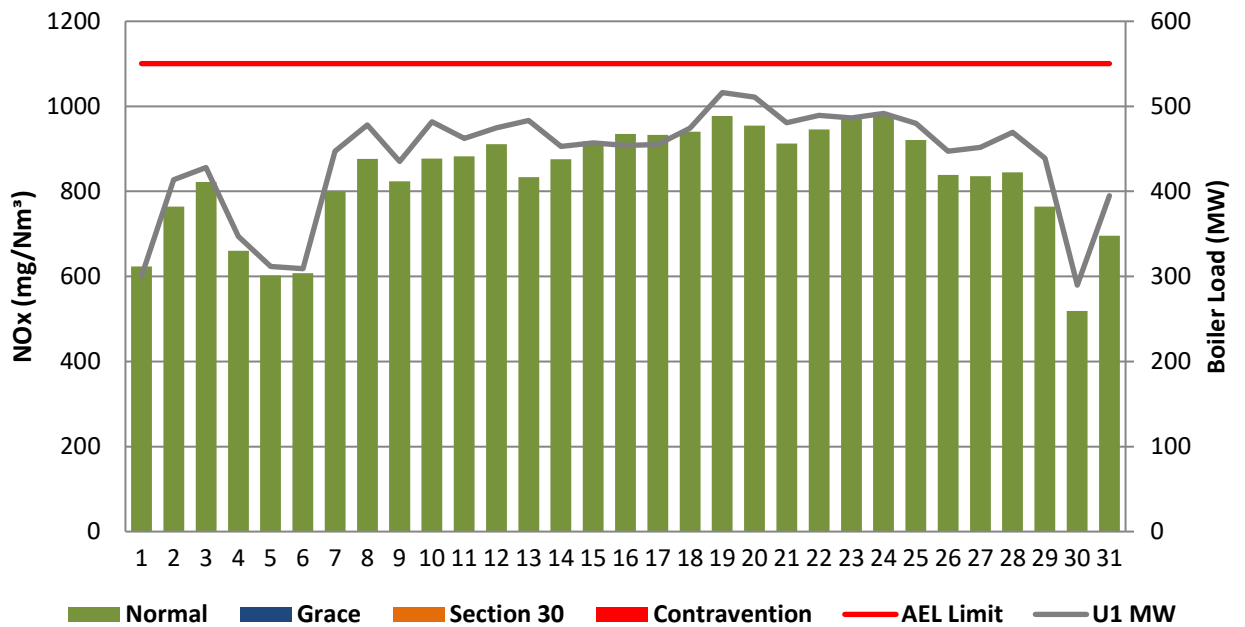


Figure 14: Duvha Unit 2 NOx Emissions - May 2020

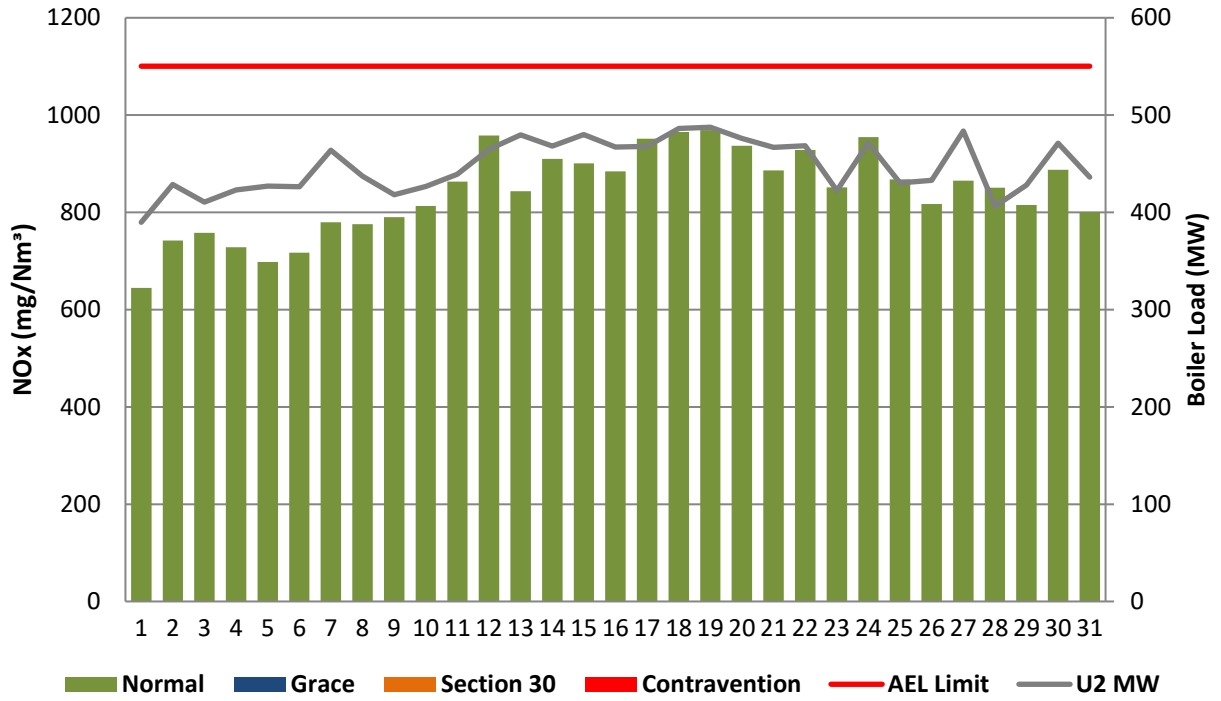


Figure 16: Duvha Unit 4 NOx Emissions - May 2020

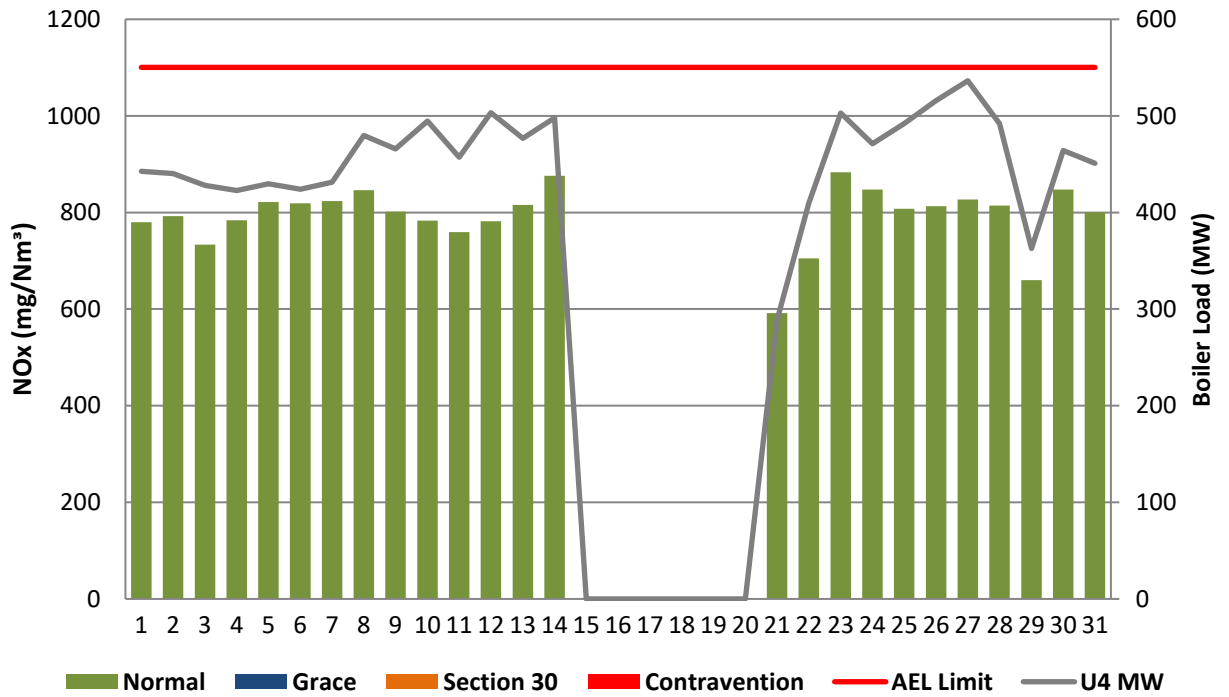


Figure 17: Duvha Unit 5 NOx Emissions - May 2020

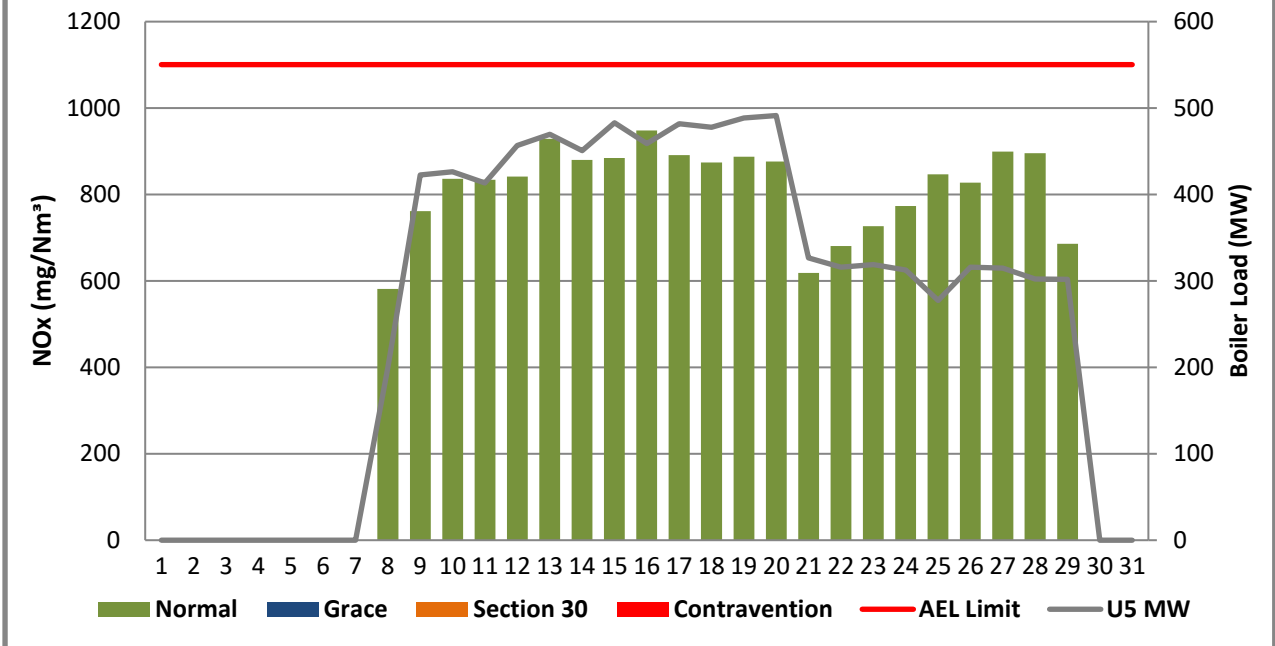
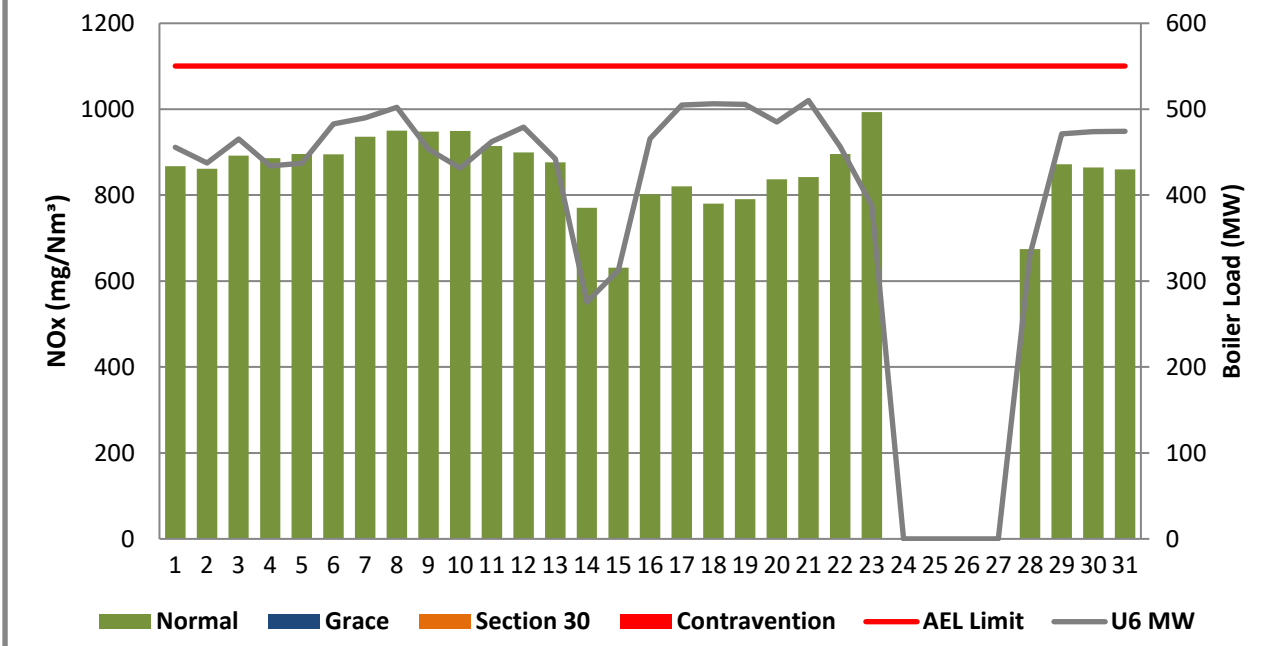


Figure 18: Duvha Unit 6 NOx Emissions - May 2020



7 SHUT DOWN AND LIGHT UP INFORMATION

Tables 7.1: Shut-down and light-up information for the month of May 2020

Unit No.1	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>8:15 PM</i>	<i>2020/05/31</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<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	<i>n/a</i>	DD:HH:MM
Fires in time	<i>1:25 AM</i>	<i>2020/05/01</i>		
Synch. to Grid (or BC)	<i>6:10 PM</i>	<i>2020/05/01</i>		
Fires in to BC (duration)	<i>00:16:45</i>	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>		
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM

Unit No.4	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>3:35 PM</i>	<i>2020/05/14</i>	<i>7:05 PM</i>	<i>2020/05/28</i>
Draught Group (DG) Shut Down (SD)	<i>5:35 PM</i>	<i>2020/05/14</i>	<i>8:50 PM</i>	<i>2020/05/28</i>
BO to DG SD (duration)	<i>00:02:00</i>	DD:HH:MM	<i>00:01:45</i>	DD:HH:MM
Fires in time	<i>5:25 AM</i>	<i>2020/05/21</i>	<i>7:50 AM</i>	<i>2020/05/29</i>
Synch. to Grid (or BC)	<i>11:45 AM</i>	<i>2020/05/21</i>	<i>7:15 PM</i>	<i>2020/05/29</i>
Fires in to BC (duration)	<i>00:06:20</i>	DD:HH:MM	<i>00:11:25</i>	DD:HH:MM
Emissions below limit from BC (end date)	<i>3:00 AM</i>	<i>2020/05/22</i>	<i>2:00 AM</i>	<i>2020/05/30</i>
Emissions below limit from BC (duration)	<i>00:15:15</i>	DD:HH:MM	<i>00:06:45</i>	DD:HH:MM

Unit No.5	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>12:25 PM</i>	<i>2020/05/24</i>	<i>5:25 PM</i>	<i>2020/05/29</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>1:20 PM</i>	<i>2020/05/24</i>	<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	<i>00:00:55</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM
Fires in time	<i>11:20 AM</i>	<i>2020/05/08</i>	<i>9:35 AM</i>	<i>2020/05/25</i>		
Synch. to Grid (or BC)	<i>5:20 PM</i>	<i>2020/05/08</i>	<i>1:00 PM</i>	<i>2020/05/25</i>		
Fires in to BC (duration)	<i>00:06:00</i>	DD:HH:MM	<i>00:03:25</i>	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	<i>1:00 AM</i>	<i>2020/05/10</i>	<i>12:00 AM</i>	<i>2020/05/26</i>		

Emissions below limit from BC (duration)	01:07:40	DD:HH:MM	00:11:00	DD:HH:MM		DD:HH:MM
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Unit No.6	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	5:35 PM	2020/05/13	11:35 AM	2020/05/23
Draught Group (DG) Shut Down (SD)	5:50 PM	2020/05/14	12:55 AM	2020/05/28
BO to DG SD (duration)	01:00:15	DD:HH:MM	04:13:20	DD:HH:MM
Fires in time	12:25 AM	2020/05/15	11:10 AM	2020/05/28
Synch. to Grid (or BC)	4:05 AM	2020/05/15	4:40 PM	2020/05/28
Fires in to BC (duration)	00:03:40	DD:HH:MM	00:05:30	DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2020/05/16	3:00 PM	2020/05/29
Emissions below limit from BC (duration)	00:19:55	DD:HH:MM	00:22:20	DD:HH:MM

8 General

The gaseous emissions parallel tests curves for Units 1, 5, and 6 are expired. Unit 1 expired on 05/12/2019, and both Unit 5 & 6 expired on 31/01/2020.

Unit 5 parallel test was conducted on 18 -24 May 2020 and Station is awaiting the report from the Supplier.

Unit 6 parallel test was conducted on 22/06/2020 and the Station is awaiting the report from the Supplier.

Planned Parallel tests dates:

Unit 1 parallel test was started on 29th of May 2020 and was planned to be completed on the 1st of July 2020 but the unit tripped on the 1st of July 2020. The test will now be completed before the end of August 2020.

Unit 2 parallel test was planned to be conducted on 22/06/2020 but the unit tripped on that day. The test will now be completed before the end of August 2020.

Unit 3 was offload during the month of May 2020.

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

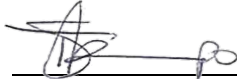
9 Complaints and 10 Incidents Register

Refer to addendum A


Boiler Plant Engineering
Manager

03 Jul 2020

Date


Environmental
Manager

2020/07/02

Date


Engineering Manager

08/07/2020

Date

Compiled by: Environmental Officer

For: Nkangala District
Municipality

Air Quality 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
Production Manager
Boiler Engineering Manager
System Engineer
Environmental
Manager

