



Generation

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DUVHA POWER STATION

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

GENERAL MANAGER

2020-06-30

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 Apr-2020
	Coal	Tons/month	1 400 000	560920.98
	Fuel Oil	Tons/month	5 000	3455.16
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Apr-2020
	Energy	GWh	3600	868.07
	Ash	Tons	not specified	146 680.80
	RE Ash	kg/MWh	not specified	0.44

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to 1.2	0.73
Ash Content	%	27 to 30	26.15

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 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Apr-2020
Unit 1	Fabric Filter Plant (FFP)	99.85%
Unit 2	Fabric Filter Plant (FFP)	99.90%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Electro Static Precipiator (ESP)	99.66%
Unit 5	Electro Static Precipiator (ESP)	99.61%
Unit 6	Electro Static Precipiator (ESP)	99.50%
Unit 4	Chemithon (SO ₃)	90.00 %
Unit 5	Chemithon (SO ₃)	95.00%
Unit 6	Chemithon (SO ₃)	98.00%

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	100.0	99.7	99.7
Unit 2	100.0	97.2	97.2
Unit 4	97.6	100.0	100.0
Unit 5	99.5	99.8	99.8
Unit 6	97.1	99.5	99.5

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of April 2020

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	68.6	3 219	1 763
Unit 2	3.5	219	91
Unit 4	121.8	1 948	1 258
Unit 5	67.9	1 570	685

Unit 6	150.2	2 040	1 165
SUM	412.0	8 996	4 962

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	30	0	0	0	0	32.1
Unit 2	2	0	0	0	0	33.2
Unit 4	18	6	0	0	6	79.9
Unit 5	11	3	0	0	3	106.7
Unit 6	12	4	0	5	9	120.5
SUM	73	13	0	5	18	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	30	0	0	0	0	1 503.6
Unit 2	4	0	0	0	0	1 139.2
Unit 4	26	0	0	0	0	1 172.8
Unit 5	17	0	0	0	0	1 735.5
Unit 6	23	0	0	0	0	1 497.4
SUM	100	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	30	0	0	0	0	823.1
Unit 2	4	0	0	0	0	459.3
Unit 4	26	0	0	0	0	753.1
Unit 5	17	0	0	0	0	738.5
Unit 6	23	0	0	0	0	845.6
SUM	100	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 - April 2020

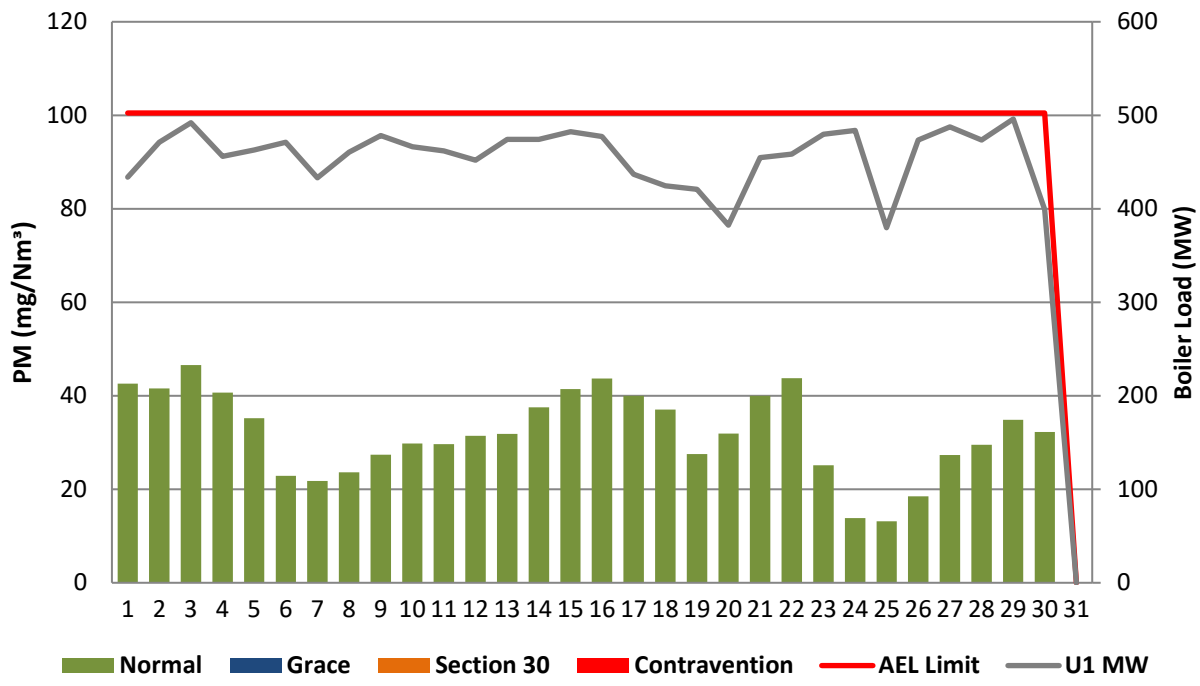


Figure 2: Duvha Unit 2 PM Emissions - April 2020

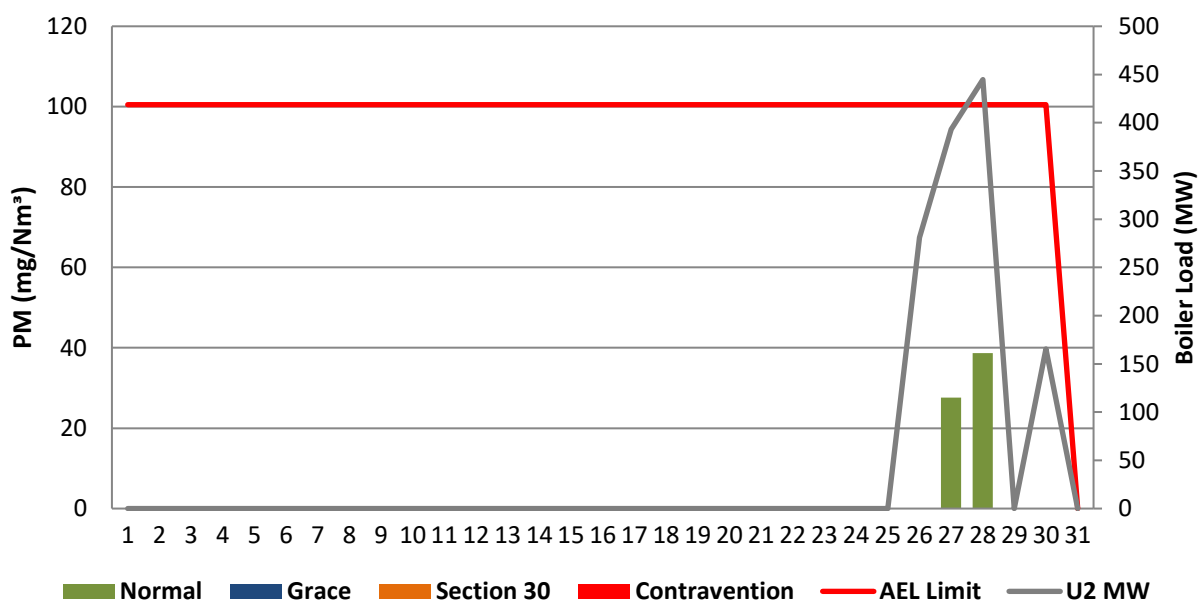


Figure 4: Duvha Unit 4 PM Emissions - April 2020

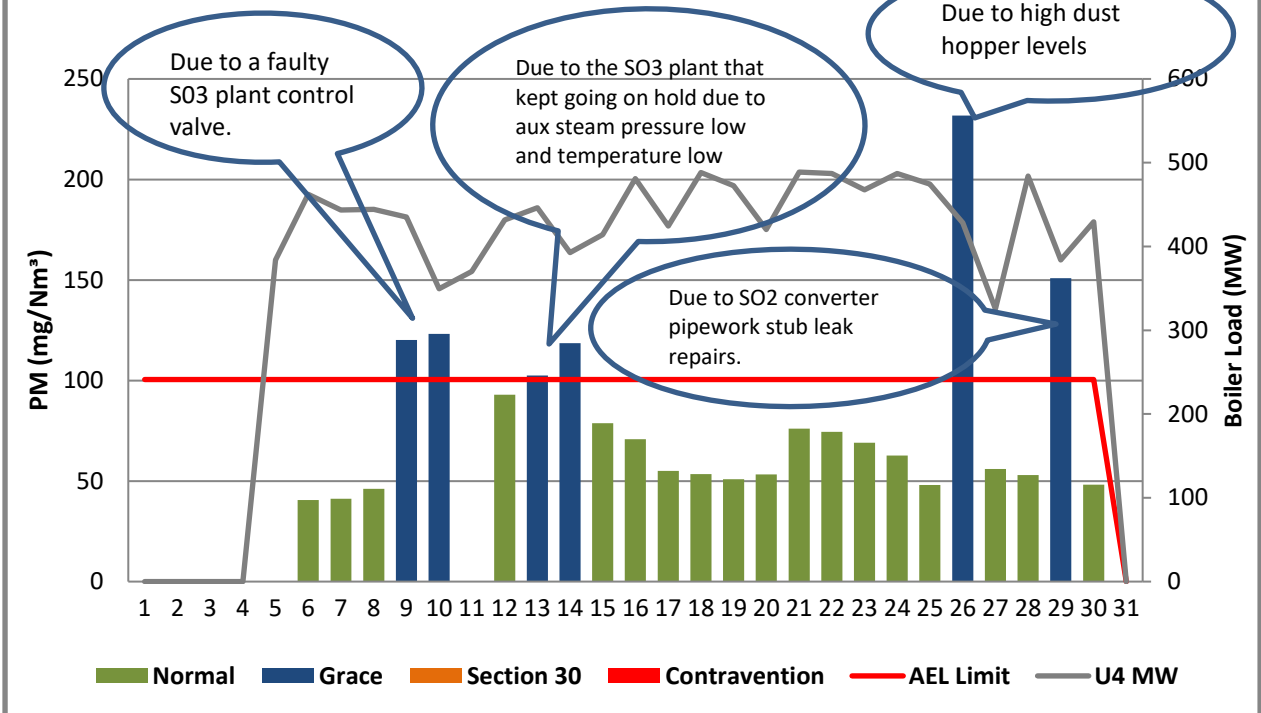


Figure 5: Duvha Unit 5 PM Emissions - April 2020

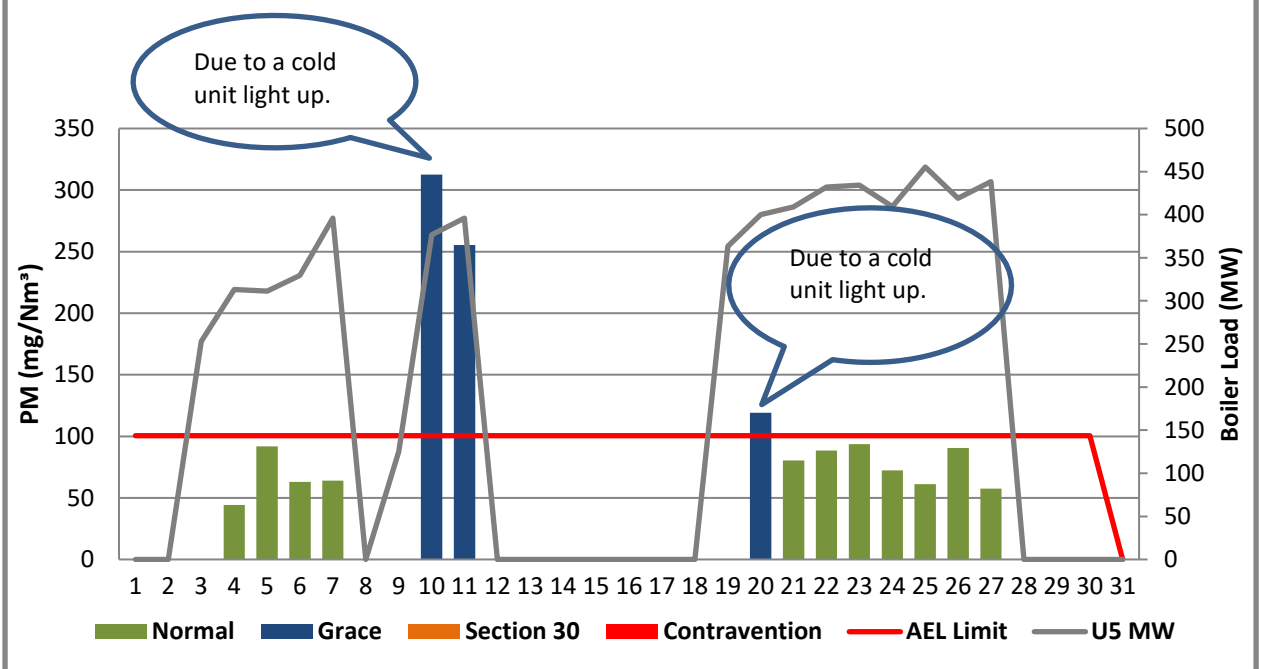


Figure 6: Duvha Unit 6 PM Emissions - April 2020

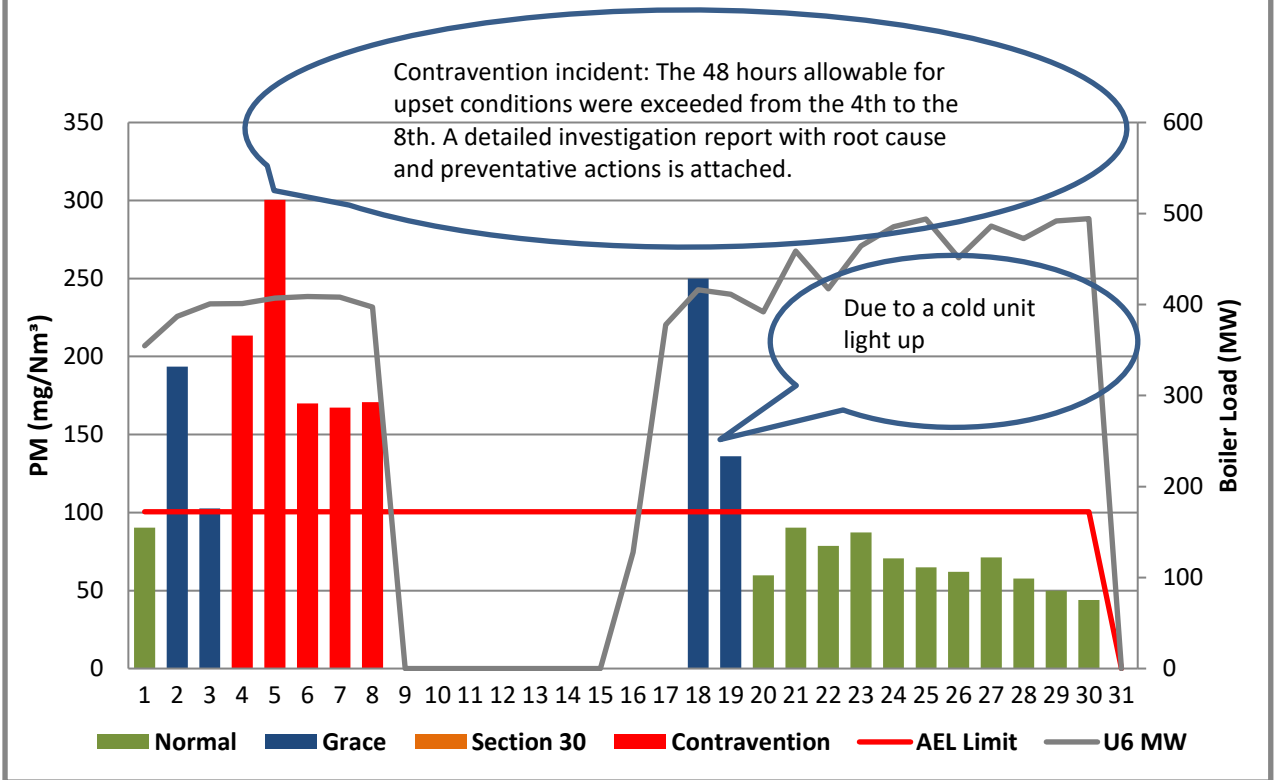


Figure 7: Duvha Unit 1 SOx Emissions - April 2020

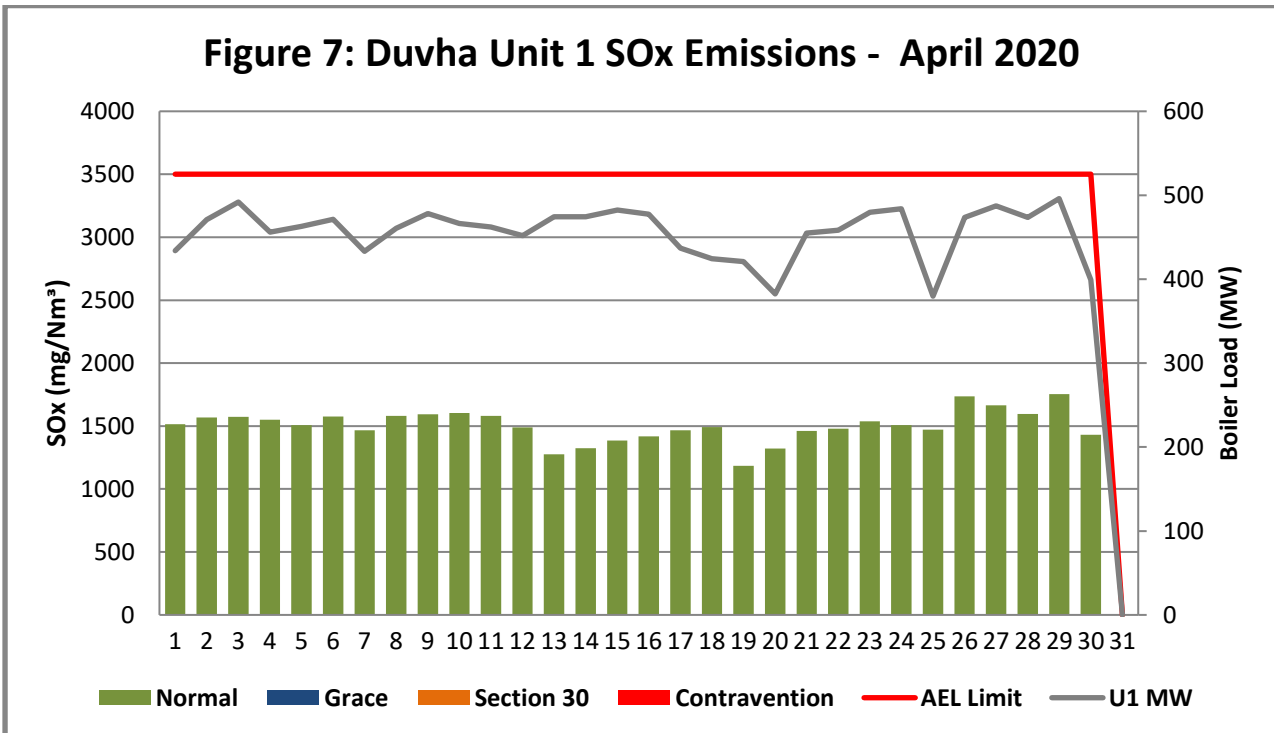


Figure 8: Duvha Unit 2 SOx Emissions - April 2020

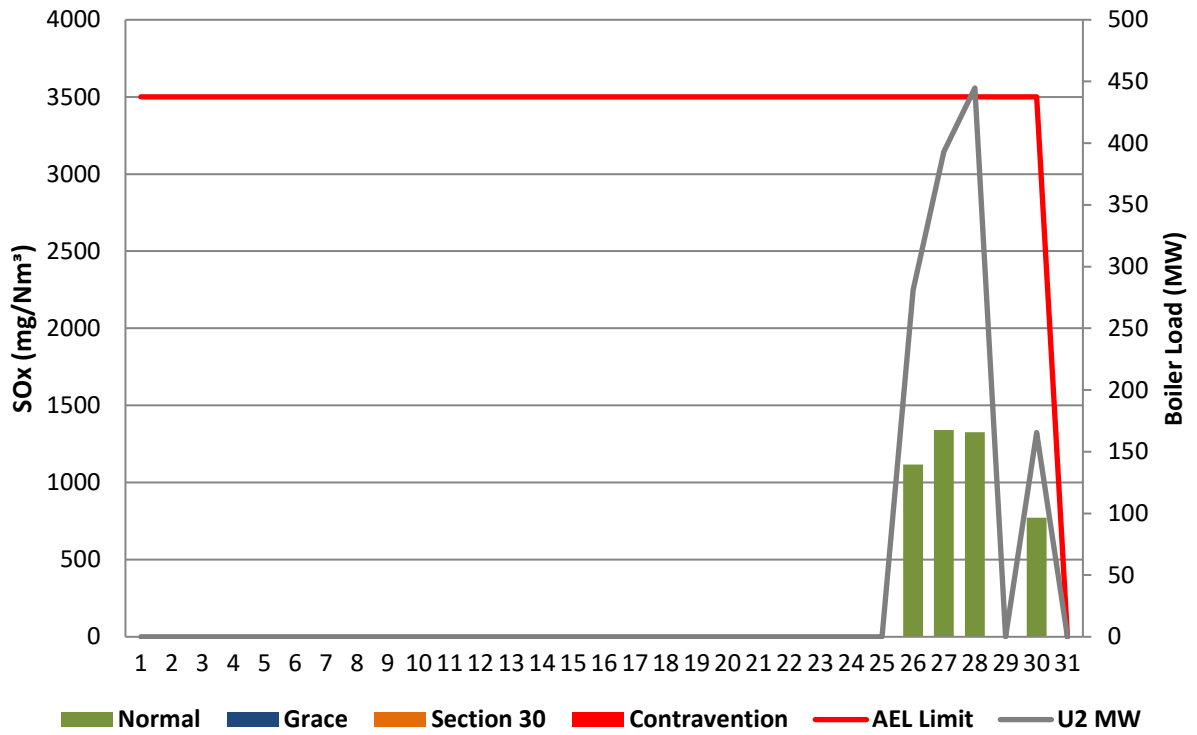


Figure 10: Duvha Unit 4 SOx Emissions - April 2020

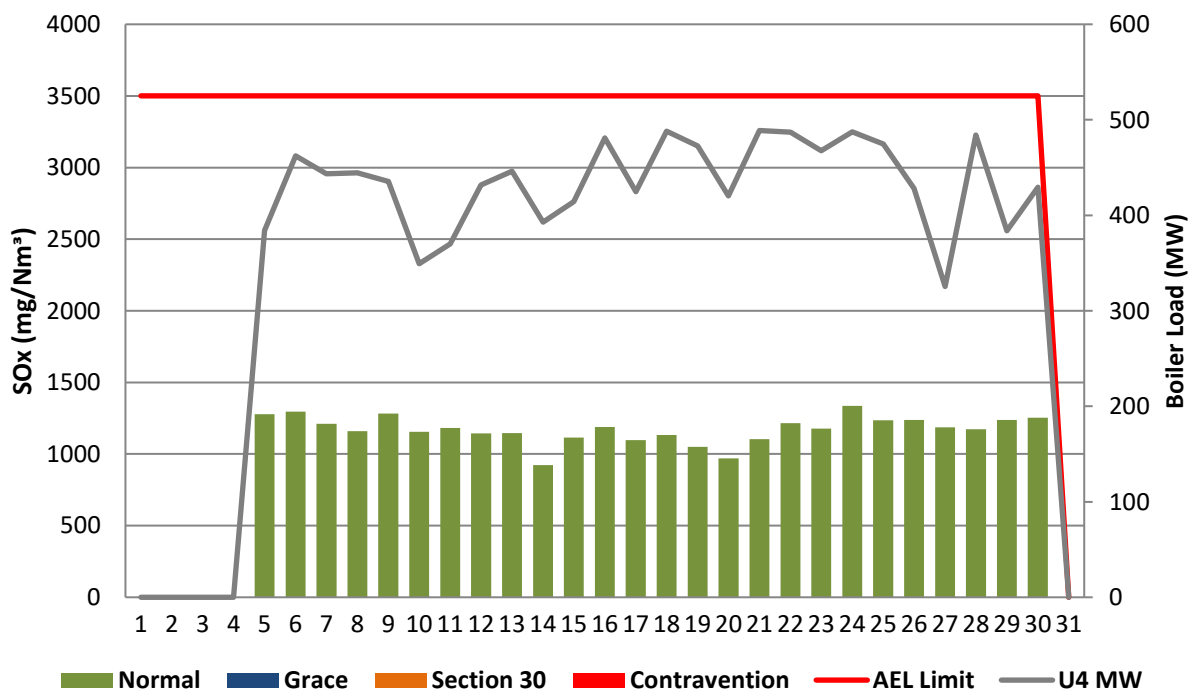


Figure 11: Duvha Unit 5 SOx Emissions - April 2020

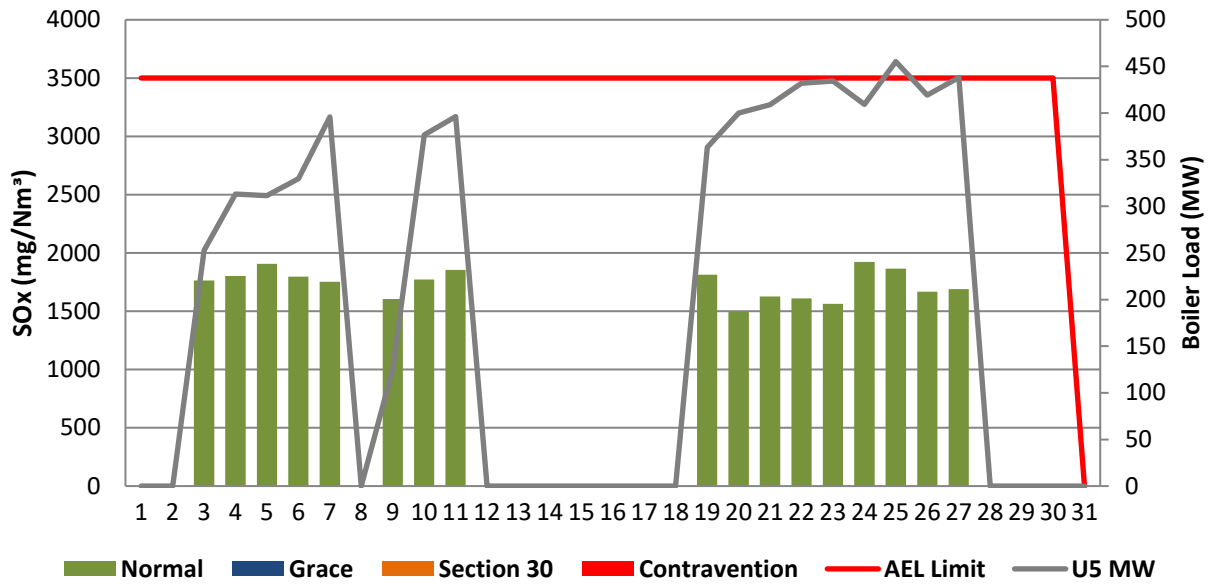


Figure 12: Duvha Unit 6 SOx Emissions - April 2020

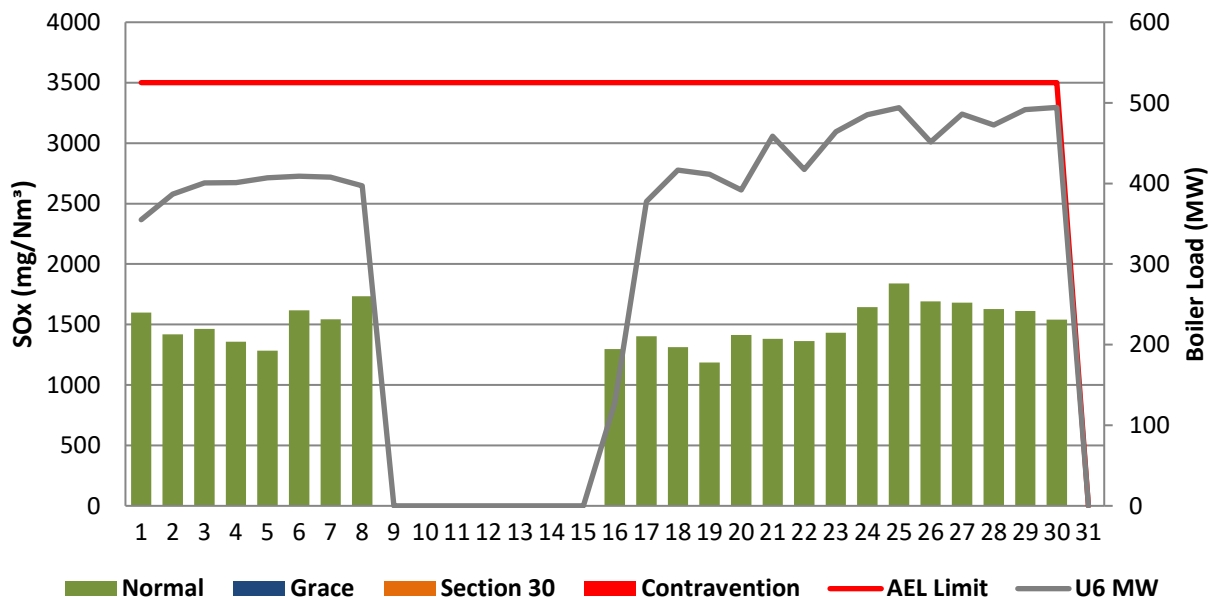


Figure 13: Duvha Unit 1 NOx Emissions - April 2020

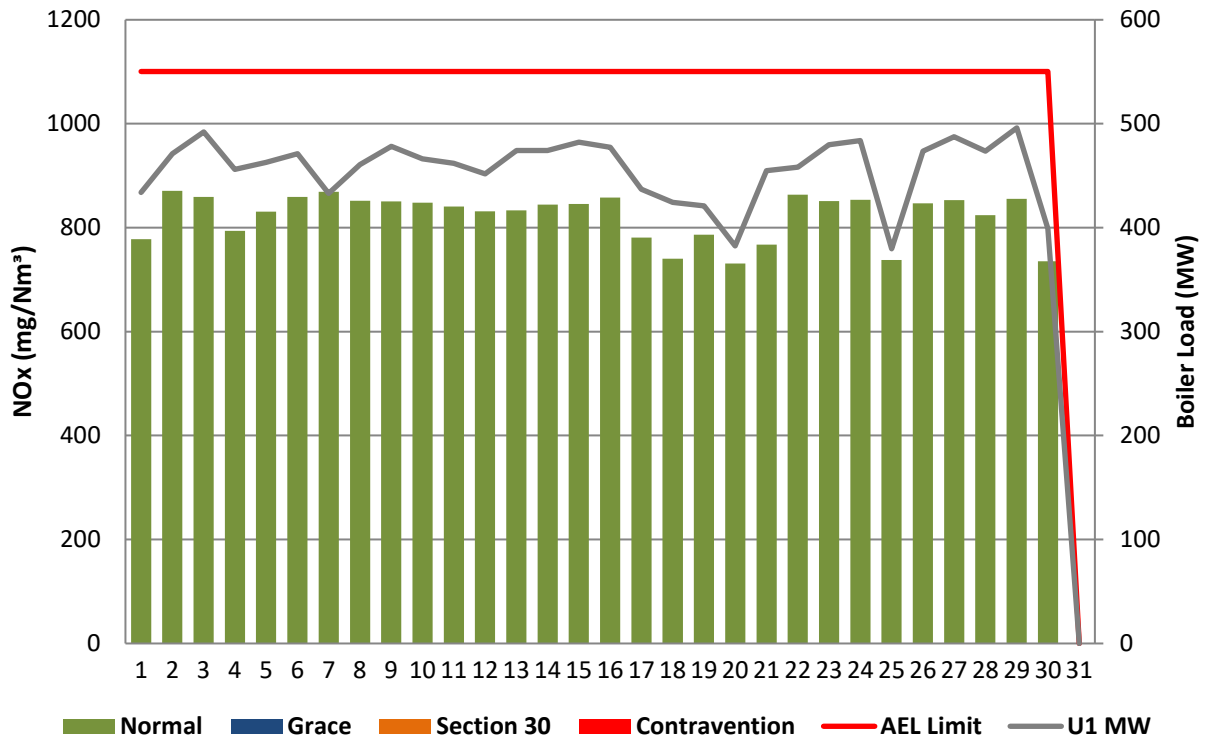


Figure 14: Duvha Unit 2 NOx Emissions - April 2020

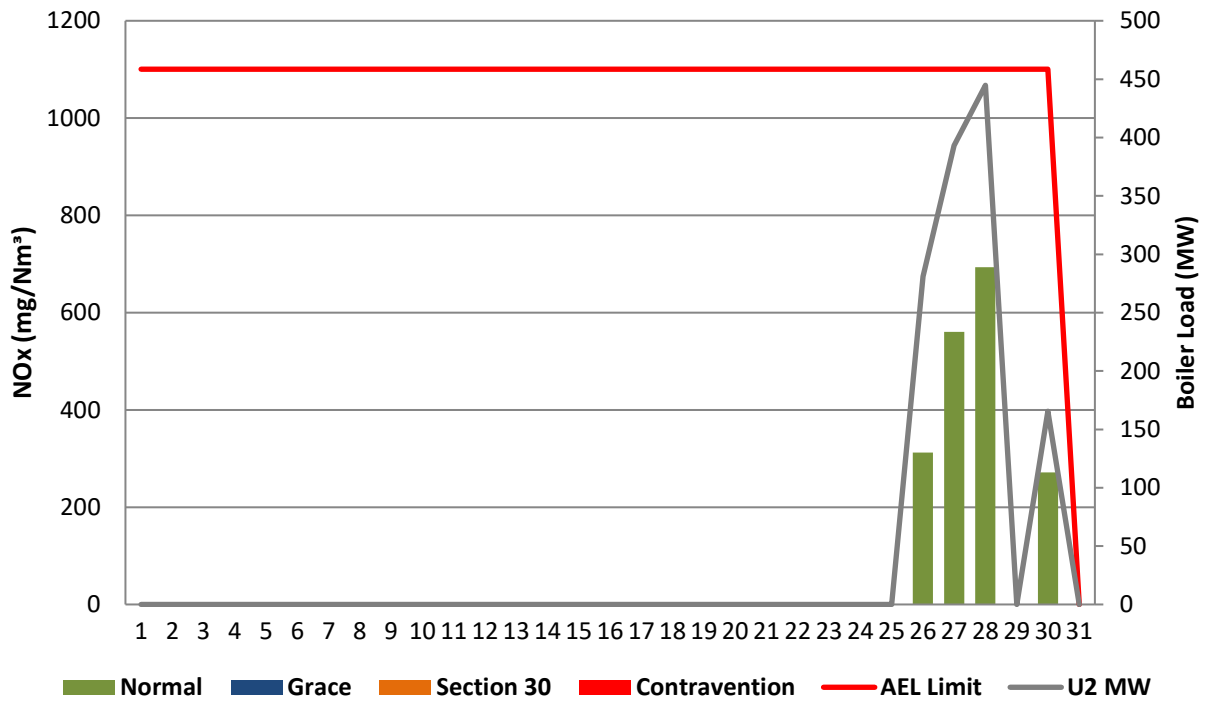


Figure 16: Duvha Unit 4 NOx Emissions - April 2020

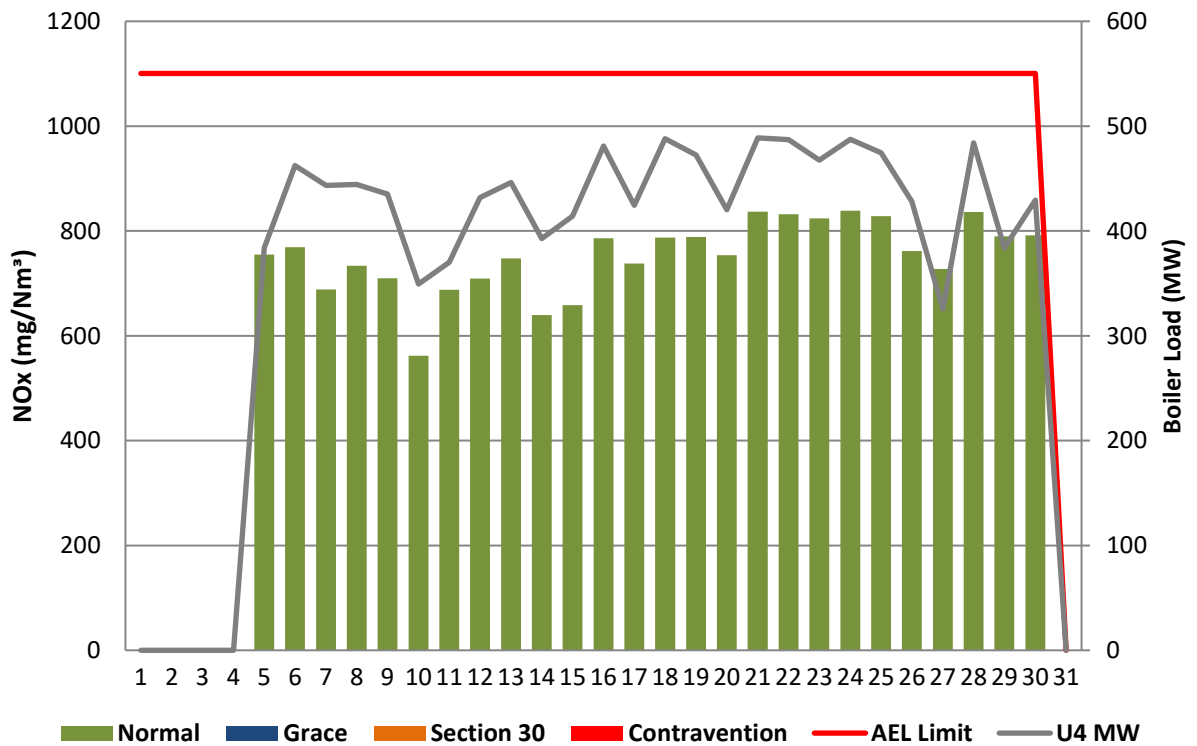


Figure 17: Duvha Unit 5 NOx Emissions - April 2020

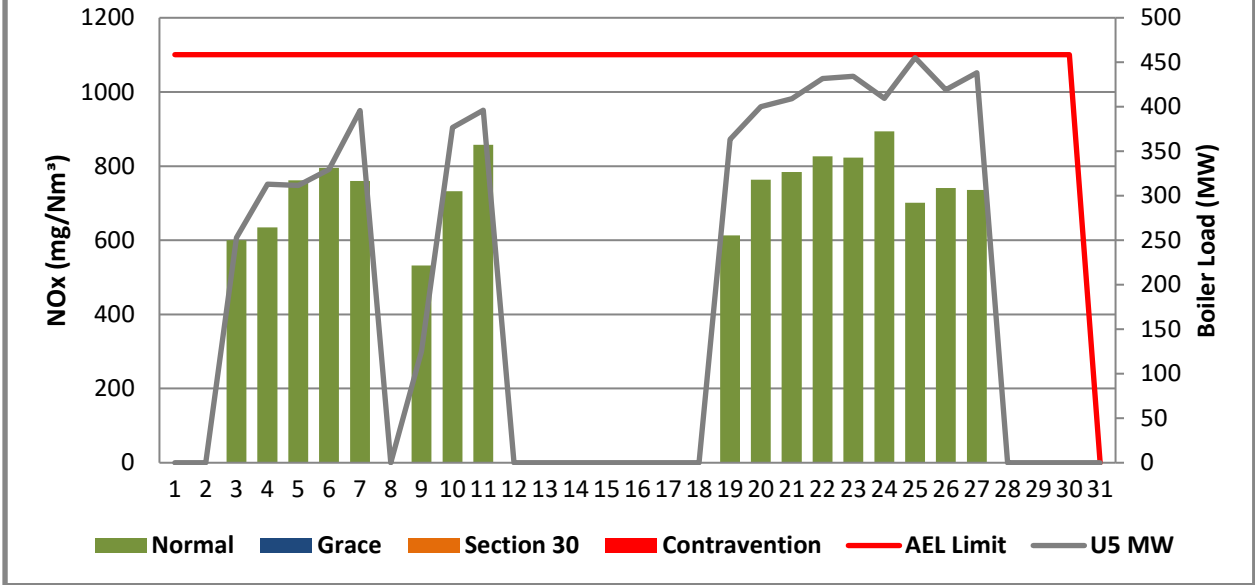
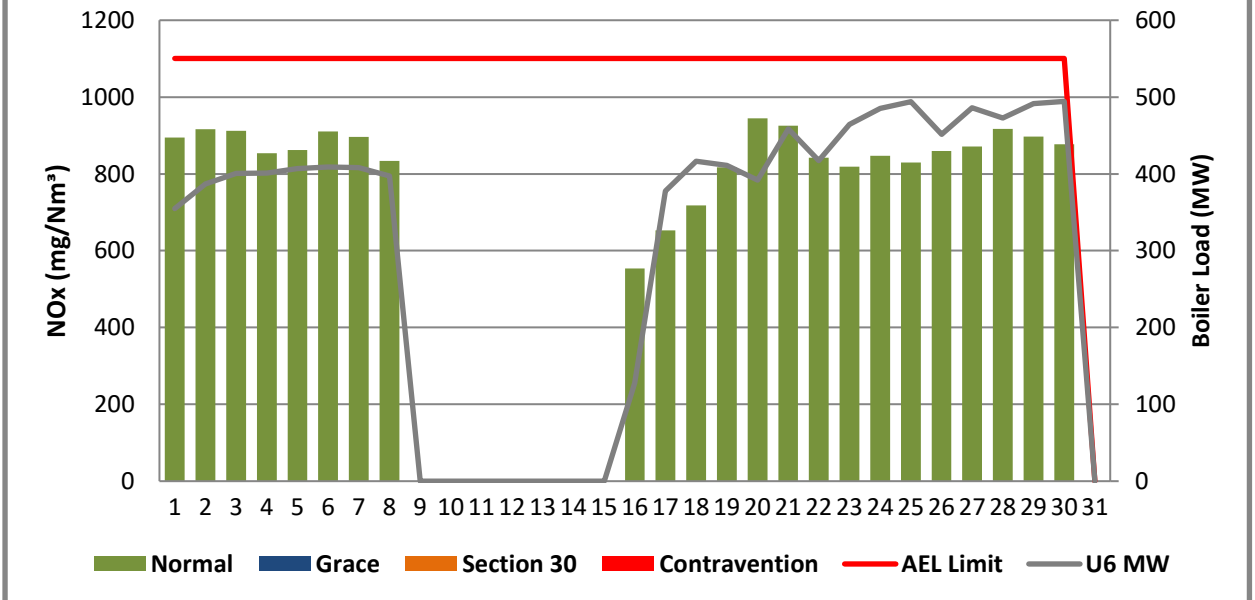


Figure 18: Duvha Unit 6 NOx Emissions - April 2020



7 SHUT DOWN AND LIGHT UP INFORMATION

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

Unit No.1	<i>Event 1</i>	
Breaker Open (BO)	<i>8:55 PM</i>	<i>2020/04/30</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.2	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>7:35 PM</i>	<i>2020/04/28</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>9:30 AM</i>	<i>2020/04/29</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:13:55</i>	DD:HH:MM
Fires in time	<i>4:50 AM</i>	<i>2020/04/25</i>	<i>9:00 AM</i>	<i>2020/04/30</i>
Synch. to Grid (or BC)	<i>5:00 AM</i>	<i>2020/04/26</i>	<i>9:45 PM</i>	<i>2020/04/30</i>
Fires in to BC (duration)	<i>01:00:10</i>	DD:HH:MM	<i>00:12:45</i>	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.4	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>10:55 PM</i>	<i>2020/04/10</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>12:50 AM</i>	<i>2020/04/11</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:01:55</i>	DD:HH:MM

Fires in time	12:30 PM	2020/04/05	3:15 AM	2020/04/11
Synch. to Grid (or BC)	5:20 PM	2020/04/05	6:45 AM	2020/04/11
Fires in to BC (duration)	00:04:50	DD:HH:MM	00:03:30	DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2020/04/06	12:00 AM	2020/04/12
Emissions below limit from BC (duration)	00:06:40	DD:HH:MM	00:17:15	DD:HH:MM

Unit No.5	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	BO previously	BO previously	11:25 AM	2020/04/07	11:45 PM	2020/04/11	4:40 PM	2020/04/27
Draught Group (DG) Shut Down (SD)	n/a	n/a	2:00 PM	2020/04/09	2:50 AM	2020/04/12	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD:HH:MM	02:02:35	DD:HH:MM	00:03:05	DD:HH:MM	n/a	DD:HH:MM
Fires in time	12:40 AM	2020/04/03	3:35 PM	2020/04/09	5:15 AM	2020/04/19		
Synch. to Grid (or BC)	6:25 AM	2020/04/03	10:25 PM	2020/04/09	11:20 AM	2020/04/19		
Fires in to BC (duration)	00:05:45	DD:HH:MM	00:06:50	DD:HH:MM	00:06:05	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2020/04/04	12:00 AM	2020/04/13	3:00 AM	2020/04/20		
Emissions below limit from BC (duration)	00:17:35	DD:HH:MM	03:01:35	DD:HH:MM	00:15:40	DD:HH:MM		DD:HH:MM

Unit No.6	Event 1		Event 2	
Breaker Open (BO)	10:15 PM	2020/04/08	2:10 PM	2020/04/22
Draught Group (DG) Shut Down (SD)	8:40 AM	2020/04/16	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	07:10:25	DD:HH:MM	n/a	DD:HH:MM
Fires in time	11:25 PM	2020/04/16		
Synch. to Grid (or BC)	4:45 AM	2020/04/17		
Fires in to BC (duration)	00:05:20	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2020/04/19		
Emissions below limit from BC (duration)	01:19:15	DD:HH:MM		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.

Planned Parallel tests dates:

Unit 1 parallel test was started on 29th of May 2020 and will completed on 01 July 2020.

Unit 2 and Unit 6 parallel tests are planned for 18 -25 June 2020.

Unit 3 was offload during the month of April 2020 2019.

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 Complains and Incidents Register

Refer to addendum A



Boiler Plant Engineering
Manager

24/06/2020

Date



Environmental
Manager

2020/06/22

Date



Engineering Manager

29 June 2020

Date

Compiled

by: Environmental Department

For: Department of Environmental Affairs and
Tourism

Chief Air Pollution Control
Officer

Copies: Eskom Environmental Management

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Boiler Engineering Manager
System Engineer
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Officer
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Production
Manager

