

ภาคผนวก ง

โครงการศึกษาเพื่อสำรวจและวิเคราะห์สาเหตุและ
ปัจจัยที่ทำให้เกิดโอโซนในพื้นที่โดยรอบโรงไฟฟ้าราชบุรี



บริษัท ราชบุรีเพาเวอร์ จำกัด

Ratchaburi Power Co.,Ltd.

รายงานฉบับสมบูรณ์

โครงการศึกษาเพื่อสำรวจและวิเคราะห์สาเหตุและปัจจัยที่ทำให้เกิดโอโซน
ในพื้นที่โดยรอบโรงไฟฟ้าราชบุรีและพื้นที่จังหวัดราชบุรี



บริษัท ซีคอต จำกัด

กรกฎาคม 2551

ภาคผนวก จ-1

ผลการตรวจวัดคุณภาพอากาศ
แบบอัตโนมัติอย่างต่อเนื่อง (CEMs)



STANDARD GAS FOR CEMs REMAINING REPORT

																						Jan-22				
STANDARD	Full condition	HRSG 11						HRSG 12						HRSG 21						HRSG 22						TOTAL
GAS	(Psi)	Time	Liter	Expired date	Order status	(Psi)	Time	Liter	Expired date	Order status	(Psi)	Time	Liter	Expired date	Order status	(Psi)	Time	Liter	Expired date	Order status	(Psi)	Time	Liter			
				Cylinder Number	Spare Standard gas				Cylinder Number	Spare Standard gas				Cylinder Number	Spare Standard gas				Cylinder Number	Spare Standard gas				Cylinder Number	Spare Standard gas	
N ₂	2000	35	31	1090	30	16.90	31-Dec-27	Waiting delivery from vendor	1030	28	15.97	31-Dec-27	Waiting delivery from vendor	1510	44	23.41	31-Dec-27	Waiting delivery from vendor	1030	28	15.97	12-Sep-27	Waiting delivery from vendor	72.23		
CEM ₄	2000	34	31	1590	28	24.65	01-Sep-22		1290	21.8	20.09	08-Sep-28		1310	22	20.31	08-Sep-28		1250	21	19.38	08-Sep-28		84.32		
							Estimated Recorder due date	Estimated Recorder due date				Estimated Recorder due date	Estimated Recorder due date													
							Mar-22	Feb-22				Jun-22	Feb-22													
							Mar-22	Jun-22				Jun-22	Jun-22													
NO _x	2000	34	31	1590	11	16.28	18-Feb-28	Spare	710	7	11.01	28-Sep-28	Spare	860	9	13.33	28-Sep-28	Spare	1710	20	26.51	08-Jul-28		67.12		
SO ₂	2000	34	31	1110	18	17.21	17-Aug-28		790	11.8	19.75	10-Jan-28	Spare	870	15.4	24.25	23-Nov-28	Waiting delivery from vendor	680	9.6	17.06	23-Nov-28	Spare	78.21		
							Estimated Recorder due date	Estimated Recorder due date				Estimated Recorder due date	Estimated Recorder due date													
							Dec-21	Dec-21				Nov-21	Nov-21													
							Dec-21	Dec-21				Nov-21	Nov-21													
CO	2000	35	50	50	20	27.50	20-Mar-25		1910	34	44.88	20-Oct-28		2090	38	49.12	20-Oct-28		1790	32	42.07	19-Oct-28		163.56		
Estimated Recorder due date	Estimated Recorder due date	Estimated Recorder due date	Estimated Recorder due date																							
Apr-22	Dec-22	Dec-22	Dec-22																							
Apr-22	Dec-22	Dec-22	Dec-22																							
O ₂	2000	34	47	1170	19	27.50	SNS89																			

*Note : Normal Pressure is 2000 PSI.

N2: Calibrate 1 time / 1 week NO_x, SO₂, CO, O₂: Calibrate 1 time / 2 week *EPD: Expired date, CN: Cylinder Number, ES PE: Estimated Recorder Due Date

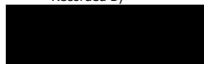
Spare Standard Gas *N2 Has Store 31,50 Litre

*NO_x Has Store 31 Litre*SO₂ Has Store 31 Litre (CC747327 6-JUL-2029, EB0146949 06-DEC-2029, EB0146956 06-DEC-2029)

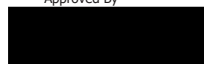
*CO Has Store 31,50 Litre (CC746718 16-NOV-2029, CC746735 16-NOV-2029)

*O₂ Has Store 34 Litre

Recorded By



Approved By



2-Feb-22

Report CEM Jan-22

HRSG 11

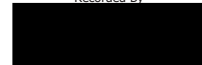
Description		Unit / Hr.	Fuel Gas					Fuel Oil					Air Control Standard		
			Maximum		Flow	Average Values	Minimum Values	%tile 90 Values	Maximum		Flow	Average Values	Minimum Values	Fuel Gas	Fuel Oil
			Values	Day					Values	Day					
SO ₂ 7%O ₂		ppm.	5.14	30/1/2022 00:00	871.86	3.76	3.24	3.99						96	18.88
NO _x 7%O ₂		ppm.	89.50	24/1/2022 13:00	1,626.48	57.95	40.98	76.26						690	152
CO 7%O ₂		ppm.	9.20	14/1/2022 03:00	870.48	5.87	4.04	7.26						690	690
Opacity		%	5.14	14/1/2022 03:00	842.79	2.24	1.70	2.53							
O ₂		%	13.99	26/1/2022 11:00	955.40	13.74	13.44	13.89							
Flow		1000M ³ /Hr	1,658.07	24/1/2022 09:00		1,208.88	831.35	1,594.55							

HRSG 12

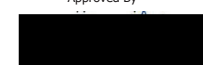
Description		Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
			Maximum			Flow	Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
			Values	Day						Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	2.66	14/1/2022 02:00	883.30	2.08	1.56	2.49									18.88
NO _x 7%O ₂	ppm.	73.16	13/1/2022 18:00	1,545.23	50.44	35.84	68.53								96	152
CO 7%O ₂	ppm.	9.20	14/1/2022 02:00	883.30	5.07	2.72	7.47								690	690
Opacity	%	3.20	13/1/2022 14:00	848.05	0.84	0.35	1.02									
O ₂	%	13.93	24/1/2022 20:00	868.20	13.77	13.54	13.91									
Flow	1000M ³ /Hr	1,639.53	14/1/2022 08:00		1,135.99	848.05	1,578.46									

* Air Control Standard of (EIA)

Recorded By



Approved By



Report CEM Jan-22
HRSG 21

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximun			Average Values	Minimum Values	Fuel Gas	Fuel Oil	
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	-	1/1/2022 00:00	-	-	-	-						96	152	
NO _x 7%O ₂	ppm.	-	1/1/2022 00:00	-	-	-	-						690	690	
CO 7%O ₂	ppm.	-	1/1/2022 00:00	-	-	-	-								
Opacity	%	-	1/1/2022 00:00	-	-	-	-								
O ₂	%	-	1/1/2022 00:00	-	-	-	-								
Flow	1000M ³ /Hr	-	1/1/2022 00:00		-	-	-								

HRSG 22

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximun			Average Values	Minimum Values	Fuel Gas	Fuel Oil	
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	-	1/1/2022 00:00	-	-	-	-						96	152	
NO _x 7%O ₂	ppm.	-	1/1/2022 00:00	-	-	-	-						690	690	
CO 7%O ₂	ppm.	-	1/1/2022 00:00	-	-	-	-								
Opacity	%	-	1/1/2022 00:00	-	-	-	-								
O ₂	%	-	1/1/2022 00:00	-	-	-	-								
Flow	1000M ³ /Hr	-	1/1/2022 00:00		-	-	-								

* Air Control Standard of (EIA)

Recorded By



Approved By



Maintenance Statistic of Environment Protection Equipment

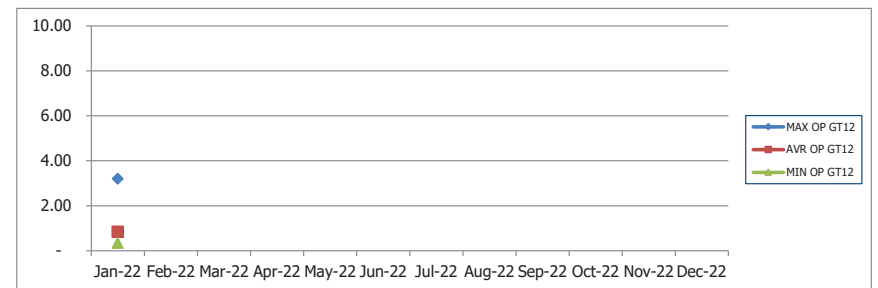
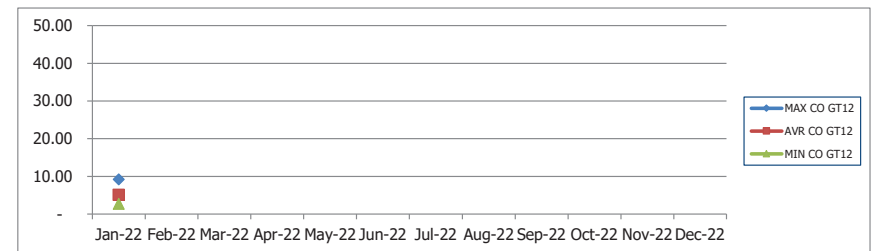
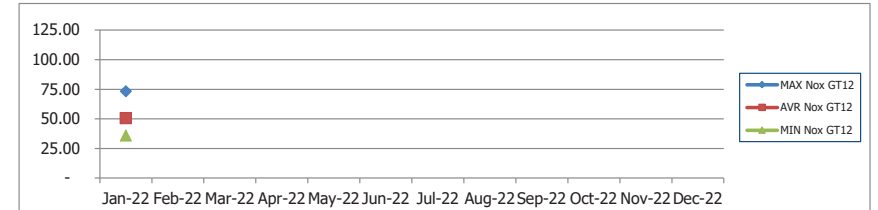
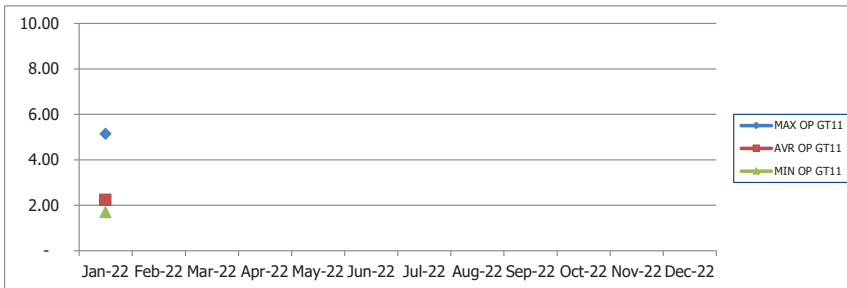
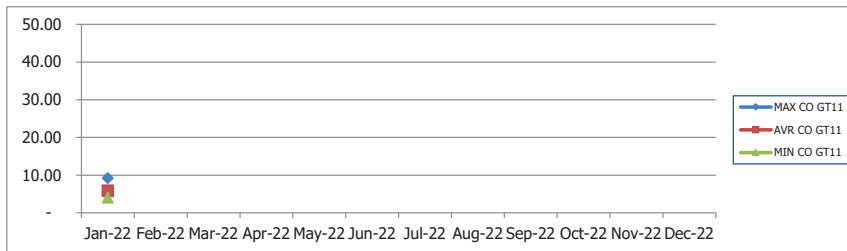
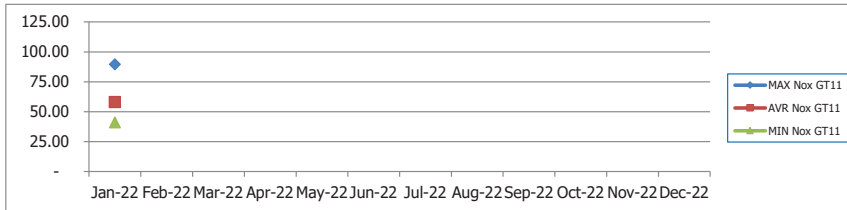
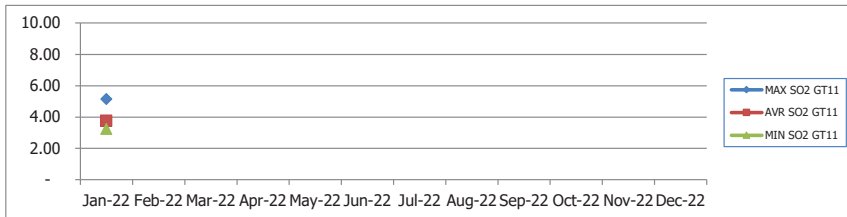
Month: Jan-22

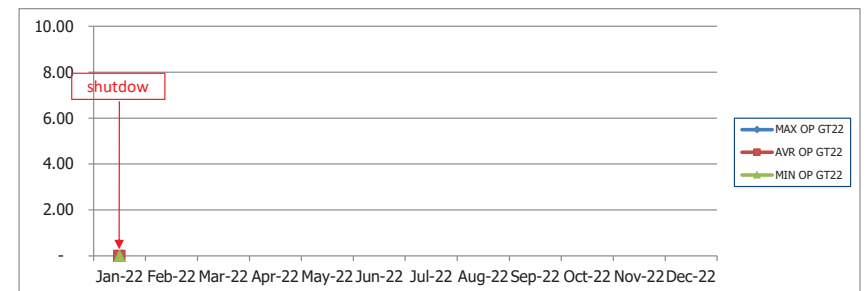
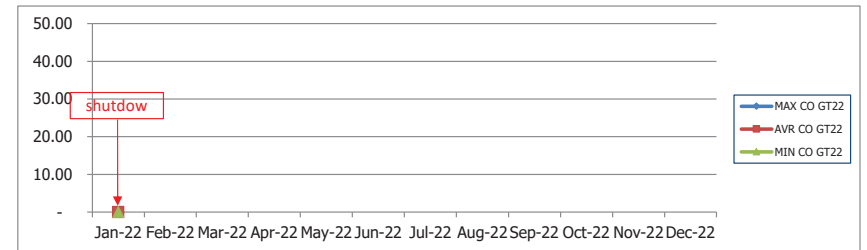
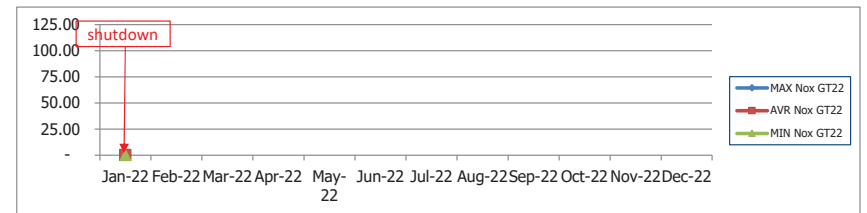
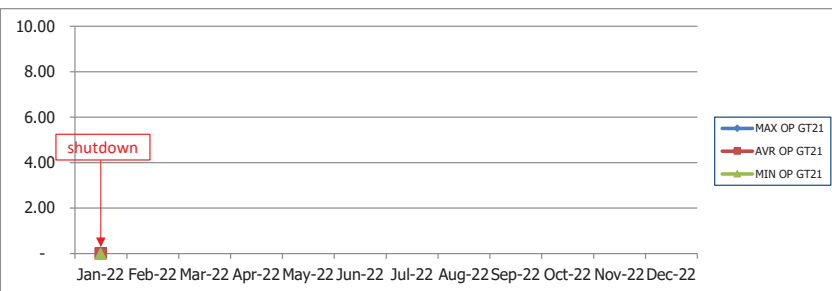
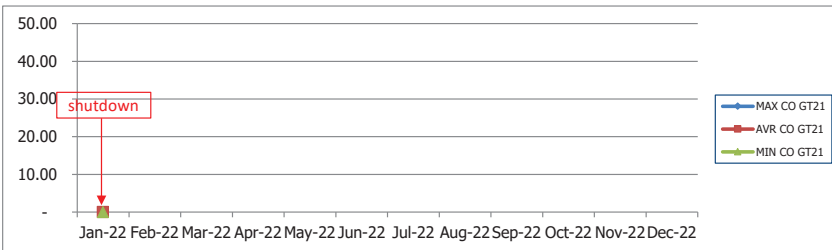
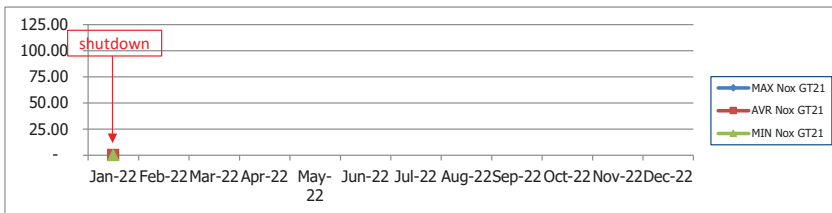
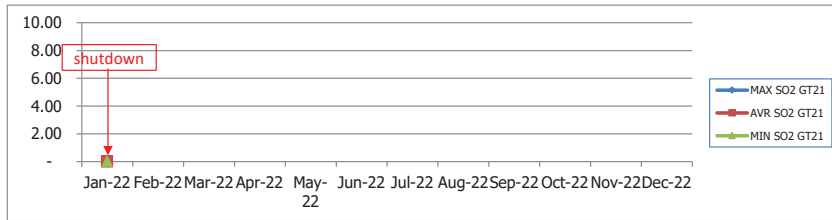
CEMS HRSG11						CEMS HRSG12						CEMS HRSG21						CEMS HRSG22						Waste Water Control								
No. of PM	No. of CM		No. of IM		No. of Exceed Standard	No. of PM	No. of CM		No. of IM		No. of Exceed Standard	No. of PM	No. of CM		No. of IM		No. of Exceed Standard	No. of PM	No. of CM		No. of IM		No. of Exceed Standard	No. of PM	No. of CM		No. of IM		No. of Exceed Standard			
4				-	4				-	4				-	4			-	4				-	1								
Cause of Failure (No. of Incident)						Cause of Failure (No. of Incident)						Cause of Failure (No. of Incident)						Cause of Failure (No. of Incident)						Cause of Failure (No. of Incident)								
Part Damage						-	Part Damage						-	Part Damage						-	Part Damage						-	Part Damage				
Site Conditions						-	Site Conditions						-	Site Conditions						-	Site Conditions						-	Site Conditions				
Human Error						-	Human Error						-	Human Error						-	Human Error						-	Human Error				
Calibration						Calibration						Calibration						Calibration						Calibration								
Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	As Found		As Left	
	Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2	Cal.1	Cal.2	Cal.3	Cal.4		Cal.1	Cal.2	Cal.1	Cal.2
Nox	0.67	0.67	-0.59	-0.59	0.76	0.76	Nox	1.50*	1.50*	-1.33	-1.33	1.58	2.84*	Nox	-0.25	-0.25	-0.25	-0.25	0.08	0.08	Nox	-0.08	-0.08	-0.08	-0.08	0.08	0.08	As Spec	99.30	94.70	99.40	96.25
SOx	0.04	0.04	0.04	0.04	0.31	1.34	SOx	0.02	0.02	0.02	0.02	1.91	0.06	SOx	-0.02	-0.02	-0.02	-0.02	1.35	1.35	SOx	-0.13	-0.13	-0.13	-0.13	1.01	1.01					
CO	0.10	0.10	0.00	0.00	0.92	1.47	CO	0.00	0.00	0.00	0.00	2.75*	3.63*	CO	0.00	0.00	0.00	0.00	0.76	0.76	CO	-0.32	-0.32	-0.32	-0.32	1.63	1.63					
O2	-0.04	-0.04	0.17	0.17	0.08	0.13	O2	2.08*	2.08*	1.00*	1.00*	2.91*	1.73	O2	0.73	0.73	0.73	0.73	0.43	0.43	O2	0.26	0.26	0.26	0.26	0.04	0.04					
Remark																																

* :Re-Calibrate (Zero Diff >=1%) (Span Diff >=2%)

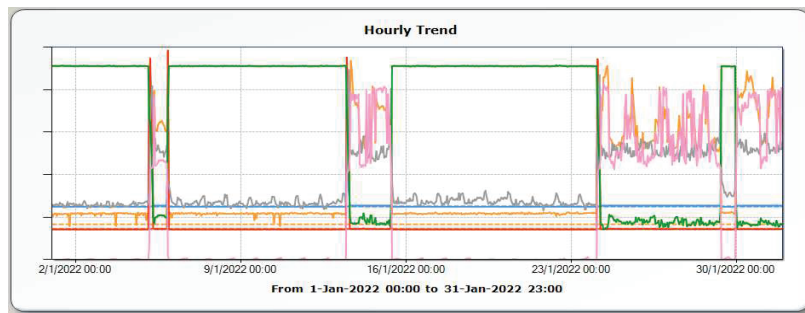
Calibrate and Maintenance Continuous Emission Monitor			page 2
Monthly Report			
D/M/Y	CEMs	Description	Remark
11		<p>Inspection & calibrate Zero and span</p> <p>Insq.Analyzer;Sample gas flow:confirm flow rate of 0</p> <p>Insq.Sampling System Secondary filter 1,2</p> <p>Insq.Drain trap 1; Replace Primary filter element</p> <p>Insq.Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration capacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	PM 65000012
		<p>Inspection & calibrate Zero and span</p> <p>Insq.Analyzer;Sample gas flow:confirm flow rate of 0</p> <p>Insq.Sampling System Secondary filter 1,2</p> <p>Insq.Drain trap 1; Replace Primary filter element</p> <p>Insq.Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration capacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	PM 65000023
11/1/2022		<p>Inspection & calibrate Zero</p> <p>Insq.Analyzer;Sample gas flow:confirm flow rate of 0</p> <p>Insq.Sampling System Secondary filter 1,2</p> <p>Insq.Drain trap 1; Replace Primary filter element</p> <p>Insq.Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration capacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	PM 65000034
22		<p>Inspection & calibrate Zero</p> <p>Insq.Analyzer;Sample gas flow:confirm flow rate of 0</p> <p>Insq.Sampling System Secondary filter 1,2</p> <p>Insq.Drain trap 1; Replace Primary filter element</p> <p>Insq.Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration capacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	PM 65000045
		<p>Inspection & calibrate Zero</p> <p>Insq.Analyzer;Sample gas flow:confirm flow rate of 0</p> <p>Insq.Sampling System Secondary filter 1,2</p> <p>Insq.Drain trap 1; Replace Primary filter element</p> <p>Insq.Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration capacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	PM 65000045

Calibrate and Maintenance Continuous Emission Monitor			page 4
Monthly Report			Jan-22
D/M/Y	CEMs	Description	Remark
		<p>Inspection & calibrate Zero and span</p> <p>Replace see filter element (GC-90) 9507000200</p> <p>Insp. Analyzer: Sample flow: confirm flow rate of 0</p> <p>Insp. Sampling System Secondary filter 1, 2</p> <p>Insp. Drain trap 1; Replace Primary filter element</p> <p>Insp. Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Replace see filter element (PA-SL) 9057003000</p> <p>Replace mist catcher (MC-050A) 9057003000</p> <p>Check the water system drain separator</p> <p>Replace pn filter element 9024000100</p> <p>Clean filter of csm system (Opacity)</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration opacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	<p>PM</p> <p>65001579</p>
	11	<p>Inspection & calibrate Zero and span</p> <p>Replace see filter element (GC-90) 9507000200</p> <p>Insp. Analyzer: Sample flow: confirm flow rate of 0</p> <p>Insp. Sampling System Secondary filter 1, 2</p> <p>Insp. Drain trap 1; Replace Primary filter element</p> <p>Insp. Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Replace mist catcher (MC-050A) 9057003000</p> <p>Check the water system drain separator</p> <p>Replace pn filter element 9024000100</p> <p>Clean filter of csm system (Opacity)</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration opacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	<p>PM</p> <p>65001596</p>
25/1/2022	12	<p>Inspection & calibrate Zero</p> <p>Insp. Analyzer: Sample flow: confirm flow rate of 0</p> <p>Insp. Sampling System Secondary filter 1, 2</p> <p>Insp. Drain trap 1; Replace Primary filter element</p> <p>Insp. Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Replace see filter element (PA-SL) 9057003000</p> <p>Replace mist catcher (MC-050A) 9057003000</p> <p>Check the water system drain separator</p> <p>Replace pn filter element 9024000100</p> <p>Clean filter of csm system (Opacity)</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration opacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	<p>PM</p> <p>65001613</p>
	21	<p>Inspection & calibrate Zero</p> <p>Insp. Analyzer: Sample flow: confirm flow rate of 0</p> <p>Insp. Sampling System Secondary filter 1, 2</p> <p>Insp. Drain trap 1; Replace Primary filter element</p> <p>Insp. Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration opacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	<p>PM</p> <p>65001624</p>
	22	<p>Inspection & calibrate Zero</p> <p>Insp. Analyzer: Sample flow: confirm flow rate of 0</p> <p>Insp. Sampling System Secondary filter 1, 2</p> <p>Insp. Drain trap 1; Replace Primary filter element</p> <p>Insp. Sampling System; Mist catcher; Check for dirt</p> <p>If the residual pressure is below approximately 1 Mpa</p> <p>Check the water system drain separator</p> <p>Check the hose dew inflow measuring system</p> <p>Calibration opacity when GT shutdown in case >0.2%</p> <p>Confirm the temperature of electric cooler</p>	<p>PM</p> <p>65001624</p>

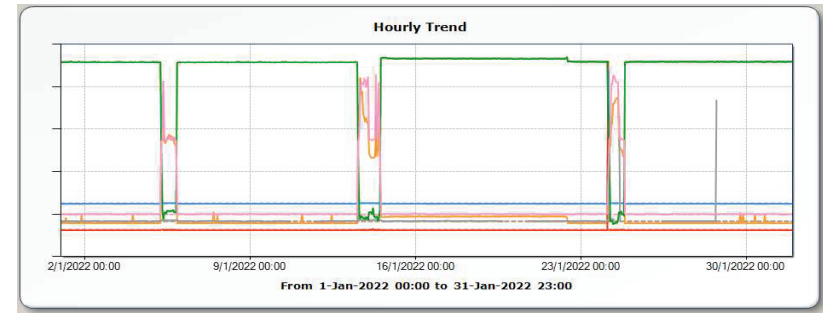




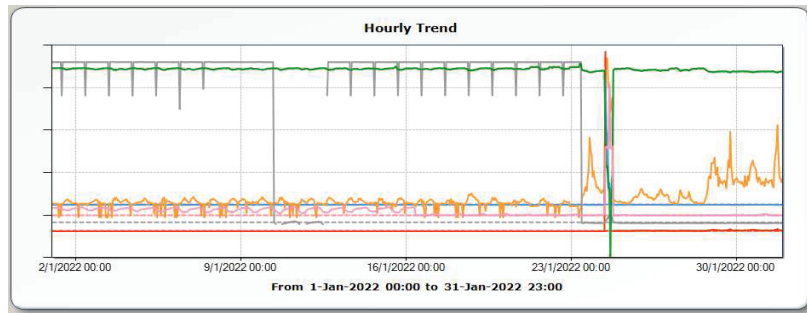
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12

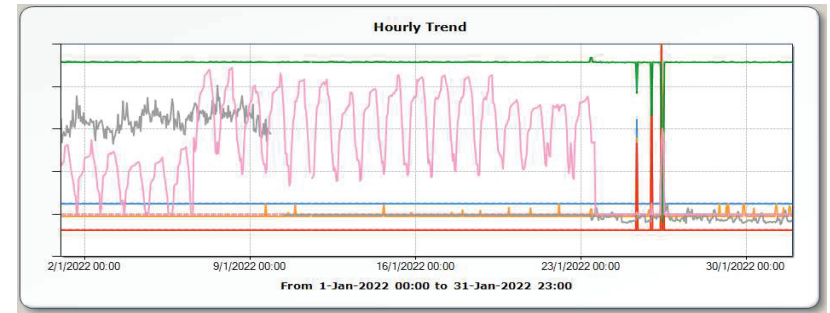
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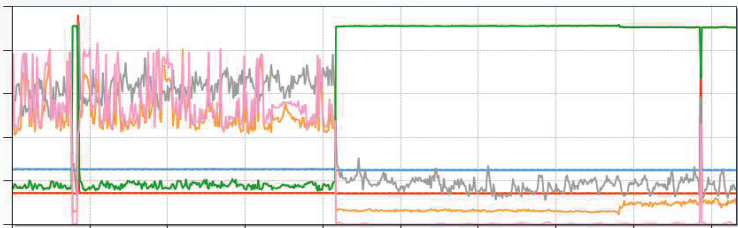


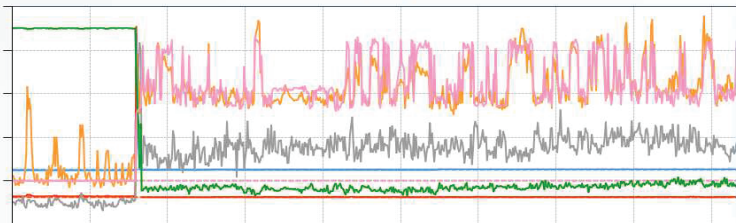
Tag	Set Point	Axis-Y		Cursor Value	Unit
		Min	Max		
21RCAI21_21 - SO2 (7% O2)	0	-200	600		ppm
21RCAI21_02 - NOx (7% O2)	0	-20	80		ppm
21RCAI21_31 - CO (7% O2)	0	-500	3500		ppm
21HNE01CO101_A1 - HRSG21 EXHAUST GAS OPACITY	0	-20	100		%
21CNA00GH001_A4 - HRSG21 EXHAUST GAS O2	0	14	22		%
21HNE01CO103_A1 - HRSG21 EXHAUST GAS FLOW	0	-500	2000		KNm3/h

22




Tag	Set Point	Axis-Y		Cursor Value	Unit
		Min	Max		
22RCAI22_21 - SO2 (7% O2)	0	-200	600		ppm
22RCAI22_02 - NOx (7% O2)	0	-20	80		ppm
22RCAI22_31 - CO (7% O2)	0	-500	3500		ppm
22HNE01CO101_A1 - HRSG22 EXHAUST GAS OPACITY	0	-2	8		%
22CNA00GH001_A4 - HRSG22 EXHAUST GAS O2	0	12	22		%
22HNE01CO103_A1 - HRSG22 EXHAUST GAS FLOW	0	-500	2000		KNm3/h


[illegible][illegible]


[illegible][illegible]

Calibrate and Maintenance Continuous Emission Monitor			page 1	
Monthly Report			Feb-22	
D/M/Y	CEMs	Description	Remark	
1/2/2022	11	Inspection & calibrate Zero Skip : No calibrate because HRS611 SHUTDOWN	PM 65002327	
	12	Inspection & calibrate Zero Skip : No calibrate because HRS612 SHUTDOWN	PM 65002338	
	21	Inspection & calibrate Zero and span Replace sec filter element (GC-90) 9057000200 Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace sec filter element (PA-5L) 9057000300 Replace mist catcher (MC-050A) 9057000300 Check the water system drain separator Replace pri filter element 9024000100 Clean filter of cem system (Opacity) Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65002349	
		22	Inspection & calibrate Zero and span Replace sec filter element (GC-90) 9057000200 Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace sec filter element (PA-5L) 9057000300 Replace mist catcher (MC-050A) 9057000300 Check the water system drain separator Replace pri filter element 9024000100 Clean filter of cem system (Opacity) Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65002366

Calibrate and Maintenance Continuous Emission Monitor			page 2
Monthly Report			Feb-22
D/M/Y	CEMs	Description	Remark
8/2/2022	11	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65003018
		Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65000029
	21	Inspection & calibrate Zero Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65003040
		22	Inspection & calibrate Zero Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler

 Calibrate and Maintenance Continuous Emission Monitor			page 2
Monthly Report			Feb-22
D/M/Y	CEMs	Description	Remark
8/2/2022	11	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65003018
	12	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65000029
	21	Inspection & calibrate Zero Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65003040
	22	Inspection & calibrate Zero Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65003051

	Calibrate and Maintenance Continuouse Emission Monitor		page 3
	Monthly Report		Feb-22
D/M/Y	CEMS	Description	Remark
15/2/2022	11	Inspection & calibrate Zero Skip : No calibrate because HRSG11 SHUT/DOWN	PM 65006764
	12	Inspection & calibrate Zero Skip : No calibrate because HRSG12 SHUT/DOWN	PM 65006775
	11	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65006786
	12	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65006797

	Calibrate and Maintainance Continuous Emission Monitor		page 4
	Monthly Report		Feb-22
	D/M/Y	CEMS	Description
22/2/2022	11	Inspection & calibrate Zero and span Replace Secondary filter element (GC-90) 9057000200 Insp.Analyzer:Sample gas flow-confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1,Replace Primary filter element Insp.Sampling System/Mist catcher/Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration capacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler Press the test key and check LED Indicator of smoke Check the Buzzer/Check alarm at DCS of smoke Test smoke detector in shelter every month	PM 65007640
			PM 65007655
			PM 65007670
	12	Inspection & calibrate Zero and span Replace Secondary filter element (GC-90) 9057000200 Insp.Analyzer:Sample gas flow-confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1,Replace Primary filter element Insp.Sampling System/Mist catcher/Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration capacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler Press the test key and check LED Indicator of smoke Check the Buzzer/Check alarm at DCS of smoke Test smoke detector in shelter every month	PM 65007670
			PM 65007681
			PM 65007696
	22	Inspection & calibrate Zero Skip : No calibrate because HRSG12 SHUTDOWN	PM 65007681

Report CEM Feb-22

HRSO 11

Description	Unit / Hr.	Fuel Gas						Fuel Oil					Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	4.49	8/2/2022 12:00	1,004.61	3.70	2.10	4.03							18.88
NO _x 7%O ₂	ppm.	79.27	6/2/2022 14:00	1,558.50	51.76	41.29	66.35						96	152
CO 7%O ₂	ppm.	7.79	5/2/2022 12:00	985.38	5.39	3.53	6.25						690	690
Opacity	%	3.71	5/2/2022 12:00	857.44	1.52	0.45	2.66							
O ₂	%	14.08	5/2/2022 12:00	985.38	13.78	13.55	13.96							
Flow	1000M ³ /Hr	1,663.56	4/2/2022 07:00		1,130.37	840.73	1,542.37							

HRSO 12

Description	Unit / Hr.	Fuel Gas						Fuel Oil					Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	-	1/2/2022 00:00	-	-	-	-						96	152
NO _x 7%O ₂	ppm.	-	1/2/2022 00:00	-	-	-	-						690	690
CO 7%O ₂	ppm.	-	1/2/2022 00:00	-	-	-	-							
Opacity	%	-	1/2/2022 00:00	-	-	-	-							
O ₂	%	-	1/2/2022 00:00	-	-	-	-							
Flow	1000M ³ /Hr	-	1/2/2022 00:00	-	-	-	-							

* Air Control Standard of (EIA)



Report CEM Feb-22

HRSO 21

Description	Unit / Hr.	Fuel Gas						Fuel Oil					Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	3.99	26/2/2022 00:00	1,031.39	2.12	0.51	3.16							18.88
NO _x 7%O ₂	ppm.	76.54	27/2/2022 17:00	1,452.07	51.11	30.19	63.65						96	152
CO 7%O ₂	ppm.	9.54	11/2/2022 00:00	836.84	4.15	1.22	6.03						690	690
Opacity	%	3.17	5/2/2022 22:00	838.90	0.82	0.20	1.13							
O ₂	%	14.00	24/2/2022 21:00	1,023.38	13.70	13.32	13.87							
Flow	1000M ³ /Hr	1,687.82	24/2/2022 00:00		1,144.09	802.73	1,566.83							

HRSO 22

Description	Unit / Hr.	Fuel Gas						Fuel Oil					Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	3.26	5/2/2022 22:00	878.27	1.74	0.94	2.07						96	152
NO _x 7%O ₂	ppm.	71.81	10/2/2022 12:00	1,649.83	51.88	43.51	60.31						690	690
CO 7%O ₂	ppm.	9.89	10/2/2022 05:00	928.39	6.61	1.19	8.79							
Opacity	%	1.83	5/2/2022 22:00	878.27	0.45	0.10	0.66							
O ₂	%	14.70	5/2/2022 22:00	878.27	13.66	13.37	13.81							
Flow	1000M ³ /Hr	1,709.79	16/2/2022 10:00		1,140.50	847.14	1,604.60							

* Air Control Standard of (EIA)





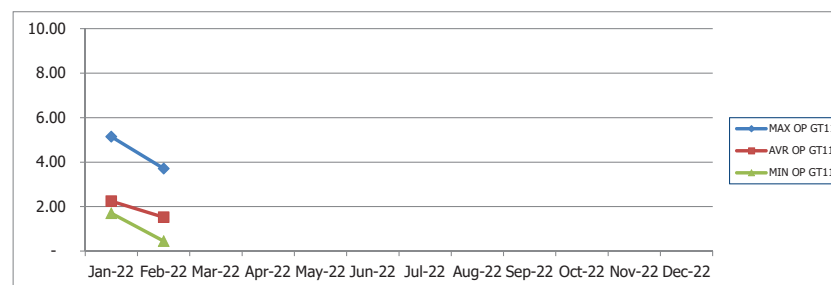
*Note : Normal Pressure is 2000 PSI.
N2: Calibrate 1 time / 1 week NOX, SO2 ,CO,O2 : Calibraze 1 time / 2 week *EPD:Expired date , CN:Cylinder Number , ES PE:Estimated Recorder Due Date

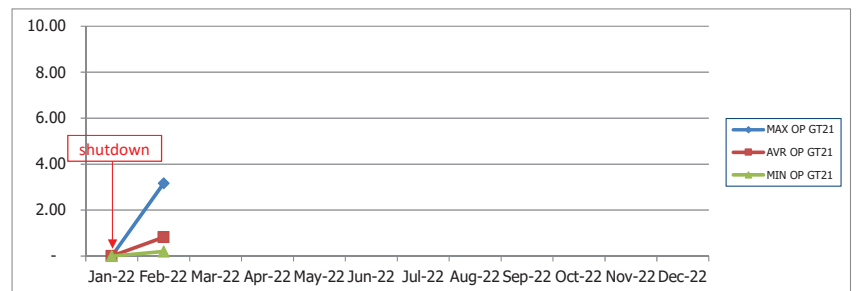
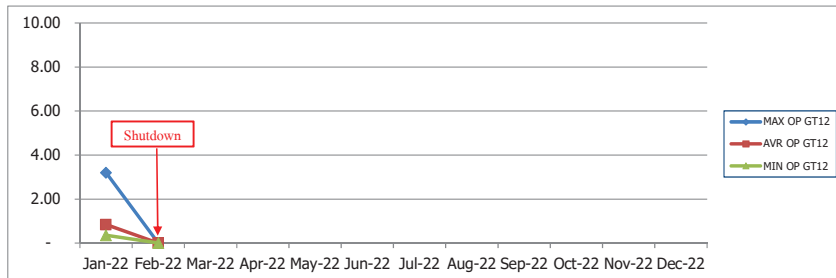
Spare Standard Gas

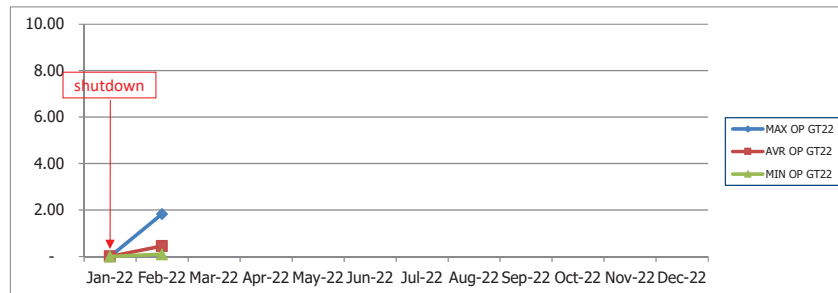
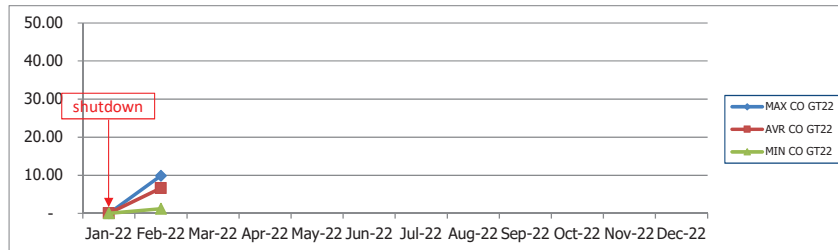
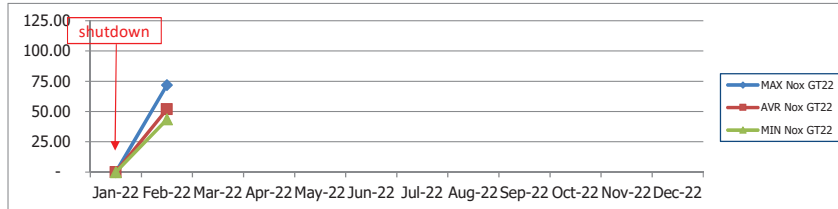
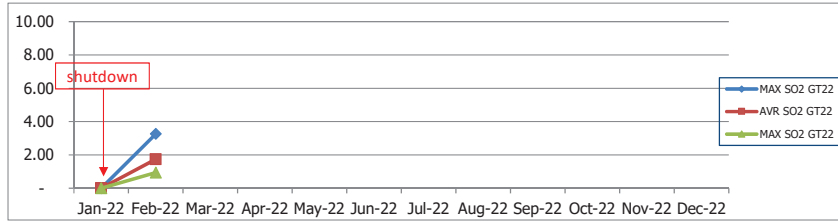
- *N2 Has Store 31,50 Litre
- *Nox Has Store 31 Litre
- *SO2 Has Store 31 Litre (CC747327 6-JUL-2029 , EB0146949 06-DEC-2029 , EB0146956 06-DEC-2029)
- *CO Has Store 31,50 Litre (CC746718 16-NOV-2029 , CC7466735 16-NOV-2029)
- *O2 Has Store 34 Litre

Approved By _____

2-Mar-22







Maintenance Statistic of Environment Protection Equipment

Month: Feb-22

CEMS HRS G11				CEMS HRS G12				CEMS HRS G21				CEMS HRS G22				Waste Water Control										
No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard							
4			-	4			-	4			-	4			-	1										
Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)										
Part Damage				-	Part Damage				-	Part Damage				-	Part Damage				-							
Site Conditions				-	Site Conditions				-	Site Conditions				-	Site Conditions				-							
Human Error				-	Human Error				-	Human Error				-	Human Error				-							
Calibration				Calibration				Calibration				Calibration				Calibration										
Parameter	Zero Error (% of FS)				Span Error (% of FS)				Parameter	Zero Error (% of FS)				Span Error (% of FS)				Parameter	Zero Error (% of FS)				Span Error (% of FS)			
	Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2	Cal.3	Cal.4		Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2	Cal.3	Cal.4		Cal.1	Cal.2	Cal.3	Cal.4				
Nox	-	-0.16	-	-0.50	0.42	0.08			Nox	-	-0.08	-	-0.08	0.50	0.41			Nox	-0.25	-0.41	0.16	-0.75	0.08	1.25		
SOx	-	-0.09	-	0.04	0.22	1.95			SOx	-	0.02	-	-0.02	1.04	0.64			SOx	-0.02	-0.06	-0.13	0.13	1.35	0.24		
CO	-	0.00	-	0.00	1.58	1.36			CO	-	-0.11	-	-0.11	0.44	0.11			CO	0.00	0.54	0.00	0.00	0.76	0.43		
O2	-	0.17	-	0.48	0.08	0.21			O2	-	0.04	-	0.73	0.21	0.78			O2	0.73	-0.73	-0.17	0.52	0.43	0.26		
Remark																										

* :Re-Calibrate (Zero Diff >±1%) (Span Diff >±2%)

Mar-22

N2: Calibrate 1 time / 1 week NOX ,SO2 ,CO,O2 : Calibrate 1 time / 2 week *EPD:Expired date , CN:Cylinder Number , ES PE:Estimated Recorder Due Date

*O2 Has Store 34 Litre

4-Apr-22

Month: Mar-22* :Re-Calibrate (Zero Diff $>\pm 1\%$) (Span Diff $>\pm 2\%$)

Report CEM Mar-22

HRSG 11

Description	Unit / Hr.	Fuel Gas						Fuel Oil					Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	-	1/3/2022 00:00	-	-	-	-						18.88	
NO _x 7%O ₂	ppm.	-	1/3/2022 00:00	-	-	-	-						96	152
CO 7%O ₂	ppm.	-	1/3/2022 00:00	-	-	-	-						690	690
Opacity	%	-	1/3/2022 00:00	-	-	-	-							
O ₂	%	-	1/3/2022 00:00	-	-	-	-							
Flow	1000M ³ /Hr	-	1/3/2022 00:00		-	-	-							

HRSG 12

Description	Unit / Hr.	Fuel Gas						Fuel Oil					Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	-	1/3/2022 00:00	-	-	-	-						18.88	
NO _x 7%O ₂	ppm.	-	1/3/2022 00:00	-	-	-	-						96	152
CO 7%O ₂	ppm.	-	1/3/2022 00:00	-	-	-	-						690	690
Opacity	%	-	1/3/2022 00:00	-	-	-	-							
O ₂	%	-	1/3/2022 00:00	-	-	-	-							
Flow	1000M ³ /Hr	-	1/3/2022 00:00		-	-	-							

* Air Control Standard of (EIA)

(นายนฤตม์ เทพหัสดิน ณ อยุธยา)

(นายตะวัน พลับโพธิ์)

Report CEM Mar-22

HRSG 21

Description	Unit / Hr.	Fuel Gas						Fuel Oil					Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	4.11	7/3/2022 10:00	881.47	3.03	2.56	3.33						18.88	
NO _x 7%O ₂	ppm.	70.21	2/3/2022 15:00	1,511.81	52.65	41.21	66.05						96	152
CO 7%O ₂	ppm.	9.44	2/3/2022 12:00	837.75	4.18	2.80	5.31						690	690
Opacity	%	1.53	6/3/2022 09:00	829.74	1.02	0.57	1.24							
O ₂	%	13.96	5/3/2022 13:00	1,057.94	13.75	13.37	13.89							
Flow	1000M ³ /Hr	1,660.81	7/3/2022 08:00		1,212.73	809.60	1,574.29							

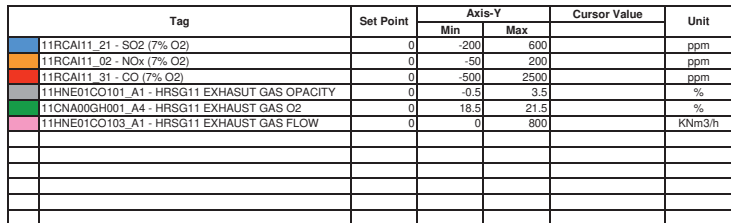
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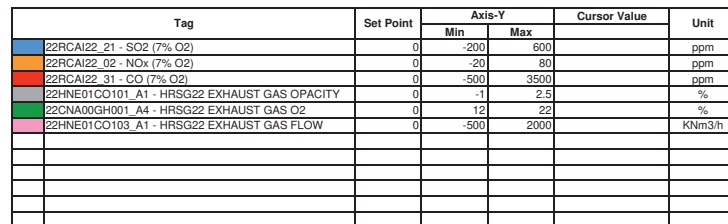
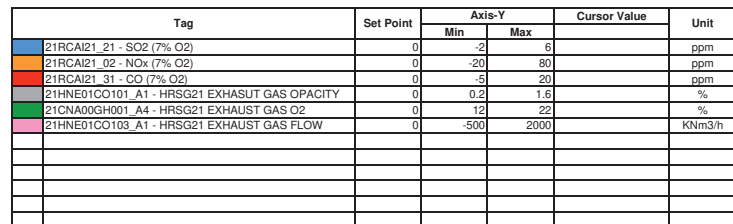
Description	Unit / Hr.	Fuel Gas						Fuel Oil					Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	3.65	7/3/2022 05:00	848.05	2.74	1.84	3.18						18.88	
NO _x 7%O ₂	ppm.	67.01	6/3/2022 12:00	1,594.44	50.17	41.16	58.84						96	152
CO 7%O ₂	ppm.	9.61	6/3/2022 08:00	883.53	8.24	6.55	9.36						690	690
Opacity	%	0.84	6/3/2022 09:00	869.80	0.58	0.31	0.78							
O ₂	%	13.80	6/3/2022 11:00	864.30	13.63	13.44	13.79							
Flow	1000M ³ /Hr	1,611.37	6/3/2022 23:00		1,164.15	848.05	1,594.67							

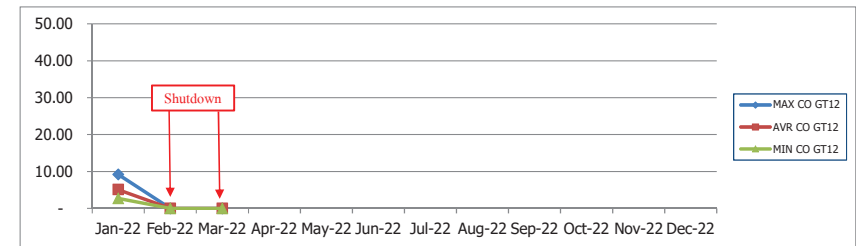
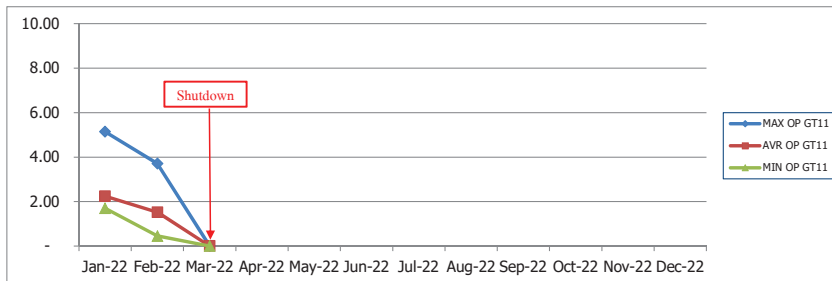
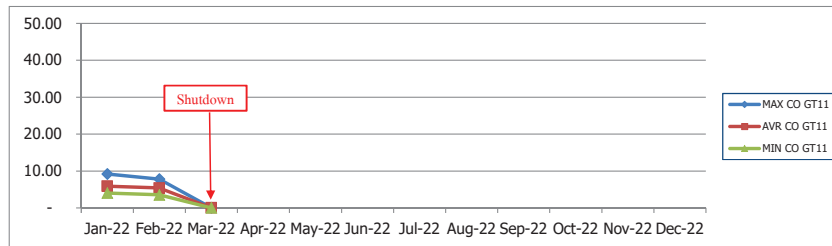
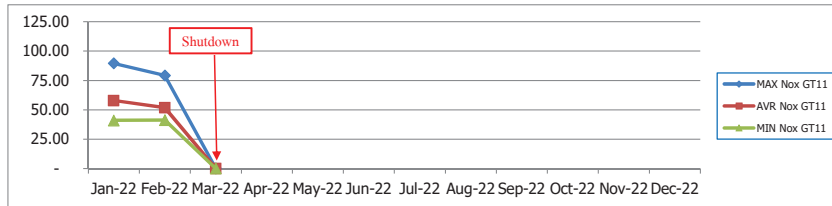
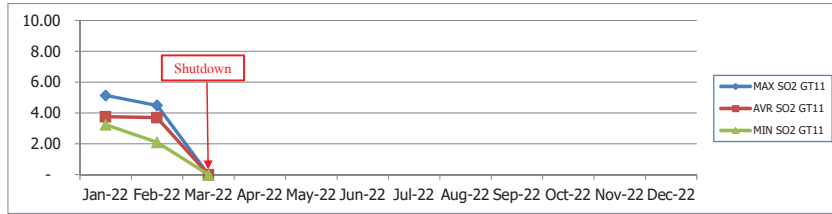
* Air Control Standard of (EIA)

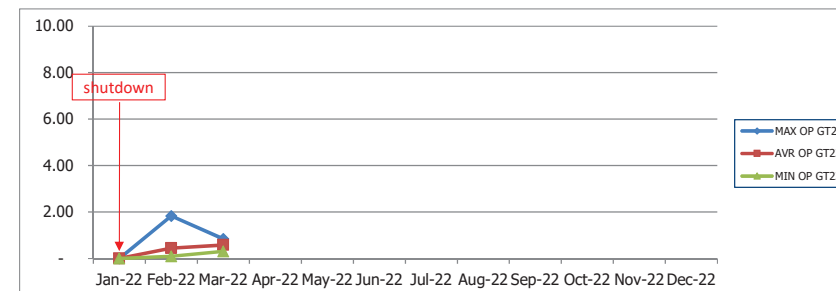
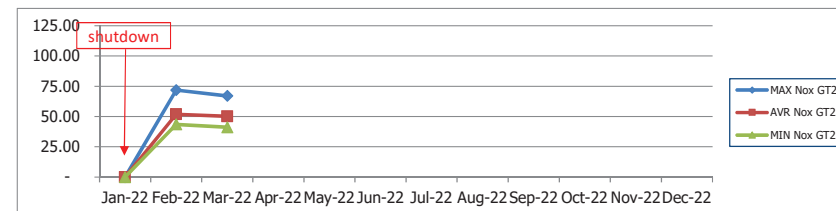
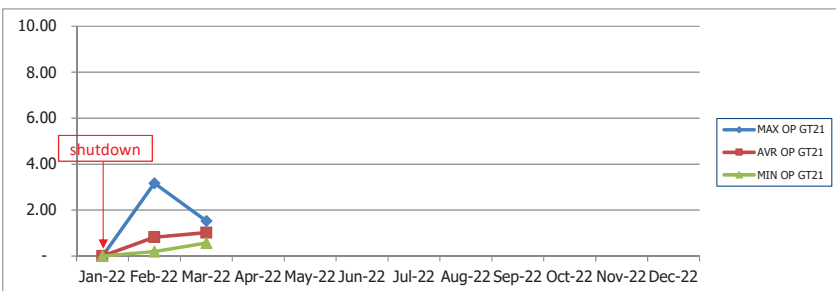
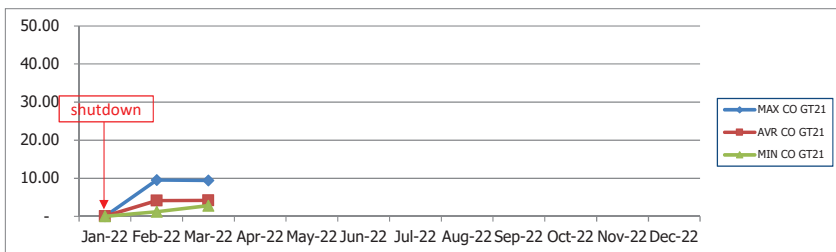
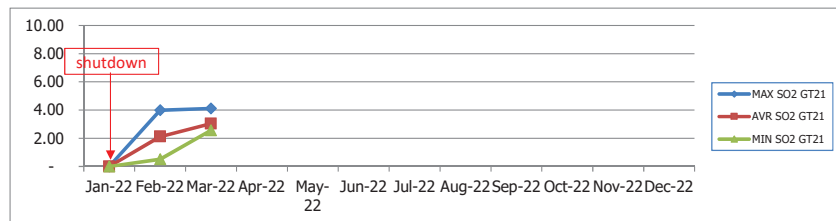
(นายนฤตม์ เทพหัสดิน ณ อยุธยา)

(นายตะวัน พลับโพธิ์)

[illegible]










Calibrate and Maintenance Continuous Emission Monitor			page 2
Monthly Report			
D/M/Y	CEMs	Description	Remark
		Inspection & calibrate zero and span Insp-Analyser: Sample gas flow:confirm flow rate of 0 Insp-Sampling System Secondary filter 1,2 Insp-Drain trap 1,2:Replace Primary filter element Insp-Sampling System/Met catcher:Check for dirt If the residual pressure is below approximately 1 mpa Check the water system drain separator Check the hose down inflow measuring system Calibration capacity when GT shutdown/in case +0.2% Confirm the temperature of electric cooler	PM 65009409
		Inspection & calibrate zero and span Insp-Analyser: Sample gas flow:confirm flow rate of 0 Insp-Sampling System Secondary filter 1,2 Insp-Drain trap 1,2:Replace Primary filter element Insp-Sampling System/Met catcher:Check for dirt If the residual pressure is below approximately 1 mpa Check the water system drain separator Check the hose down inflow measuring system Calibration capacity when GT shutdown/in case +0.2% Confirm the temperature of electric cooler	PM 65009420
8/3/2022		Inspection & calibrate zero Insp-Analyser: Sample gas flow:confirm flow rate of 0 Insp-Sampling System Secondary filter 1,2 Insp-Drain trap 1,2:Replace Primary filter element Insp-Sampling System/Met catcher:check for dirt If the residual pressure is below approximately 1 mpa Check the water system drain separator Check the hose down inflow measuring system Calibration capacity when GT shutdown/in case +0.2% Confirm the temperature of electric cooler	PM 65009431
		Inspection & calibrate zero Insp-Analyser: Sample gas flow:confirm flow rate of 0 Insp-Sampling System Secondary filter 1,2 Insp-Drain trap 1,2:Replace Primary filter element Insp-Sampling System/Met catcher:check for dirt If the residual pressure is below approximately 1 mpa Check the water system drain separator Check the hose down inflow measuring system Calibration capacity when GT shutdown/in case +0.2% Confirm the temperature of electric cooler	PM 65009442

Calibrate and Maintenance Continuous Emission Monitor			page 4
Monthly Report			Mar-22
D/M/Y	CEMs	Description	Remark
		<p>Inspection & calibrate Zero and span</p> <p>Insip. Analyzer-Sample gas flow/confirm flow rate of 0</p> <p>Insip. Sampling System Secondary filter 1.2</p> <p>Insip. Drain trap 1. Replace Primary Filter element</p> <p>Insip. Sampling System; Mist catcher; check for dirt</p> <p>Check the residual pressure is below approximately 1 Mpa</p> <p>Replace Phi Filter Holder G22-0003700</p> <p>Replace Phi Filter Element G22-00040004</p> <p>Replace Siphon Filter Element (GC-90) 90570070026</p> <p>Insip. Heated tube (piping) and probe</p> <p>Cabinet/Vent filter-cloth if dirty replace if deteriorated</p> <p>Replace Primary Filter C-ring 905700700400</p> <p>Replace Pump Diaphragm Assembly 9057003206</p> <p>Sampling system;Electronic cooler;clean the radiating</p> <p>Replace Air Filter (3mm) 9057005010</p> <p>Replace Converter (Catalyst tube) (COM-50) 90570051010</p> <p>Replace Scrubber (ESU-050A) 9057003400</p> <p>Replace Protective Filter 90570050330</p> <p>(Inspection) HORIBA-Cabinet-Arrestor</p> <p>Check the water system drain sceptor</p> <p>Check the hose idow inflow measuring system</p> <p>Calibration opacity when GT shutdown in case +0.2%</p> <p>Confirm the temperature of electric cooler</p>	<p>PM</p> <p>65013619</p>
22/3/2022		<p>Inspection & calibrate Zero and span</p> <p>Insip. Analyzer-Sample gas flow/confirm flow rate of 0</p> <p>Insip. Sampling System Secondary filter 1.2</p> <p>Insip. Drain trap 1. Replace Primary Filter element</p> <p>Insip. Sampling System; Mist catcher; check for dirt</p> <p>Check the residual pressure is below approximately 1 Mpa</p> <p>Replace Phi Filter Holder G22-0003700</p> <p>Replace Phi Filter Element G22-000400040</p> <p>Replace Siphon Filter Element (GC-90) 90570070026</p> <p>Insip. Heated tube (piping) and probe</p> <p>Cabinet/Vent filter-cloth if dirty replace if deteriorated</p> <p>Replace Primary Filter C-ring 905700700400</p> <p>Replace Pump Diaphragm Assembly 9057003206</p> <p>Sampling system;Electronic cooler;clean the radiating</p> <p>Replace Air Filter (3mm) 9057005010</p> <p>Replace Converter (Catalyst tube) (COM-50) 90570051010</p> <p>Replace Scrubber (ESU-050A) 9057003400</p> <p>Replace Protective Filter 90570050330</p> <p>(Inspection) HORIBA-Cabinet-Arrestor</p> <p>Check the water system drain sceptor</p> <p>Check the hose idow inflow measuring system</p> <p>Calibration opacity when GT shutdown in case +0.2%</p> <p>Confirm the temperature of electric cooler</p>	<p>PM</p> <p>65013655</p>
		<p>Inspection & calibrate Zero</p> <p>Skip - No calibration because HRSG11 SHUTDOWN</p>	<p>PM</p> <p>65013691</p>
		<p>Inspection & calibrate Zero</p> <p>Skip - No calibration because HRSG11 SHUTDOWN</p>	<p>PM</p> <p>65013713</p>

	Calibrate and Maintenance Continuouse Emission Monitor		page 5
	Monthly Report		Mar-22
	D/M/Y	CEMs	Description
			Remark
29/3/2022	11	Inspection & calibrate Zero Skip : No calibrate because กักตัวเป็นผู้ล้นพัสเสียงสูง	PM 65014837
	12	Inspection & calibrate Zero Skip : No calibrate because กักตัวเป็นผู้ล้นพัสเสียงสูง	PM 65014848
	21	Inspection & calibrate Zero and span Skip : No calibrate because กักตัวเป็นผู้ล้นพัสเสียงสูง	PM 65014859
	22	Inspection & calibrate Zero and span Skip : No calibrate because กักตัวเป็นผู้ล้นพัสเสียงสูง	PM 65014884

STANDARD GAS FOR CEMs REMAINING REPORT

Apr-22

STANDARD	GAS	HRSG 11										HRSG 12					HRSG 21					HRSG 22					TOTAL
		Full condition		(Psi)	Time	Liter	Expired date Cylinder Number Estimated Recorder due date	Order status Spare Standard gas	(Psi)	Time	Liter	Expired date Cylinder Number Estimated Recorder due date	Order status Spare Standard gas	(Psi)	Time	Liter	Expired date Cylinder Number Estimated Recorder due date	Order status Spare Standard gas	(Psi)	Time	Liter	Expired date Cylinder Number Estimated Recorder due date	Order status Spare Standard gas	TOTAL			
		(Psi)	Time																						Liter	Liter	Liter
CEM	N ₂	2000	35	31	1010	27	15.00	31-Dec-27 5139950V May-22	Waiting delivery from vendor	890	23	13.80	31-Dec-27 4779670V Apr-22	Waiting delivery from vendor	1340	38	20.77	31-Dec-27 6662912V Apr-22		990	25	14.73	12-Sep-27 6139899V May-22	Waiting delivery from vendor	64.95		
	NO _x	2000	34	31	1400	24	21.70	26-Oct-28 Oct-22 C073990V		1140	18.8	17.67	8-Sep-28 Aug-22 C018336		1120	18	17.36	8-Sep-28 Aug-22 C018276		1100	18	17.05	8-Sep-28 Jul-22 C0122683		73.78		
	SO ₂	2000	22	31	650	6	10.08	19-Feb-28 EB0123834 Jan-22	Spare EB0146948	410	3	6.36	28-Sep-28 CC434925 Nov-21	Spare CC747327	510	4	7.91	28-Sep-28 Dec-21 CC485922	Spare EB0146956	1420	16	22.01	6-Jul-29 CC747330 Jun-22		46.35		
	CO	2000	34	31	840	15	14.57	17-Aug-26 C0167063 May-22		750	11	18.75	10-Jan-28 D400316 Mar-22	Spare CC746218	880	13.6	22.00	23-Nov-26 D338452 Apr-22	Waiting delivery from vendor	600	8	15.00	22-Nov-26 D338456 Jan-22	Spare CC746735	70.32		
	O ₂	2000	34	47	1100	18	25.85	20-Mar-25 30-09- Jul-22		1770	31	41.80	20-Oct-28 447627 Feb-23		2010	36	47.24	20-Oct-28 0541 Apr-23		1880	30	39.48	19-Oct-29 C073990V Jan-23		154.16		

*Note : Normal Pressure is 2000 PSI
N2: Calibrate 1 time / 1 week NO_x, SO₂, CO, O₂: Calibrate 1 time / 2 week *EPD:Expired date, CN:Cylinder Number, ES PE:Estimated Recorder Due Date

Spare Standard Gas *N2 Has Store 31,50 Lire
*N₂ Has Store 31 Lire
*SO₂ Has Store 31 Lire (CC747327 6-JUL-2029, EB0146949 06-DEC-2029, EB0146956 06-DEC-2029)
*CO Has Store 31,50 Lire (CC746718 16-NOV-2029, CC7466735 16-NOV-2029)
*O₂ Has Store 34 Lire

(นายวิญญู บุญใหญ่)

(นายตะวัน พงษ์ใหญ่)

Issue date 5-May-22

Report CEM Apr-22

HRSG 11

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	%tile 90 Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	3.80	28/4/2022 06:00	851.72	3.16	2.97	3.38	11.95	30/4/2022 13:45	876.66	6.22	3.96			18.88
NO _x 7%O ₂	ppm.	69.90	18/4/2022 08:00	1,525.31	61.34	46.54	68.79	73.73	30/4/2022 14:15	813.26	39.19	22.96	96	152	
CO 7%O ₂	ppm.	8.11	18/4/2022 05:00	940.52	5.96	4.65	7.26	545.66	30/4/2022 13:30	1,098.22	241.52	17.17	690	690	
Opacity	%	4.24	18/4/2022 05:00	851.72	2.24	1.24	3.96	7.94	30/4/2022 13:30	860.64	2.43	0.27			
O ₂	%	14.48	28/4/2022 06:00	851.72	13.68	13.46	13.94	15.31	30/4/2022 13:30	1,098.22	15.01	14.50			
Flow	1000M ³ /Hr	1,583.45	28/4/2022 05:00		1,119.60	822.42	1,539.57	1,691.03	30/4/2022 12:00		1,166.47	813.26			

HRSG 12

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	%tile 90 Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	2.41	18/4/2022 09:00	1,538.59	1.60	1.08	2.28	10.05	28/4/2022 18:00	856.29	4.69	2.11			18.88
NO _x 7%O ₂	ppm.	56.90	18/4/2022 08:00	1,512.50	45.71	37.11	54.75	45.81	28/4/2022 8:30	829.06	26.79	19.81	96	152	
CO 7%O ₂	ppm.	5.40	18/4/2022 05:00	890.40	3.26	2.18	4.23	347.00	28/4/2022 11:30	1,117.91	43.65	3.27	690	690	
Opacity	%	2.63	18/4/2022 04:00	814.41	0.96	0.41	1.31	3.47	28/4/2022 18:00	856.29	1.24	0.25			
O ₂	%	13.88	29/4/2022 23:00	938.00	13.64	13.40	13.82	15.04	28/4/2022 11:30	1,117.91	14.44	13.71			
Flow	1000M ³ /Hr	1,538.59	18/4/2022 09:00		1,108.61	814.41	1,494.83	1,772.74	29/4/2022 9:00		1,595.23	821.50			

* Air Control Standard of (EIA)



(มาตรฐานของ (EIA))



(มาตรฐานของ (EIA))

Report CEM Apr-22

HRSG 21

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	%tile 90 Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	2.60	7/4/2022 10:00	951.74	1.60	0.94	1.98								18.88
NO _x 7%O ₂	ppm.	69.90	7/4/2022 14:00	1,547.29	53.37	37.03	63.36							96	152
CO 7%O ₂	ppm.	9.42	11/4/2022 10:00	813.95	2.45	0.45	5.43							690	690
Opacity	%	2.30	25/4/2022 18:00	1,031.62	1.36	0.70	1.70								
O ₂	%	14.00	5/4/2022 11:00	877.12	13.57	13.18	13.79								
Flow	1000M ³ /Hr	1,644.10	21/4/2022 01:00		1,182.94	806.40	1,542.02								

HRSG 22

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	%tile 90 Values	Fuel Gas	Fuel Oil
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	3.91	7/4/2022 00:00	1,609.54	2.40	1.10	2.94								18.88
NO _x 7%O ₂	ppm.	69.58	29/4/2022 20:00	1,634.95	54.94	44.11	65.19							96	152
CO 7%O ₂	ppm.	12.74	9/4/2022 06:00	890.85	10.34	8.53	11.52							690	690
Opacity	%	2.53	18/4/2022 15:00	817.61	0.54	0.10	0.81								
O ₂	%	13.99	27/4/2022 17:00	1,095.02	13.67	13.42	13.84								
Flow	1000M ³ /Hr	1,704.99	8/4/2022 09:00		1,235.71	817.61	1,626.25								

* Air Control Standard of (EIA)



(มาตรฐานของ (EIA))



(มาตรฐานของ (EIA))

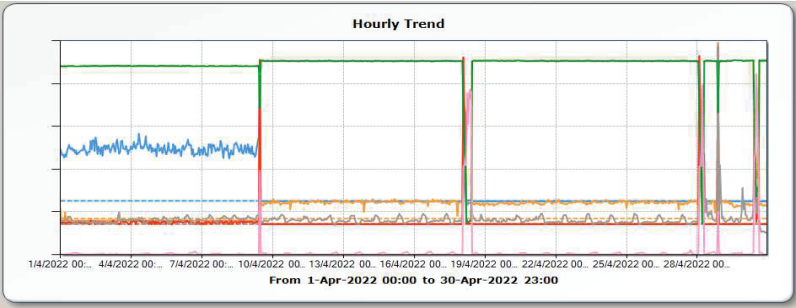
Maintenance Statistic of Environment Protection Equipment

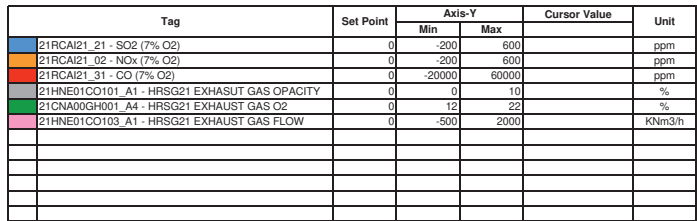
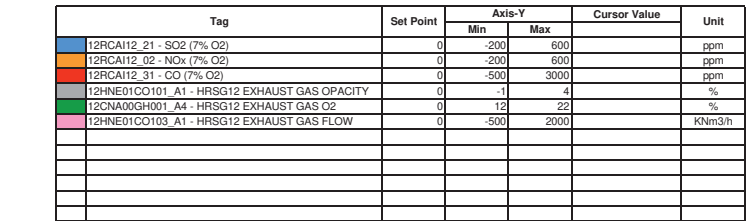
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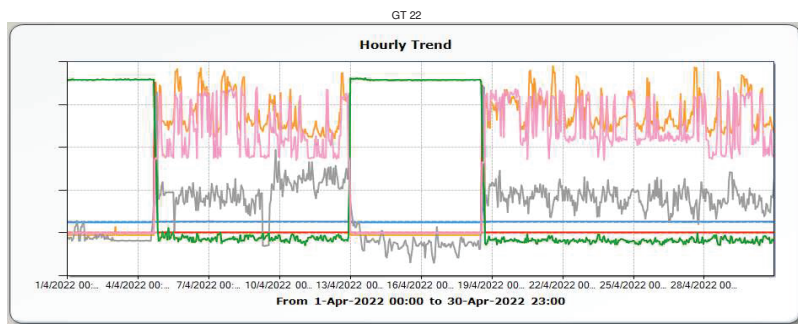
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4					-	4					-	4					-	4					-	1					-				
Cause of Failure (No. of Incident)						Cause of Failure (No. of Incident)						Cause of Failure (No. of Incident)						Cause of Failure (No. of Incident)						Cause of Failure (No. of Incident)									
Part Damage					-	Part Damage					-	Part Damage					-	Part Damage					-	Part Damage					-				
Site Conditions					-	Site Conditions					-	Site Conditions					-	Site Conditions					-	Site Conditions					-				
Human Error					-	Human Error					-	Human Error					-	Human Error					-	Human Error					-				
Calibration						Calibration						Calibration						Calibration						Calibration									
Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	As Found		As Left		
	Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2			
Nox	0.16	-	-0.08	-0.08	0.50	0.08	Nox	-	-	-	0.50	0.50	-	3.76	Nox	0.16	-0.25	-0.16	-0.16	0.75	0.83	Nox	-	-	-	-	-	-	As Shown	-	-	-	-
SOx	-0.02	-	0.02	0.02	0.31	1.13	SOx	-	-	-	0.17	0.17	-	4.63	SOx	-0.04	0.04	-0.06	-0.06	0.08	1.38	SOx	-	-	-	-	-	-	-	-	-		
CO	-0.10	-	0.10	0.10	0.17	0.17	CO	-	-	-	0.11	0.11	-	4.52	CO	0.00	0.10	-0.10	-0.10	0.10	0.43	CO	-	-	-	-	-	-	-	-	-		
O2	-2.13	-	-0.26	-0.26	1.13	0.17	O2	-	-	-	0.17	0.17	-	1.56	O2	-0.13	0.91	-1.13	-1.13	0.91	0.39	O2	-	-	-	-	-	-	-	-	-		
Remark																																	

* :Re-Calibrate (Zero Diff $>\pm 1\%$) (Span Diff $>\pm 2\%$)

GT 11

[illegible]





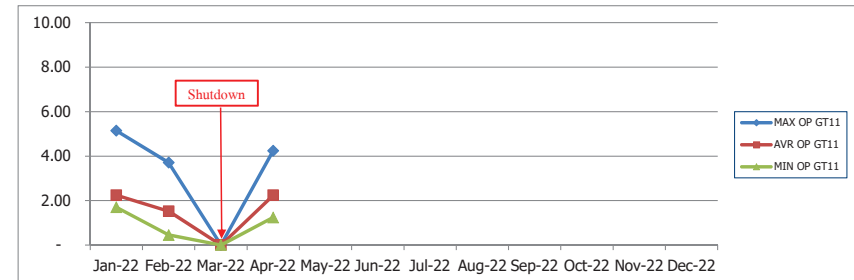
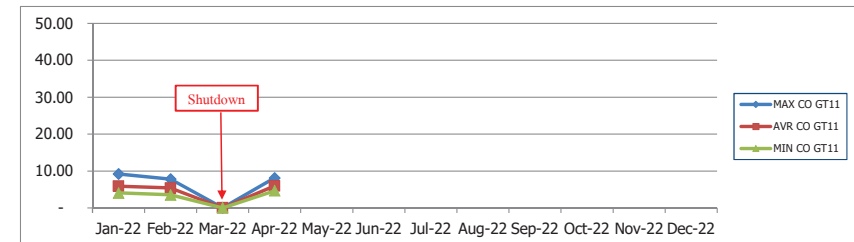
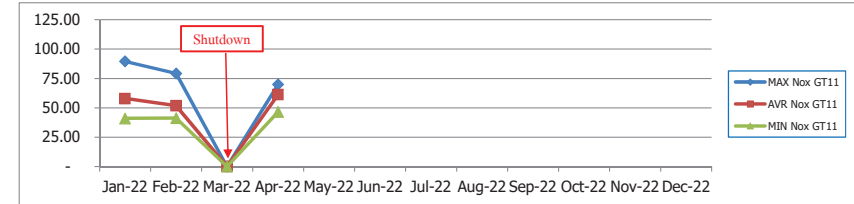
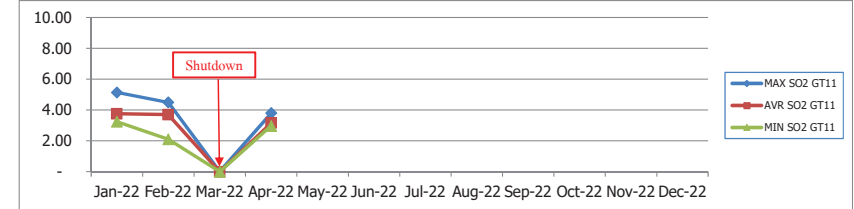
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		Min	Max		
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22RCAI22_31 - CO (7% O2)	0	-1000	4000		ppm
22HNE01CO101_A1 - HRSG22 EXHAUST GAS OPACITY	0	-1	3		%
22CNA00GH001_A4 - HRSG22 EXHAUST GAS O2	0	12	22		%
22HNE01CO103_A1 - HRSG22 EXHAUST GAS FLOW	0	-500	2000		KNm3/h

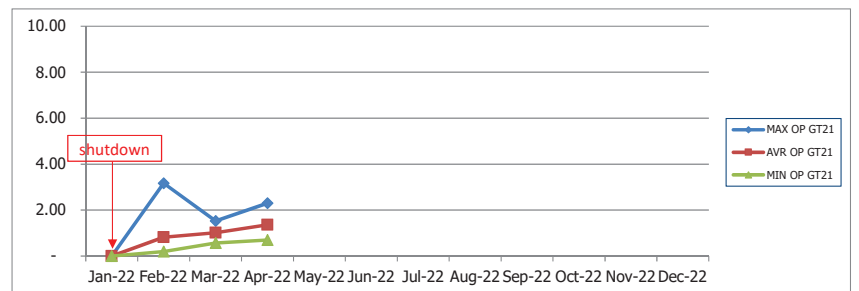
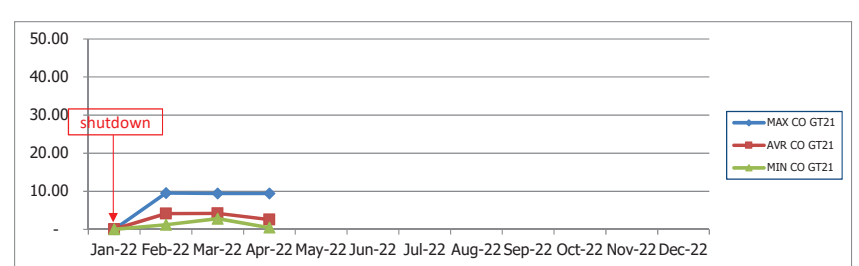
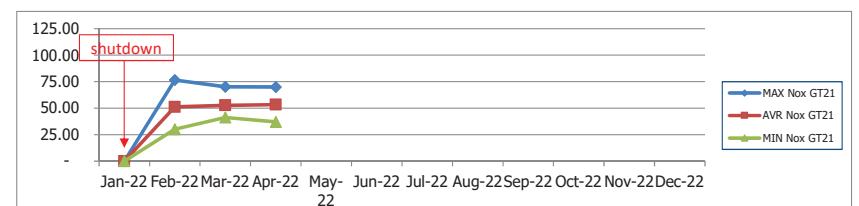
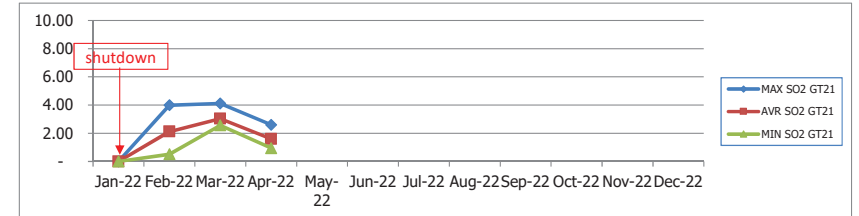
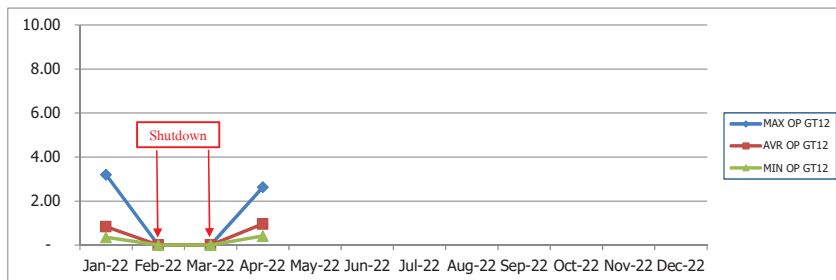
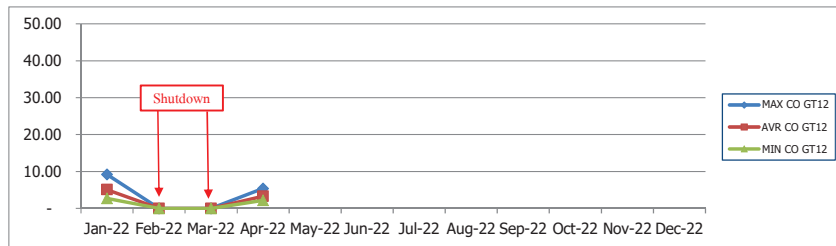
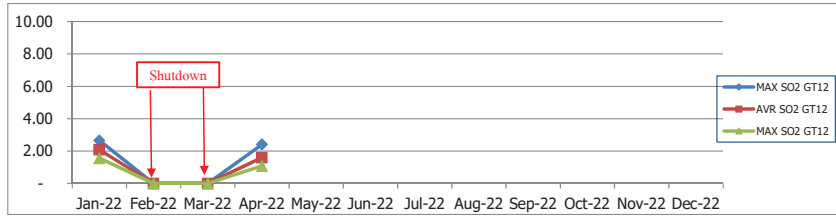
Calibrate and Maintenance Continuous Emission Monitor			page 1
Monthly Report			Apr-22
D/M/Y	CEMs	Description	Remark
5/4/2022	11	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65015664
	12	Inspection & calibrate Zero and span Skip : No calibrate because E.Cooler Temp Alarm	PM 65015675
	21	Inspection & calibrate Zero Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65015686
	22	Inspection & calibrate Zero Skip : No calibrate because Display Touch Screen not : Detect	PM 65015697

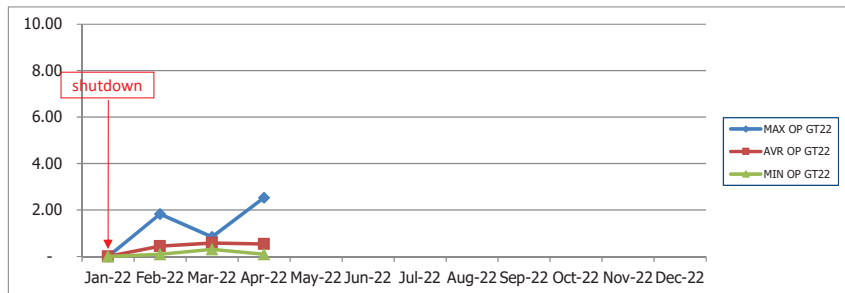
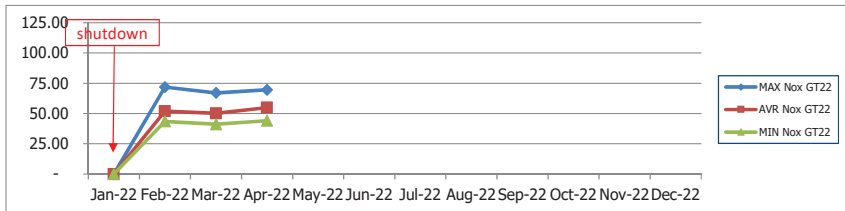
Calibrate and Maintenance Continuous Emission Monitor			page 2
Monthly Report			Apr-22
D/M/Y	CEMs	Description	Remark
12/4/2022	11	Inspection & calibrate Zero Skip : No calibrate because HRSG11 SHUTDOWN	PM 65019591
	12	Inspection & calibrate Zero Skip : No calibrate because HRSG12 SHUTDOWN	PM 65019602
	21	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Pri Filter Holder Cap 9024000300 Replace Pri Filter Element Cap 9024000400 Replace Sec Filter Element (OC-90) 9057000200 Inspc.Heated tube (piping) and probe Cabinet;Vent filter:clean if dirty replace if deteriorated Replace Primary Filter O-ring 9057004700 Replace Pump Diaphragm Assembly 9057003200 Sampling system;Electronic cooler;clean the radiating Replace Air Filter (3mm) 9057005000 Replace Converter Catalyst tube(COM-50) 9057005100 Replace Scrubber (ESU-050A) 9057003400 Replace Protective Filter 9057005300 (inspection) HORIBA-Cabinet;Arrestor Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler *ถ้าไม่พบ PM 65014859 มาทำในสัปดาห์ถัดมา	PM 6501961
	22	Inspection & calibrate Zero and span Skip : No calibrate because Display Touch Screen not : Detect	PM 65019624



Calibrate and Maintenance Continuous Emission Monitor				page 3
D/M/Y	CEMs	Monthly Report	Description	Remark
19/4/2022	11	PM	Inspection & calibrate Zero and span Replace Secondary filter element (GC-90) 9057000200 Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler Press the test key and check LED Indicator of smoke Check the Buzzer/Check alarm at DCS of smoke Test smoke detector in shelter every month	65020058
			Inspection & calibrate Zero and span Replace Secondary filter element (GC-90) 9057000200 Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler Press the test key and check LED Indicator of smoke Check the Buzzer/Check alarm at DCS of smoke Test smoke detector in shelter every month	65020073
	12	PM	Inspection & calibrate Zero and span Replace Secondary filter element (GC-90) 9057000200 Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler Press the test key and check LED Indicator of smoke Check the Buzzer/Check alarm at DCS of smoke Test smoke detector in shelter every month	65020088
			Inspection & calibrate Zero Skip : No calibrate because Display Touch Screen not : Detect	65015697

Calibrate and Maintenance Continuous Emission Monitor				page 4
D/M/Y	CEMs	Monthly Report	Description	Remark
26/4/2022	11	PM	Inspection & calibrate Zero Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	65021072
			Inspection & calibrate Zero Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	65021083
	12	PM	Inspection & calibrate Zero and span Replace Secondary filter element (GC-90) 9057000200 Insp.Analyzer;Sample gas flow:confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	65021094
			Inspection & calibrate Zero Skip : No calibrate because Display Touch Screen not : Detect	65021109







STANDARD GAS FOR CEMs REMAINING REPORT

May-22

STANDARD GAS		Full condition		HRSG 11				HRSG 12				HRSG 21				HRSG 22				TOTAL				
				(Psi)	Time	Liter	Expired date Cylinder Number Estimated Recorder due date	Order status Spare Standard gas	(Psi)	Time	Liter	Expired date Cylinder Number Estimated Recorder due date	Order status Spare Standard gas	(Psi)	Time	Liter	Expired date Cylinder Number Estimated Recorder due date	Order status Spare Standard gas	(Psi)			Time	Liter	Expired date Cylinder Number Estimated Recorder due date
CEM	N ₂	2000	35	880	25	15.15	31-Dec-27	Waiting delivery	800	20	12.40	31-Dec-27	Waiting delivery	1290	36	20.00	31-Dec-27	Waiting delivery	850	15	10.08	12-Sep-27	Waiting delivery	57.68
	NO _x	2000	34	1350	23	20.93	26-Oct-28	from vendor	1050	17	16.28	26-Oct-28	from vendor	1080	18	16.90	26-Oct-28	from vendor	940	15	14.57	12-Sep-27	Waiting delivery	68.67
	SO ₂	2000	22	500	4	7.75	19-Feb-28	Spare	290	1	4.50	19-Feb-28	Spare	400	3	6.20	19-Feb-28	Spare	1390	16	21.55	6-Jul-29	Waiting delivery	39.99
	CO	2000	34	500	14	13.95	17-Aug-28	Spare	700	10	17.50	17-Aug-28	Spare	800	12	20.00	17-Aug-28	Spare	580	7.5	14.75	16-Nov-29	Waiting delivery	66.20
	O ₂	2000	34	47	700	10	16.45	20-May-29	Waiting delivery	1760	31	41.36	20-May-29	Waiting delivery	1980	36	46.53	20-May-29	Waiting delivery	1670	29	39.25	16-Nov-29	Waiting delivery

*Note : Normal Pressure is 2000 PSI
 N₂: Calibrate 1 time / 1 week NO_x, SO₂, CO, O₂: Calibrate 1 time / 2 week *EPD:Expired date, CN:Cylinder Number, ES PE:Estimated Recorder Due Date

Spare Standard Gas *N₂ Has Store 31,50 Litre
 *NO_x Has Store 31 Litre
 *SO₂ Has Store 31 Litre (CC747327 6-JUL-2029, EB0146949 06-DEC-2029, EB0146956 06-DEC-2029)
 *CO Has Store 31,50 Litre (CC746718 16-NOV-2029, CC7466735 16-NOV-2029)
 *O₂ Has Store 34 Litre



Issue date 1-Jun-22

Report CEM May-22

HRSG 11

NRSG 11															
Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	Little 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil	
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	4.24	3/5/2022 08:00	874.83	3.55	2.77	3.81							18.88	
NO _x 7%O ₂	ppm.	78.13	4/5/2022 16:00	1,462.60	55.49	43.97	71.56						96	152	
CO 7%O ₂	ppm.	8.06	5/5/2022 01:00	880.33	5.36	3.78	6.67						690	690	
Opacity	%	2.59	5/5/2022 01:00	874.83	0.82	0.15	1.06								
O ₂	%	13.99	5/5/2022 11:00	914.89	13.71	13.41	13.87								
Flow	1000M ³ /Hr	1,581.62	6/5/2022 18:00		1,133.42	823.11	1,509.04								

HRSG 12

Description		Unit / Hr.	Fuel Gas					Fuel Oil					Air Control Standard		
			Maximum			Average Values	Minimum Values	95th % Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil
			Values	Day	Flow				Values	Day	Flow				
SO ₂ 7%O ₂	ppm.	2.82	3/5/2022 07:00	884.45	1.81	1.03	2.21								18.88
NO _x 7%O ₂	ppm.	68.77	5/5/2022 15:00	1,516.85	46.01	34.15	60.04							96	152
CO 7%O ₂	ppm.	8.97	3/5/2022 22:00	873.00	3.48	1.65	4.68							690	690
Opacity	%	3.11	4/5/2022 01:00	878.04	1.11	0.66	1.35								
O ₂	%	13.99	7/5/2022 05:00	1,281.56	13.78	13.45	13.93								
Flow	1000M ³ /Hr	1,601.76	6/5/2022 05:00		1,127.32	843.25	1,540.72								

* Air Control Standard of (EIA)

(រោងចក្រ ប្រតិបត្តិ)

(រោងចក្រ ផលិត)

Report CEM May-22

HRSG 21

NRSG 21															
Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil	
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	-	1/5/2022 00:00	-	-	-	-							18.88	
NO _x 7%O ₂	ppm.	-	1/5/2022 00:00	-	-	-	-						96	152	
CO 7%O ₂	ppm.	-	1/5/2022 00:00	-	-	-	-						690	690	
Opacity	%	-	1/5/2022 00:00	-	-	-	-								
O ₂	%	-	1/5/2022 00:00	-	-	-	-								
Flow	1000M ³ /Hr	-	1/5/2022 00:00	-	-	-	-								

HRSG 22

TRGS 22		Fuel Gas										Fuel Oil						Air Control Standard	
Description	Unit / Hr.	Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel					
		Values	Day	Flow				Values	Day	Flow									
SO ₂ 7%O ₂	ppm.	2.93	2/5/2022 08:00	875.29	2.06	1.44	2.44												
NO _x 7%O ₂	ppm.	69.99	1/5/2022 16:00	1,586.43	54.15	45.10	67.79						96	15.8					
CO 7%O ₂	ppm.	10.84	1/5/2022 14:00	903.21	9.96	9.30	10.73						690	690					
Opacity	%	1.91	2/5/2022 08:00	875.29	0.48	0.12	0.62												
O ₂	%	13.98	1/5/2022 00:00	1,225.71	13.64	13.49	13.78												
Flow	1000M ³ /Hr	1,645.02	1/5/2022 21:00		1,157.56	867.28	1,613.39												

* Air Control Standard of (EIA)

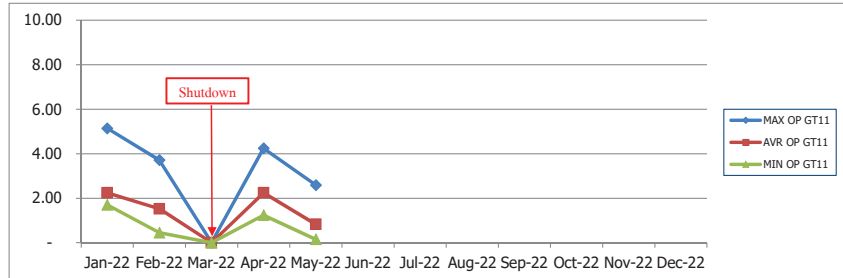
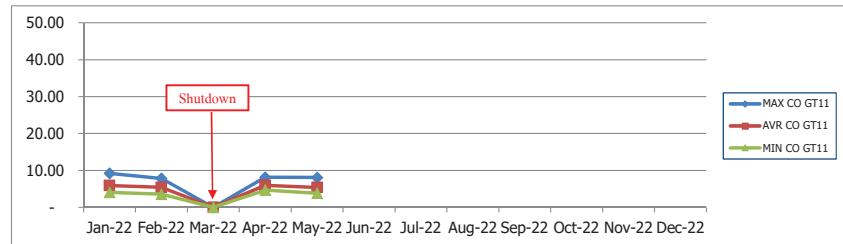
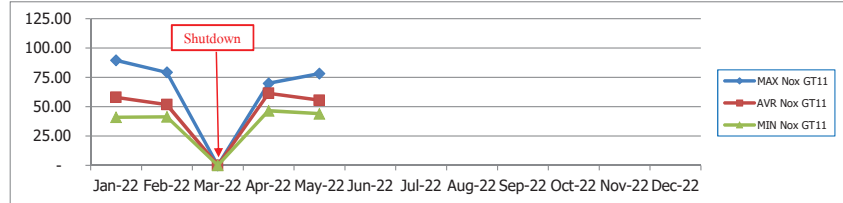
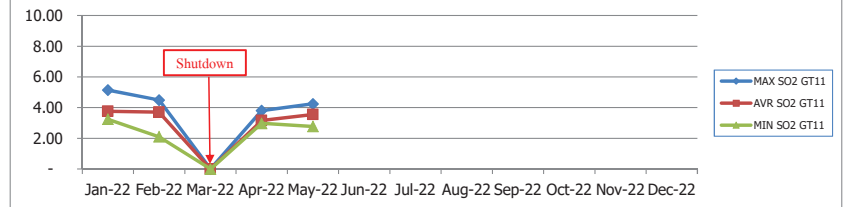
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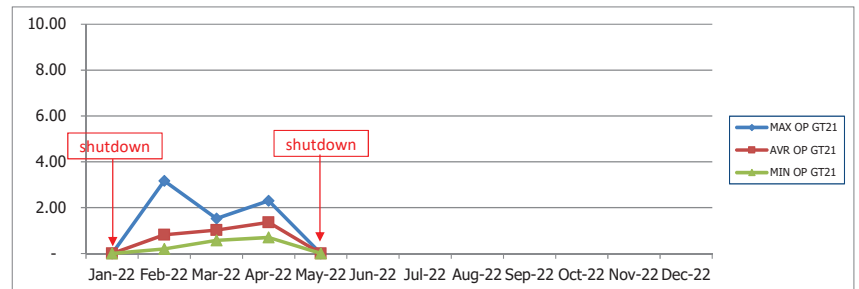
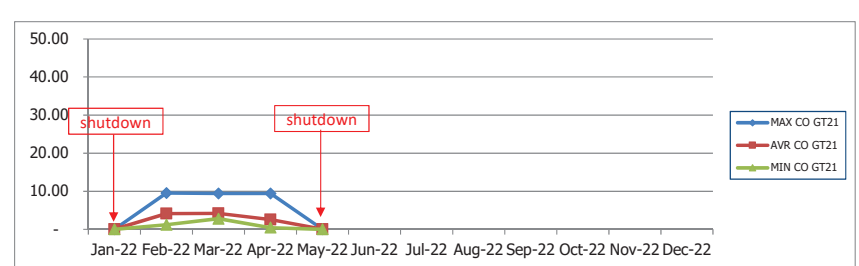
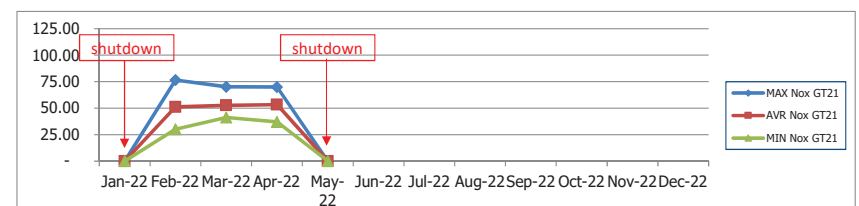
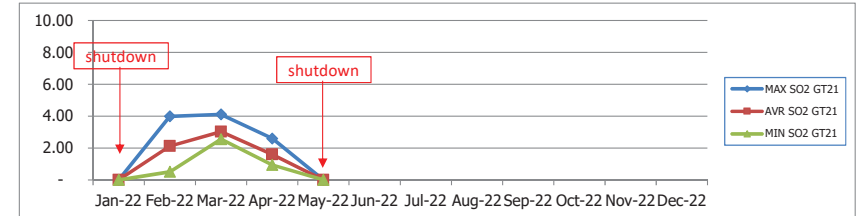
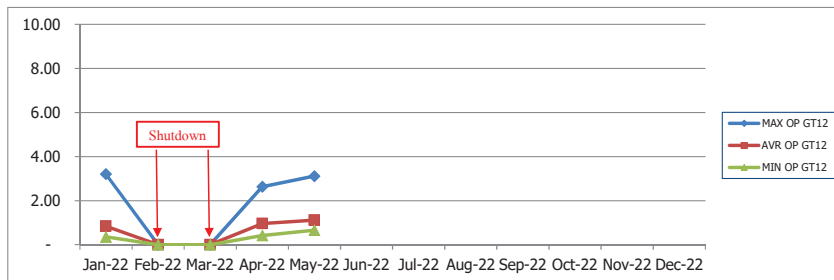
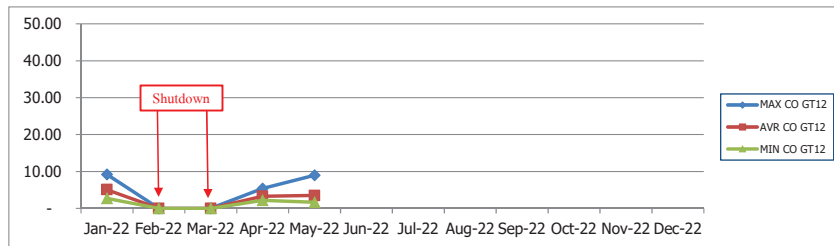
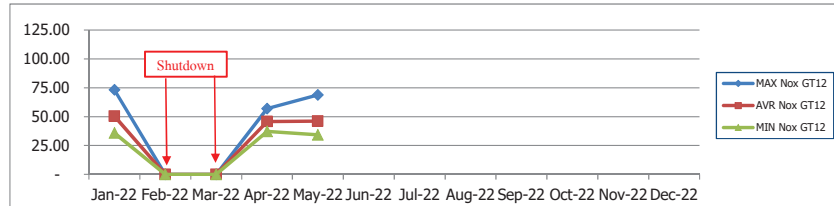
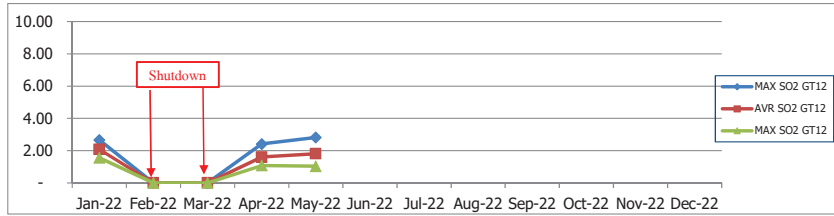
Maintenance Statistic of Environment Protection Equipment

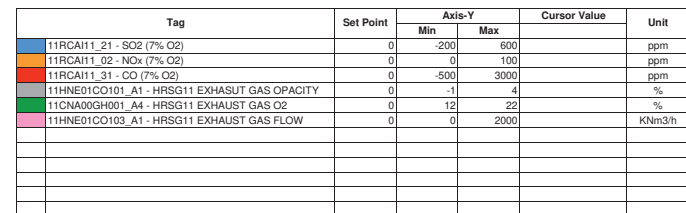
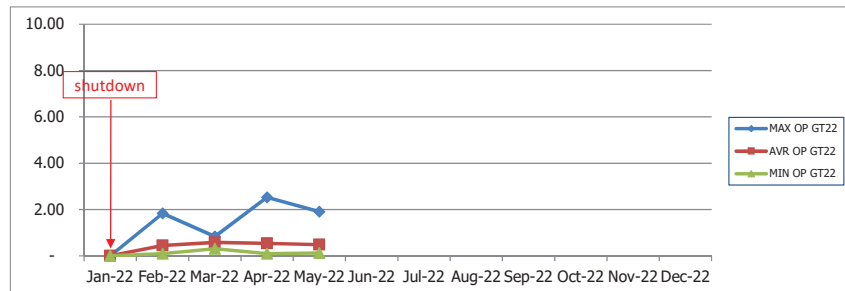
Month: May-22

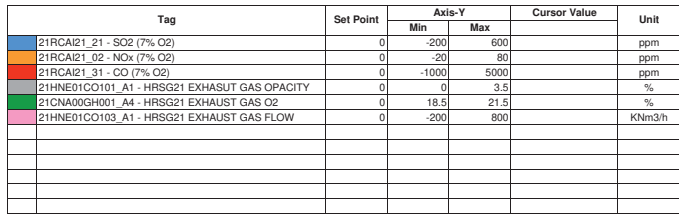
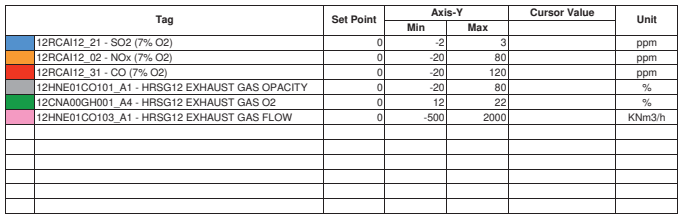
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No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard																
5			-	5			-	5			-	5			-	1			-																
Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)																			
Part Damage				Part Damage				Part Damage				Part Damage				Part Damage																			
Site Conditions				Site Conditions				Site Conditions				Site Conditions				Site Conditions																			
Human Error				Human Error				Human Error				Human Error				Human Error																			
Calibration					Calibration					Calibration					Calibration					Calibration															
Process	Zero Error (% of FS)				Span Error (% of FS)	Zero Error (% of FS)				Span Error (% of FS)	Zero Error (% of FS)				Span Error (% of FS)	Zero Error (% of FS)				Span Error (% of FS)	As Found	As Leth													
	Cal.1	Cal.2	Cal.3	Cal.4		Cal.1	Cal.2	Cal.3	Cal.4		Cal.1	Cal.2	Cal.3	Cal.4		Cal.1	Cal.2	Cal.3	Cal.4			Cal.5	Cal.1	Cal.2	Cal.3	Cal.4									
Nox	0.50	-	-0.08	-	-0.08	0.08	0.16	0.25	Nox	1.00	-	-1.25	-	-0.08	0.50	2.25	0.25	Nox	-	0.08	-	-0.08	-	0.33	0.08	Nox	-	-	-	-0.08	-	95.10	-	96.40	96.20
SOx	0.02	-	-0.02	-	0.00	0.97	0.36	0.22	SOx	-0.06	-	-0.08	-	0.02	0.33	4.25	0.91	SOx	-	0.00	-	0.02	-	0.24	0.31	SOx	-	-	-	-1.03	-	-	2.73		
CO	0.00	-	0.00	-	-0.10	0.37	0.06	0.59	CO	0.00	-	0.00	-	-0.11	0.44	2.20	0.11	CO	-	0.00	-	0.10	-	0.54	0.43	CO	-	-	-	0.10	-	-	0.43		
O2	-0.17	-	0.30	-	-0.04	0.08	0.21	0.13	O2	0.91	-	-1.82	-	1.73	1.08	2.52	1.78	O2	-	-0.69	-	0.21	-	0.52	0.17	O2	-	-	-	-0.30	-	-	0.34		
Remark																																			

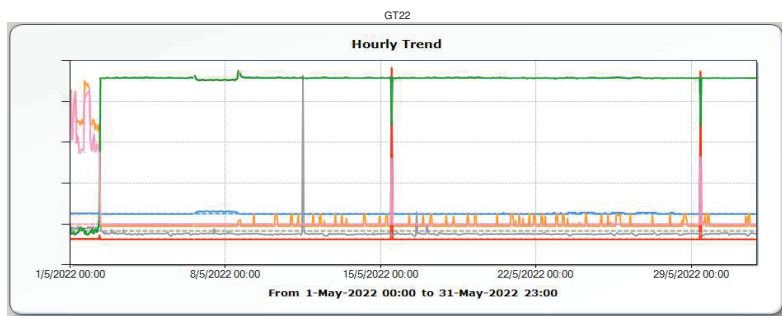
* :Re-Calibrate (Zero Diff >±1%) (Span Diff >±2%)











Tag	Set Point	Axis-Y		Cursor Value	Unit
		Min	Max		
22RCAI22_21 - SO2 (7% O2)	0	-200	600		ppm
22RCAI22_02 - NOx (7% O2)	0	-20	80		ppm
22RCAI22_31 - CO (7% O2)	0	-500	3500		ppm
22HNE01CO101_A1 - HRSG22 EXHAUST GAS OPACITY	0	-5	25		%
22CNA00GH001_A4 - HRSG22 EXHAUST GAS O2	0	12	22		%
22HNE01CO103_A1 - HRSG22 EXHAUST GAS FLOW	0	-500	2000		KNm3/h

Calibrate and Maintenance Continuous Emission Monitor				page 1
Monthly Report				May-22
D/M/Y	CEMs	Description	Remark	
3/5/2022	11	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65021961	
		Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65021972	
	21	Inspection & calibrate Zero Skip : No calibrate because HRSG21 SHUTDOWN	PM 65021983	
	22	Inspection & calibrate Zero	PM 65021994	
		Skip : No calibrate because Display Touch Screen not : Detect		

Calibrate and Maintenance Continuous Emission Monitor				page 2
Monthly Report				May-22
D/M/Y	CEMs	Description	Remark	
10/5/2022	11	Inspection & calibrate Zero Skip : No calibrate because HRSG11 SHUTDOWN	PM 65025461	
	12	Inspection & calibrate Zero Skip : No calibrate because HRSG12 SHUTDOWN	PM 6505472	
	12	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65025483	
		Inspection & calibrate Zero Skip : No calibrate because CEMs Analyzer not : responding to standard gas	PM 65025494	

Calibrate and Maintenance Continuouse Emission Monitor				page 3
Monthly Report				May-22
D/M/Y	CEMs	Description	Remark	
17/5/2022	11	Inspection & calibrate Zero and span Replace Sec filter element (GC-90)9057000200 Insp.Analyzer;Sample gas flow:confrim flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Sec filter element (PA-5L)9057000300 Replace Mist Catcher (MC-050A)9057003300 Check the water system drain separator Replace Pri filter element 9024000100 Clean filter of cem system (Opacity) Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of eletric cooler	PM 65026344	
	12	Inspection & calibrate Zero and span Replace Sec filter element (GC-90)9057000200 Insp.Analyzer;Sample gas flow:confrim flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Sec filter element (PA-5L)9057000300 Replace Mist Catcher (MC-050A)9057003300 Check the water system drain separator Replace Pri filter element 9024000100 Clean filter of cem system (Opacity) Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of eletric cooler	PM 65026361	
	21	Inspection & calibrate Zero Skip : No calibrate because HRS621 SHUTDOWN	PM 65026378	
	22	Inspection & calibrate Zero Skip : No calibrate because CEMs Analyzer not : responding to standard gas	PM 65026389	

Calibrate and Maintenance Continuouse Emission Monitor				page 4
Monthly Report				May-22
D/M/Y	CEMs	Description	Remark	
24/5/2022	11	Inspection & calibrate Zero Skip : No calibrate because HRS611 SHUTDOWN	PM 65026970	
	12	Inspection & calibrate Zero Skip : No calibrate because HRS612 SHUTDOWN	PM 65026981	
	21	Inspection & calibrate Zero and span Replace Sec filter element (GC-90)9057000200 Insp.Analyzer;Sample gas flow:confrim flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Sec filter element (PA-5L)9057000300 Replace Mist Catcher (MC-050A)9057003300 Check the water system drain separator Replace Pri filter element 9024000100 Clean filter of cem system (Opacity) Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of eletric cooler	PM 65026992	
	22	Inspection & calibrate Zero and span Replace Sec filter element (GC-90)9057000200 Insp.Analyzer;Sample gas flow:confrim flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Sec filter element (PA-5L)9057000300 Replace Mist Catcher (MC-050A)9057003300 Check the water system drain separator Replace Pri filter element 9024000100 Clean filter of cem system (Opacity) Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of eletric cooler	PM 65027009	

Calibrate and Maintenance Continuouse Emission Monitor				page 5
Monthly Report				May-22
D/M/Y	CEMs	Description	Remark	
31/5/2022	11	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow:confrim flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of eletric cooler	PM 65027775	
	12	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow:confrim flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of eletric cooler	PM 65027786	
	21	Inspection & calibrate Zero Skip : No calibrate because HRS621 SHUTDOWN	PM 65027797	
	22	Inspection & calibrate Zero Skip : No calibrate because HRS622 SHUTDOWN	PM 65027808	



STANDARD GAS FOR CEMs REMAINING REPORT

Jun-22

STANDARD	GAS	Full condition	HRSG 11						HRSG 12						HRSG 21						HRSG 22						TOTAL
			(Psi)	Time	Liter	Expired date / Cylinder Number / Estimated Recorder due date	Order status / Spare Standard gas	(Psi)	Time	Liter	Expired date / Cylinder Number / Estimated Recorder due date	Order status / Spare Standard gas	(Psi)	Time	Liter	Expired date / Cylinder Number / Estimated Recorder due date	Order status / Spare Standard gas	(Psi)	Time	Liter	Expired date / Cylinder Number / Estimated Recorder due date	Order status / Spare Standard gas	GAS				
	N ₂	2000	35	31	880	23	13.04	31-Dec-27 C15960V Jun-22	Spare 14-Apr-30 4601318Y	790	20	12.25	31-Dec-27 C17760V May-22	Spare 14-Apr-30 4601276Y	1270	36	19.89	31-Dec-27 C15960V Jun-22	640	15	9.92	12-Sep-27 C15960V Apr-22	Spare 14-Apr-30 4601276Y	55.49			
	NO _x	2000	34	31	1300	22	20.15	26-Oct-28 CC73869B Nov-22	1040	16.8	16.12	26-Oct-28 CC73869B Sep-22	1040	17	16.12	26-Oct-28 CC73869B Sep-22	820	14	14.26	26-Oct-28 CC73869B Sep-22	820	14	14.26	26-Oct-28 CC73869B Sep-22	66.65		
	SO ₂	2000	22	31	400	3	6.20	19-Feb-28 EB01238M Jun-22	Spare 6-Dec-29 EB0146949	1650	19	25.58	6-Jul-29 CC747327 Sep-22	280	1	4.34	28-Sep-28 CC485922 Dec-21	Spare 6-Dec-29 EB0146949	1350	15	20.93	6-Dec-29 CC747327 Jun-22	Spare 6-Dec-29 EB0146949	57.04			
	CO	2000	34	31	780	12	12.09	17-Aug-28 CC167083 May-22	890	9.8	17.25	10-Sep-28 D450316 Apr-22	Spare 16-Nov-29 CC746718	790	11.8	19.75	23-Nov-28 D338442 May-22	Waiting delivery from vendor	580	7.8	14.50	23-Nov-28 D338442 Mar-22	Spare 16-Nov-29 CC746718	63.59			
	O ₂	2000	34	47	890	10	16.22	26-Mar-29 SN69 May-22	1750	31	41.13	26-Mar-29 SN69 Apr-23	1950	35	45.83	26-Mar-29 SN69 Jun-23	1650	29	39.01	26-Mar-29 SN69 Mar-23	1650	29	39.01	26-Mar-29 SN69 Mar-23	142.18		

*Note : Normal Pressure is 2000 PSL

N2: Calibrate 1 time / 1 week NO_x,SO₂,CO,O₂: Calibrate 1 time / 2 week *EPD:Expired date , CN:Cylinder Number , ES PE:Estimated Recorder Due Date

Spare Standard Gas *N2 Has Store 31,50 Litre (4621318Y 14-APR-2030 , 4621276Y 14-APR-2030 , 5662952Y 14-APR-2030

*Nox Has Store 31 Litre

*SO2 Has Store 31 Litre (EB0146949 06-DEC-2029 , EB0146956 06-DEC-2029)

*CO Has Store 31,50 Litre (CC746718 16-NOV-2029 , CC7466735 16-NOV-2029)

*O2 Has Store 34 Litre

Recorded By

[Redacted Signature]

Approved By

[Redacted Signature]

3-Jul-22

Report CEM Jun-22

HRSG 11																
Description	Unit / Hr.	Fuel Gas							Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil		
		Values	Day	Flow				Values	Day	Flow						
SO ₂ 7%O ₂	ppm.	3.87	13/6/2022 07:00	873.46	3.31	2.82	3.62									18.88
NO _x 7%O ₂	ppm.	78.34	12/6/2022 19:00	1,550.49	62.31	46.17	76.61									96 152
CO 7%O ₂	ppm.	5.72	12/6/2022 09:00	1,019.49	4.92	4.19	5.42									690 690
Opacity	%	3.52	12/6/2022 09:00	873.46	1.80	1.02	3.00									
O ₂	%	13.86	12/6/2022 10:00	982.64	13.63	13.46	13.82									
Flow	1000M ³ /Hr	1,604.51	12/6/2022 06:00		1,297.02	835.92	1,562.85									

HRSG 12

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil	
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	-	1/6/2022 00:00	-	-	-	-								18.88
NO _x 7%O ₂	ppm.	-	1/6/2022 00:00	-	-	-	-							96	152
CO 7%O ₂	ppm.	-	1/6/2022 00:00	-	-	-	-							690	690
Opacity	%	-	1/6/2022 00:00	-	-	-	-								
O ₂	%	-	1/6/2022 00:00	-	-	-	-								
Flow	1000M ³ /Hr	-	1/6/2022 00:00	-	-	-	-								

* Air Control Standard of (EIA)

Recorded By

[Redacted Signature]

Approved By

[Redacted Signature]

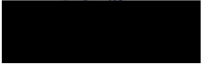
Report CEM Jun-22
HRSG 21

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil	
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	-	1/6/2022 00:00	-	-	-	-							18.88	
NO _x 7%O ₂	ppm.	-	1/6/2022 00:00	-	-	-	-						96	152	
CO 7%O ₂	ppm.	-	1/6/2022 00:00	-	-	-	-						690	690	
Opacity	%	-	1/6/2022 00:00	-	-	-	-								
O ₂	%	-	1/6/2022 00:00	-	-	-	-								
Flow	1000M ³ /Hr	-	1/6/2022 00:00	-	-	-	-								

Description	Unit / Hr.	Fuel Gas						Fuel Oil						Air Control Standard	
		Maximum			Average Values	Minimum Values	%tile 90 Values	Maximum			Average Values	Minimum Values	Fuel Gas	Fuel Oil	
		Values	Day	Flow				Values	Day	Flow					
SO ₂ 7%O ₂	ppm.	9.96	19/6/2022 07:00	929.08	9.86	9.73	9.96							18.88	
NO _x 7%O ₂	ppm.	73.87	18/6/2022 18:00	828.83	53.90	47.98	64.97						96	152	
CO 7%O ₂	ppm.	9.91	19/6/2022 07:00	929.08	9.01	6.81	9.82						690	690	
Opacity	%	1.73	19/6/2022 20:00	858.81	0.53	0.30	0.67								
O ₂	%	13.94	19/6/2022 16:00	874.37	13.75	13.39	13.85								
Flow	1000M ³ /Hr	1,625.79	18/6/2022 21:00		967.03	827.68	1,067.00								

* Air Control Standard of (EIA)

Recorded By



Approved By

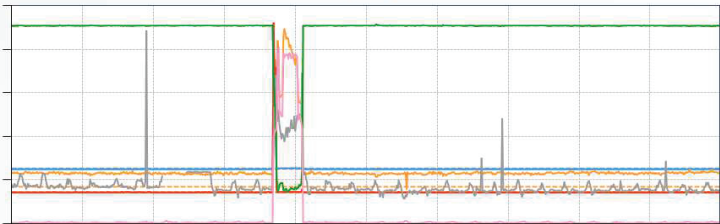
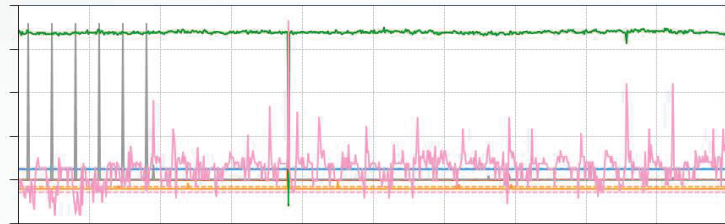


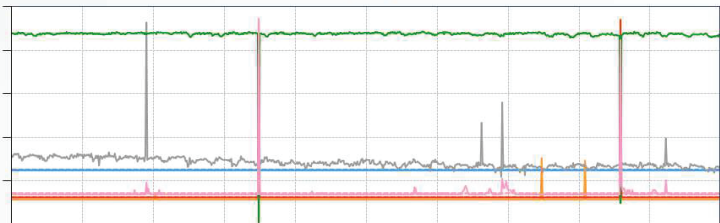
Maintenance Statistic of Environment Protection Equipment

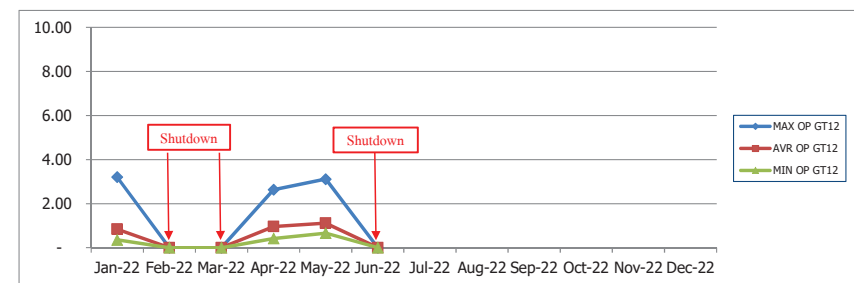
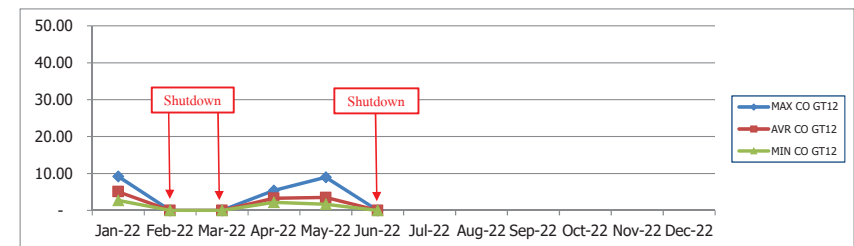
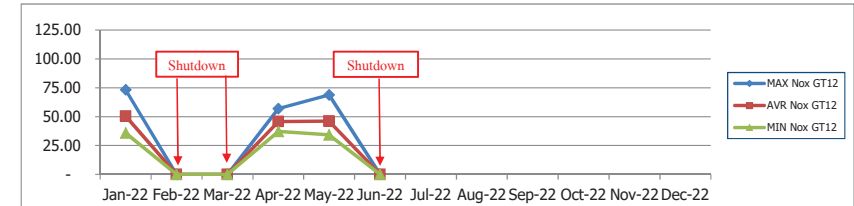
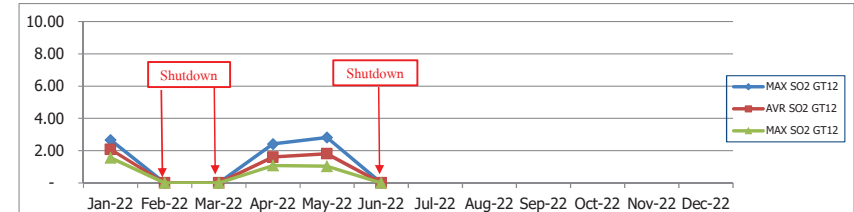
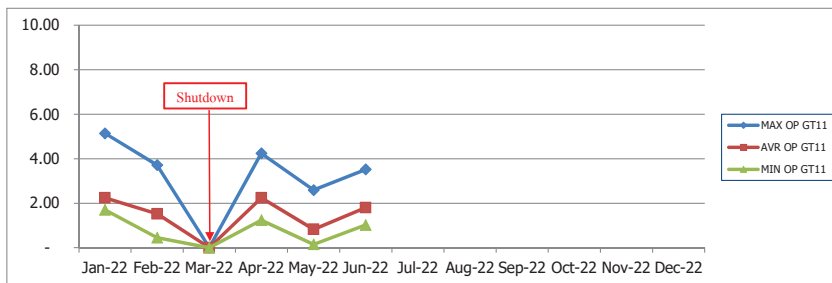
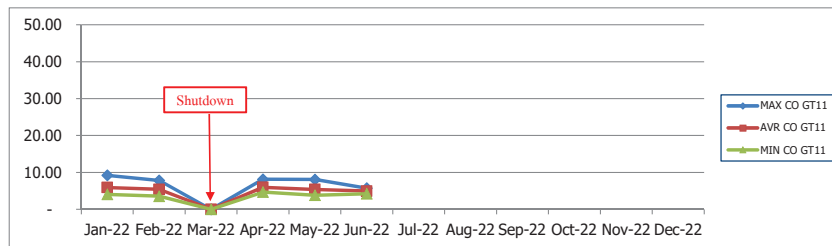
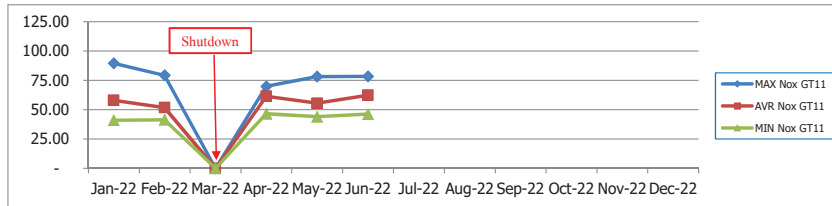
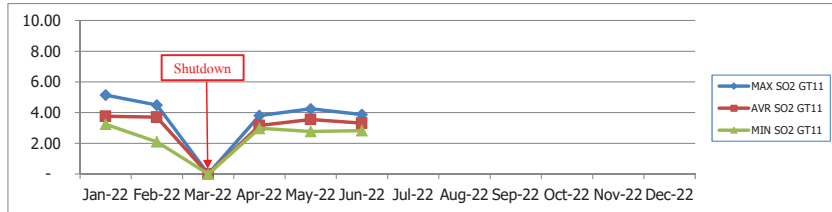
Month: Jun-22

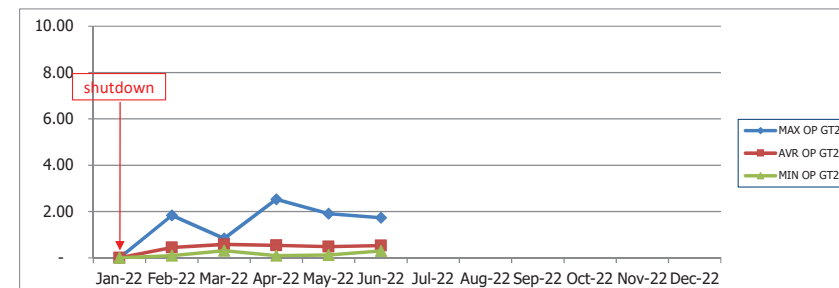
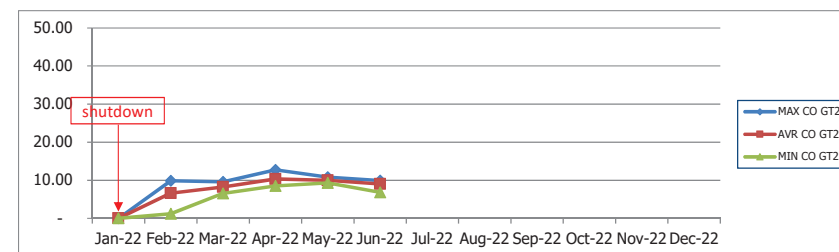
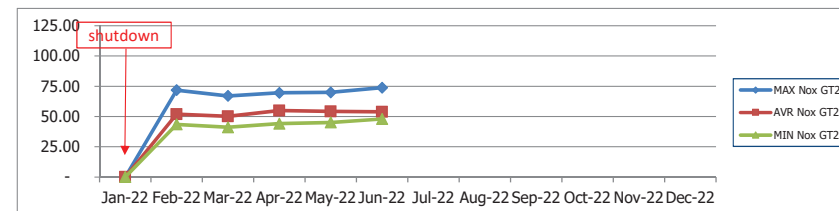
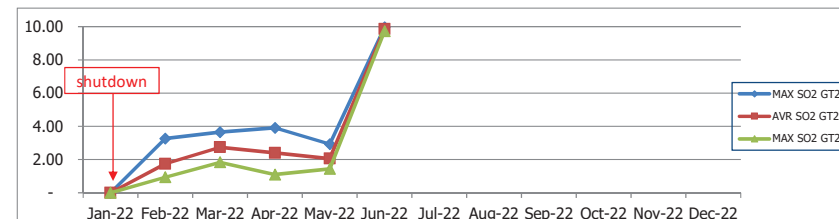
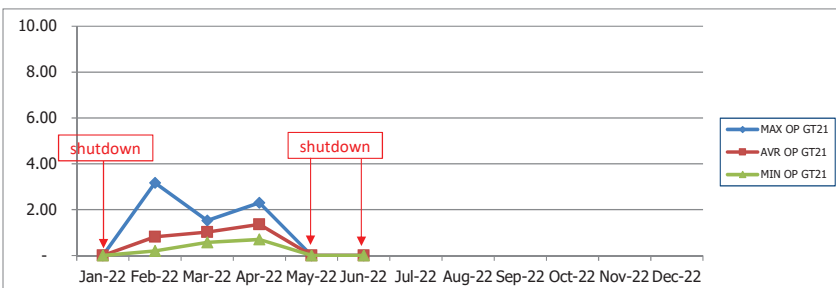
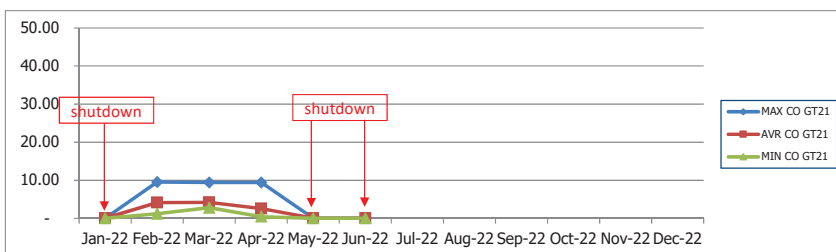
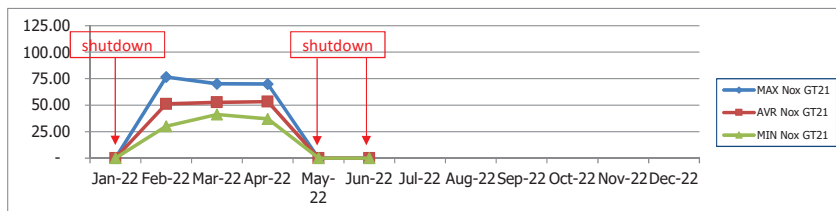
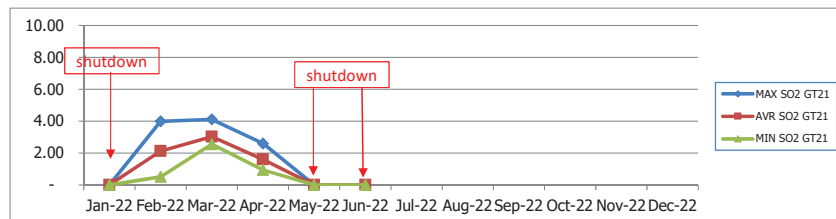
CEMS HRSG11				CEMS HRSG12				CEMS HRSG21				CEMS HRSG22				Waste Water Control																
No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard	No. of PM	No. of CM	No. of IM	No. of Exceed Standard													
4			-	4			-	4			-	4			-	1																
Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)				Cause of Failure (No. of Incident)																
Part Damage				-	Part Damage				-	Part Damage				-	Part Damage				-													
Site Conditions				-	Site Conditions				-	Site Conditions				-	Site Conditions				-													
Human Error				-	Human Error				-	Human Error				-	Human Error				-													
Calibration				Calibration				Calibration				Calibration				Calibration																
Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	Zero Error (% of FS)				Span Error (% of FS)		Parameter	As Found	As Left									
	Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2	Cal.3	Cal.4	Cal.1	Cal.2		Cal.1	Cal.2									
Nox	-	-0.25	-	-0.08	0.08	0.16	Nox	-	0.08	-	0.16	0.08	0.33	Nox	-0.08	-	-0.08	-	0.08	0.33	Nox	-	-	0.33	2.58	-	-	PM Stage	7.29	8.76	7.37	9.96
SOx	-	-0.02	-	0.00	1.00	0.13	SOx	-	0.02	-	0.00	0.11	1.17	SOx	-0.06	-	-0.04	-	0.13	0.31	SOx	-	-	1.03	7.86	-	-					
CO	-	-0.10	-	-0.10	0.15	0.66	CO	-	-0.11	-	0.11	0.44	0.44	CO	-0.10	-	-0.10	-	0.21	0.00	CO	-	-	0.21	4.79	-	-					
O2	-	-0.04	-	-0.30	0.13	0.04	O2	-	0.69	-	0.73	0.13	0.04	O2	0.34	-	0.43	-	0.04	0.04	O2	-	-	1.70	0.69	-	-					
Remark																																

* :Re-Calibrate (Zero Diff >=1%) (Span Diff >=2%)

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[illegible][illegible]





Calibrate and Maintenance Continuouse Emission Monitor				page 1
Monthly Report				Jun-22
D/M/Y	CEMs	Description	Remark	
7/6/2022	11	Inspection & calibrate Zero Skip : No calibrate because HRSG11 SHUTDOWN	PM 65028511	
	12	Inspection & calibrate Zero Skip : No calibrate because HRSG12 SHUTDOWN	PM 65028522	
	21	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65028533	
	22	Inspection & calibrate Zero Skip : No calibrate because Display Touch Screen not : Detect	PM 65028544	

Calibrate and Maintenance Continuouse Emission Monitor				page 2
Monthly Report				Jun-22
D/M/Y	CEMs	Description	Remark	
14/6/2022	11	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Pri Filter Holder Cap 9024000300 Replace Pri Filter Element Cap 9024000300 Insp.Heated tube (piping) and probe Cabinet;Vent filter;clean if dirty replace if deteriorated Replace Sec filter element (GC-90)9057000200 Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65032201	
		Replace Pri Filter Element Cap 9024000400 Insp.Heated tube (piping) and probe Cabinet;Vent filter;clean if dirty replace if deteriorated Replace Sec filter element (GC-90)9057000200 Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65032217	
	12	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Pri Filter Holder Cap 9024000300 Replace Pri Filter Element Cap 9024000400 Insp.Heated tube (piping) and probe Cabinet;Vent filter;clean if dirty replace if deteriorated Replace Sec filter element (GC-90)9057000200 Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65032217	
		Replace Pri Filter Holder Cap 9024000300 Replace Pri Filter Element Cap 9024000400 Insp.Heated tube (piping) and probe Cabinet;Vent filter;clean if dirty replace if deteriorated Replace Sec filter element (GC-90)9057000200 Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65032217	
	21	Inspection & calibrate Zero Skip : No calibrate because HRSG21 SHUTDOWN	PM 65032233	
	22	Inspection & calibrate Zero Skip : No calibrate because Display Touch Screen not : Detect	PM 65032244	

Calibrate and Maintenance Continuouse Emission Monitor				page 3
Monthly Report				Jun-22
D/M/Y	CEMs	Description	Remark	
21/6/2022	11	Inspection & calibrate Zero Skip : No calibrate because HRSG11 SHUTDOWN	PM 65032380	
	12	Inspection & calibrate Zero Skip : No calibrate because HRSG12 SHUTDOWN	PM 65032991	
	21	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Pri Filter Holder Cap 9024000300 Replace Pri Filter Element Cap 9024000400 Insp.Heated tube (piping) and probe Cabinet;Vent filter;clean if dirty replace if deteriorated Replace Sec filter element (GC-90)9057000200 Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65033002	
		Replace Pri Filter Holder Cap 9024000300 Replace Pri Filter Element Cap 9024000400 Insp.Heated tube (piping) and probe Cabinet;Vent filter;clean if dirty replace if deteriorated Replace Sec filter element (GC-90)9057000200 Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65033018	
	22	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Replace Pri Filter Holder Cap 9024000300 Replace Pri Filter Element Cap 9024000400 Insp.Heated tube (piping) and probe Cabinet;Vent filter;clean if dirty replace if deteriorated Replace Primary Filter O-ring 9057004700 Replace Pump Diaphragm Assembly 9057003200 Sampling system;Electronic cooler;clean the radiating Replace Air Filter (3mm) 9057005000 Replace Converter Catalyst tube(COM 50) 9057005100 Replace Scrubber (ESU-650A) 9057003400 Replace Protective Filter 9057005300 (inspection) HORIBA-Cabinet;Arrestor Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65033018	
		Replace Pri Filter Holder Cap 9024000300 Replace Pri Filter Element Cap 9024000400 Insp.Heated tube (piping) and probe Cabinet;Vent filter;clean if dirty replace if deteriorated Replace Primary Filter O-ring 9057004700 Replace Pump Diaphragm Assembly 9057003200 Sampling system;Electronic cooler;clean the radiating Replace Air Filter (3mm) 9057005000 Replace Converter Catalyst tube(COM 50) 9057005100 Replace Scrubber (ESU-650A) 9057003400 Replace Protective Filter 9057005300 (inspection) HORIBA-Cabinet;Arrestor Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65033018	

Calibrate and Maintenance Continuouse Emission Monitor				page 4
Monthly Report				May-22
D/M/Y	CEMs	Description	Remark	
28/6/2022	11	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65033769	
	12	Inspection & calibrate Zero and span Insp.Analyzer;Sample gas flow;confirm flow rate of 0 Insp.Sampling System Secondary filter 1,2 Insp.Drain trap 1;Replace Primary filter element Insp.Sampling System;Mist catcher;Check for dirt If the residual pressure is below approximately 1 Mpa Check the water system drain separator Check the hose dew inflow measuring system Calibration opacity when GT shutdown in case >0.2% Confirm the temperature of electric cooler	PM 65033780	
	21	Inspection & calibrate Zero Skip : No calibrate because HRSG11 SHUTDOWN	PM 65033791	
	22	Inspection & calibrate Zero Skip : No calibrate because HRSG12 SHUTDOWN	PM 65033802	