TEST REPORT

FORMAT NO : ENE/FM/38

Name of the Project	:	Shiga Energy Pvt. Ltd. (2 x 48.5 MW)			Type of Project	:	Hydro Electric Project
Address	:	Power House Tashiding, Hydro Electric Project, Kagaythang, P.O. – Yangtay, Geyzing, West Sikkim – 737111			Sampling Date	:	06.06.2023
					Period of Analysis	:	10.06.2023 – 10.06.2023
					Date of Issue	:	12.06.2023
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	: Stack Emission
Sample Condition	:	Sealed	Sample ID No.	:	ENV/71/M/A/I	Report No.	: ENV/71/M/TE(A)/I/23-24

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	D. G. – 500 KVA (Acoustic Enclosure attached)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	6.7056
Materials of Construction	:	M.S.	Stack I.D. at sampling pcint (mtr.)	:	0.3048
Capacity	:	500 KVA	Height of sampling port (mtr.) (from G.L.)	:	Final Exhaust
Emission Due to	:	Combustion of H.S.D			
Fuel Used	:	H.S.D	Permanent Platform & Ladder		No
Working Fuel Consumption	:	36 litr./hr.			
Pollution Control Device	:	Nil			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS	LIMIT
1.	Flue Gas Temperature	^{o}C	IS : 11255 (Part 1)	:	245.0	N.A.
2.	Barometric Pressure	mm of Hg.	--	:	744.0	N.A.
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	:	16.53	N.A.
4.	Quantity of Gas flow	$Nm^3/hr.$	IS : 11255 (Part III)	:	2440.94	N.A.
5.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	39.17	N.A.
6.	Concentration of NO_x	mg/Nm^3	IS 11255 (Part 7) : 2017 / ASTM D 1608-98, Sec. 11 (Vol. 11.07) : 2017	:	46.50	N.A.
7.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	7.8	N.A.
8.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0	10
9.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	:	41.55	150.0

Remarks : Limit as per CPCB [Emission Regulation Part IV : COINDS/26/1986-87]
: N.A. means Not Available.
: During monitoring temporary ladder and platform were provided.

Reviewed By :

DURBADAL CHAKRABORTY
Dy. Quality Manager

Authorised Signatory :

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

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TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Project	:	Shiga Energy Pvt. Ltd. (2 x 48.5 MW)				Type of Project	:	Hydro Electric Project	
Address	:	Sakyong, Geyzing, West Sikkim, Sikkim – 737111				Sampling Date	:	06.06.2023	
						Period of Analysis	:	10.06.2023 – 11.06.2023	
						Date of Issue	:	12.06.2023	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Stack Emission	
Sample Condition	:	Sealed	Sample ID No.	:	ENV/71/M/A/II	Report No.	:	ENV/71/M/TR(A)/II/23-24	

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	D. G. – 30 KVA (Acoustic Enclosure attached)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	2.95
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	0.0507
Capacity	:	30 KVA	Height of sampling port (mtr.) (from G.L.)	:	Final Exhaust
Emission Due to	:	Combustion of H.S.D			
Fuel Used	:	H.S.D	Permanent Platform & Ladder	:	No
Working Fuel Consumption	:	03 litr./hr.			
Pollution Control Device	:	Nil			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS	LIMIT
1.	Flue Gas Temperature	^{o}C	IS : 11255 (Part 1)	:	85.0	N.A.
2.	Barometric Pressure	mm of Hg.	--	:	744.0	N.A.
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	:	11.49	N.A.
4.	Quantity of Gas flow	$Nm^3/hr.$	IS : 11255 (Part III)	:	67.37	N.A.
5.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	17.69	N.A.
6.	Concentration of NO_x	mg/Nm^3	IS 11255 (Part 7) : 2017 / ASTM D 1608-98, Sec. 11 (Vol. 11.07) : 2017	:	21.52	N.A.
7.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	7.0	N.A.
8.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0	1.0
9.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part–1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	:	16.52	150.0

Remarks : Limit as per CPCB [Emission Regulation Part IV : COINDS/26/1986-87].
: N.A. means Not Available.
: During monitoring temporary ladder and platform were provided.

Reviewed By :

DURBADAL CHAKRABORTY
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TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Project	:	Shiga Energy Pvt. Ltd. (2 x 48.5 MW)			Type of Project	:	Hydro Electric Project	
Address	:	Kabirthang, Geyzing, Saktong, West Sikkim, Pin – 737111			Sampling Date	:	06.06.2023	
					Period of Analysis	:	10.06.2023 – 10.06.2023	
					Date of Issue	:	12.06.2023	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Stack Emission
Sample Condition	:	Sealed	Sample ID No.	:	ENV/71/M/A/III	Report No.	:	ENV/71/M/TR(A)/II /23-24

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	D. G. – 30 KVA (Acoustic Enclosure attached)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	2.95
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	0.0507
Capacity	:	30 KVA	Height of sampling port (mtr.) (from G.L.)	:	Final Exhaust
Emission Due to	:	Combustion of H.S.D			
Fuel Used	:	H.S.D	Permanent Platform & Ladder		No
Working Fuel Consumption	:	03 litr./hr.			
Pollution Control Device	:	Nil			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS	LIMIT
1.	Flue Gas Temperature	^{o}C	IS : 11255 (Part 1)	:	83.0	N.A.
2.	Barometric Pressure	mm of Hg.	--	:	744.0	N.A.
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	:	10.07	N.A.
4.	Quantity of Gas flow	$Nm^3/hr.$	IS : 11255 (Part III)	:	59.38	N.A.
5.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	12.70	N.A.
6.	Concentration of NO_x	mg/Nm^3	IS 11255 (Part 7) : 2017 / ASTM D 1608-93, Sec. 11 (Vol. 11.07) : 2017	:	16.22	N.A.
7.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	6.8	N.A.
8.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0	1.0
9.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685, D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	:	14.12	150.0

Remarks : Limit as per CPCB [Emission Regulation Part IV : COINDS/26/1986-87].
: N.A. means Not Available.
: During monitoring temporary ladder and platform were provided.

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Overseas : UAE ▪ Qatar ▪ Netherlands

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Project	:	Shiga Energy Pvt. Ltd. (2 x 48.5 MW)			Type of Project	:	Hydro Electric Project
Address	:	Barrage Sedang, West Sikkim, Sikkim – 737111			Sampling Date	:	06.06.2023
					Period of Analysis	:	10.06.2023 – 10.06.2023
					Date of Issue	:	12.06.2023
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	: No	Type of Sample	:	Stack Emission
Sample Condition	:	Sealed	Sample ID No. :	ENV/71/M/A/IV	Report No.	:	ENV/71/M/TR(A)/IV'23-24

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	D. G. – 82.5 KVA (Acoustic Enclosure attached)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	6.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	0.762
Capacity	:	82.5 KVA	Height of sampling port (mtr.) (from G.L.)	:	Final Exhaust
Emission Due to	:	Combustion of H.S.D			
Fuel Used	:	H.S.D	Permanent Platform & Ladder	:	No
Working Fuel Consumption	:	04 litr./hr.			
Pollution Control Device	:	Nil			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS	LIMIT
1.	Flue Gas Temperature	^{o}C	IS : 11255 (Part 1)	:	107.0	N.A.
2.	Barometric Pressure	mm of Hg.	--	:	692.0	N.A.
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	:	12.22	N.A.
4.	Quantity of Gas flow	$Nm^3/hr.$	IS : 11255 (Part III)	:	14308.56	N.A.
5.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	16.46	N.A.
6.	Concentration of NO_x	mg/Nm^3	IS 11255 (Part 7) : 2017 / ASTM D 1608-93, Sec. 11 (Vol. 11.07) : 2017	:	21.52	N.A.
7.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	7.2	N.A.
8.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0	1.0
9.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685,'D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	:	18.51	150.0

Remarks : Limit as per CPCB [Emission Regulation Part IV : COINDS/26/1986-87].
: N.A. means Not Available.
: During monitoring temporary ladder and platform were provided

Reviewed By :

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