

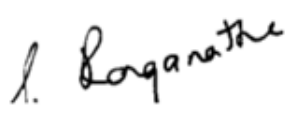
**Project Verification Report of  
UCR ID Number 134  
Wanger Homte Hydro Electric Project**

Ver-UCR-03  
21 Aug 2022

<b>COVER PAGE</b>	
<b>Project Verification Report Form (VR)</b>	
<i>Complete this form in accordance with the instructions.</i>	
<b>BASIC INFORMATION</b>	
<b>Name of approved UCR Project Verifier / Reference No.</b>	S.Ranganathan (Independent Verifier)
<b>Type of Accreditation</b>	<input type="checkbox"/> CDM or other GHG Accreditation <input type="checkbox"/> ISO 14065 Accreditation <input checked="" type="checkbox"/> UCR Approved Verifier
<b>Approved UCR Scopes and GHG Sectoral scopes for Project Verification</b>	Sectoral Scope : 01 Energy Industries
<b>Validity of UCR approval of Verifier</b>	From 21 Jan 2022 onwards
<b>Completion date of this VR</b>	21 Aug 2022
<b>Title of the project activity</b>	Wanger Homte Hydro Electric Project
<b>Project reference no.</b> (as provided by UCR Program)	134
<b>Name of Entity requesting verification service</b> (can be Project Owners themselves or any Entity having authorization of Project Owners, example aggregator.)	M/s Panchhor Hydro Power Pvt. Ltd
<b>Contact details of the representative of the Entity, requesting verification service</b>	Mr.Merreddy Keshav Reddy Mob : 8125619989

(Focal Point assigned for all communications)	E Mail : asthagreen@gmail.com
<b>Country where project is located</b>	<b>India</b>
<b>Applied methodologies</b> (approved methodologies by UCR Standard used)	ACM0002 Version 20.0: Large-scale Consolidated Methodology Grid- connected electricity generation from renewable sources of CDM
<b>GHG Sectoral scopes linked to the applied methodologies</b>	SECTORAL SCOPE - 01 Energy industries (Renewable/Non- Renewable Sources)
<b>Project Verification Criteria:</b> Mandatory requirements to be assessed	<input checked="" type="checkbox"/> UCR Standard <input checked="" type="checkbox"/> Applicable Approved Methodology <input checked="" type="checkbox"/> Applicable Legal requirements /rules of host country <input checked="" type="checkbox"/> Eligibility of the Project Type <input checked="" type="checkbox"/> Start date of the Project activity <input checked="" type="checkbox"/> Meet applicability conditions in the applied methodology <input checked="" type="checkbox"/> Credible Baseline <input checked="" type="checkbox"/> Do No Harm Test <input checked="" type="checkbox"/> Emission Reduction calculations <input checked="" type="checkbox"/> Monitoring Report <input checked="" type="checkbox"/> No GHG Double Counting <input type="checkbox"/> Others (please mention below)
<b>Project Verification Criteria:</b>	<input checked="" type="checkbox"/> Environmental Safeguards Standard and do-

Optional requirements to be assessed	no-harm criteria <input checked="" type="checkbox"/> Social Safeguards Standard do-no-harm criteria
<p><b>Project Verifier's Confirmation:</b></p> <p>The <i>UCR Project Verifier</i> has verified the UCR project activity and therefore confirms the following:</p>	<p>The UCR Project Verifier S.Ranganathan, certifies the following with respect to the UCR Project Activity Wanger Homte Hydro Electric Project.</p> <p><input checked="" type="checkbox"/> The Project Owner has correctly described the Project Activity in the Project Concept Note (dated 10/07/2022) including the applicability of the approved methodology ACM0002 Version 20.0 "Grid-connected electricity generation from renewable sources" and meets the methodology applicability conditions and has achieved the estimated GHG emission reductions, complies with the monitoring methodology and has calculated emission reductions estimates correctly and conservatively.</p> <p><input checked="" type="checkbox"/> The Project Activity is likely to generate GHG emission reductions amounting to the estimated 112,856 TCO<sub>2e</sub>, as indicated in the PCN, which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable UCR rules, including ISO 14064-2 and ISO 14064-3.</p> <p><input checked="" type="checkbox"/> The Project Activity is not likely to cause any</p>

	<p>net-harm to the environment and/or society</p> <p><input checked="" type="checkbox"/> The Project Activity complies with all the applicable UCR rules<sup>1</sup> and therefore recommends UCR Program to register the Project activity with above mentioned labels.</p>
<p><b>Project Verification Report, reference number and date of approval</b></p>	<p>UCR Verification report of Project ID 134</p>
<p><b>Name of the authorised personnel of UCR Project Verifier and his/her signature with date</b></p>	<p>S.Ranganathan</p>  <p>21 Aug 2022</p>

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# PROJECT VERIFICATION REPORT

## Executive summary

The verification assignment has been awarded by the project aggregator M/s Zenith Energy Services Private Limited, Hyderabad, India to carry out an independent verification of its UCR project Wanger Homte Hydro Electric Project to verify the CoU generated by the project activity for the monitoring period 15/02/2021 to 31/12/2021 both days included. The project activity is approved by UCR and the project ID is 134.

The project activity is a grid connected Hydro Electric Power project located in Kinnaur district in the state of Himachal Pradesh, India. Wanger-Homte Hydro Electric Project is a run - of - the river type hydroelectric project involving diversion of Bhabha Khad inflows by constructing a raised crested type diversion weir. The diverted water flows through conveyance channel/tunnel to a surface desilting tank, and designed to exclude all silt particles down to 0.20 mm size. The silt free water is carried through power tunnel up to underground Surge Tank. The inflows will be lead to surface power house through a surface penstock to feed three Francis turbines driven generating units of 8.20 MW each (Total 24.60 MW). ).

The project activity started supply of power to the grid from 15 Feb 2021.

The project activity has adopted approved methodology ACM0002 Version 20.0 of CDM and it meets the methodology applicability conditions. The project activity complies with the monitoring requirements of the adopted methodology ACM0002 Version 20.0 of CDM. The emission reductions are estimated correctly and conservatively.

The scope of verification is independent, objective review and expert determination of the emission reductions of the project activity. The approach adopted is to check the quality of data, the monitoring system, the emission reduction calculations and double accounting.

Interview with the project proponent team was conducted over the web to ascertain the practices adopted and verify the site arrangements and practices.

The project activity has been assessed against the UCR standard, Verification guidance document, UCR Program manual, the adopted CDM methodology ACM0002 Version 20.0 "Grid-connected electricity generation from renewable sources" and the relevant rules and guidance.

Due professional care has been exercised during the verification activity and the report is a fair presentation of the activity carried out. The validation of the project activity is not part of the assignment. However, the project is deemed to be validated once registered by UCR.

The additional verification for this project activity is applicable as per UCR Guidance since the capacity of the project activity is 24.8MW which is above 15MW. The additional verification report is given as Annexure-2 to this report

The emission reductions for the monitoring period under consideration have been verified to be correct and meets the UCR guidelines.

The net emission reduction achieved for the verification period 15/02/2021 to 31/12/2021 both days included is 95,956 tCO<sub>2eq</sub>.

## Project Verification team, technical reviewer and approver

The verification was carried out by me,(S.Ranganathan) who is a qualified validator, verifier, technical expert/reviewer for SECTORAL SCOPE - 01 Energy industries (Renewable/Non-Renewable Sources).The resume of the verifier is given in the subsequent portion of the report.

## Project Verification team

No.	Role	Last name	First name	Affiliation (e.g. name of central or other office of UCR Project Verifier or outsourced entity)	Involvement in		
					Doc review	Off-Site inspection	Interviews
1.	Team Leader	Seshan	Ranganathan	Independent Verifier	Yes	Yes	Yes
2.	Validator	Seshan	Ranganathan	Independent Verifier	Yes	Yes	Yes
3	Technical Expert	Seshan	Ranganathan	Independent Verifier	Yes	No	No

## Means of Project Verification

### Desk/document review

The documents reviewed were to confirm the project activity is as per the PCN version 02 dated 10/07/2022 /6/ and to confirm the data provided in the monitoring report /7/ for the period 15/02/2021 to 31/12/2021 both days included. The documents reviewed were the detailed project report /14/, the Power Purchase Agreement /15/, Clearance from Forest department /16/, Approvals from Directorate of Energy Himachal Pradesh, Implementation agreement /17/, MOA of Panchhor Hydro Power Private Limited /18/, IREDA approvals /19/, the power generation details /20/ and calibration details of meters /21/.

The list of documents reviewed as part of the verification activity is available under the section Document reviewed or referenced in the subsequent sections of this report

### On-site inspection : Not applicable

<b>Date of off site inspection:</b>	No site visit was conducted and this meets the UCR guidelines. However interview of the staff at site and the project Proponents /Aggregator Office were held over web on		
No.	Activity performed Off-Site	Site location	Date
1.			
...			

### Interviews

No.	Interview			Date	Subject
	Last name	First name	Affiliation		
1.	Gopishetty	Srinivas	Manger-PP	23/05/2022	1) Project location 2) Commissioning of Project 3) Metering System 4) PPA 5) Calibration 6) Emission reduction calculations including project emissions
2	-	Sachin Avasthi	Project Engineer-PP	23/05/2022	
3	Ramisetti	Laxmi Narayana	Project Engineer-PP	23/05/2022	
4	Bolledhu	Narendra	Sr. Engineer-ZESPL	23/05/2022	
5	Tiruvuri	Sai Krishna	Engineer—ZESPL	23/05/2022	

**Sampling approach** N/A. The monitoring parameter is the electricity generated. The verification is done based on the Joint Metering Report /20/ that was made available for every month of the monitoring period.

### Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	No. of CL	No. of CAR	No. of FAR
<b>Green House Gas (GHG)</b>			
Identification and Eligibility of project type	Nil	Nil	Nil
General description of project activity	4	2	Nil
Application and selection of methodologies and standardized baselines	Nil	Nil	Nil
- Application of methodologies and standardized baselines	Nil	Nil	Nil
- Deviation from methodology and/or methodological tool	Nil	Nil	Nil
- Clarification on applicability of methodology, tool and/or standardized baseline	Nil	Nil	Nil
- Project boundary, sources and GHGs	Nil	Nil	Nil
- Baseline scenario	Nil	Nil	Nil
- Estimation of emission reductions or net anthropogenic removals	Nil	1	Nil
- Monitoring Report	1	1	Nil
Start date, crediting period and duration	2	Nil	Nil
Environmental impacts	Nil	Nil	Nil
Project Owner- Identification and communication	1	Nil	Nil
Others - Monitoring report version & date	1	Nil	Nil
<b>Total</b>	9	4	Nil

## Project Verification findings

### Identification and eligibility of project type



<b>Means of Project Verification</b>	<p>The project activity is registered under UCR. The project identification number is 134 as could be confirmed from the UCR website <a href="https://www.ucarbonregistry.io/Registry/Details?id=%2FL7NX7iu6xsha5nuCH9%2FOQ%3D%3D">https://www.ucarbonregistry.io/Registry/Details?id=%2FL7NX7iu6xsha5nuCH9%2FOQ%3D%3D</a></p> <p>The project activity is Hydro Power Electricity generation project having a total capacity of 24.6MW capacity with three Francis turbine of 8.2MW capacity each as could be verified from the implementation agreement /17/.</p> <p>The project activity was commissioned on 14/02/2021 as could be evidenced from the commissioning certificate /25/</p> <p>The project capacity is 24.6 MW and hence falls in the Large scale category of project activities as per CDM. The project activity fall under SECTORAL SCOPE - 01 Energy industries (Renewable/Non-Renewable Sources) and has adopted ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources” methodology of CDM/11/ <a href="https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG">https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG</a></p>
<b>Findings</b>	<p>The project activity is described in the PCN version 02 /6/ dated 10/07/2022 and is accepted by UCR</p>
<b>Conclusion</b>	<p>The project proponent has used the UCR approved template and meets the requirement of UCR standard /2/, UCR Program Manual /4/ &amp; UCR Verification standard /2/.</p> <p>The project activity fall under SECTORAL SCOPE - 01 Energy industries (Renewable/Non-Renewable Sources) which is in the list of approved scopes as per UCR standard.</p> <p>The project activity does not fall under the ineligible methodologies given under Table 1 of UCR Standard.</p> <p>The project activity is commissioned after 1 Jan 2002 and so meets the requirement of Project Start Date as per UCR Standard.</p> <p>The verification period is from 15/02/2021 to 31/12/2021 and so meets the requirement of vintage as per UCR Standard.</p> <p>The project activity is meeting the requirements of UCR verification standard, UCR standard and complies with all requirements of UCR program,</p>

### General description of project activity

<b>Means of Project Verification</b>	PCN,MR,DPR,PPA, Implementation agreement, IREDA sanction
<b>Findings</b>	<p>This project activity involves generation of electricity from the installation and operation of new run of the river hydro power project and exporting the energy to the grid. The projects activity consists of three turbines of 8.2 MW capacity each totalling to 24.60 MW located at Kafnu Village,Kinnaur district in the state of Himachal Pradesh in India.</p>
<b>Conclusion</b>	<p>The documents perused confirm that the project is as described in the PCN /6/ and MR /7/</p>

### Application and selection of methodologies and standardized baselines

#### (.a.i) Application of methodology and standardized baselines

<b>Means of Project Verification</b>	The project activity fall under SECTORAL SCOPE - 01 Energy industries (Renewable/Non-Renewable Sources) and has adopted ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources” <a href="https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG">https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG</a>
<b>Findings</b>	The appropriate approved methodology of CDM /15/ has been applied
<b>Conclusion</b>	The applied methodology meets the requirements of UCR. The latest version on the methodology ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources” /11/is applied and is valid.

**(.a.ii) Clarification on applicability of methodology, tool and/or standardized baseline**

<b>Means of Project Verification</b>	The applicability of the chosen large scale methodology ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources”, UCR Program standard and UCR verification standard for the project activity was verified.
<b>Findings</b>	The project activity complies with all the applicability conditions of the adopted methodology ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources”/11/. The project activity has adopted the emission factor of 0.9 tCO <sub>2</sub> /MWh recommended by UCR for 2014-2020 for this monitoring period 15/02/2021 to 31/12/2021.
<b>Conclusion</b>	The monitoring period of the project activity is from 15/02/2021 to 31/12/2021.The UCR recommended emission factor does not cover the monitoring period. The latest CEA emission factor /27 for the is upto 2021 is also 0.9 tCO <sub>2</sub> /MWh. So applying the UCR recommended emission factor throughout the monitoring period is considered as appropriate. The project activity complies with all the applicability conditions.

**(.a.iii) Project boundary, sources and GHGs**

<b>Means of Project Verification</b>	PCN,MR,PPA
<b>Findings</b>	The project boundary is clearly defined in the PCN and MR
<b>Conclusion</b>	The project boundary is clearly delineated in the PCN and meets the requirements of adopted methodology of ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources” and Project Eligibility Criteria and Guidance, UCR standard /2/

**(.a.iv) Baseline scenario**

<b>Means of Project Verification</b>	PCN, MR, General Project Eligibility Criteria and Guidance, UCR standard, adopted methodology of CDM ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources”, CEA data base to know the percentage of thermal power supplied to Indian Grid
<b>Findings</b>	The identified baseline scenario is verified to be correct
<b>Conclusion</b>	In the absence of the project activity, the equivalent amount of electricity would have been generated from the regional grid (which is connected to the unified Indian Grid system), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants. Hence, baseline scenario of the project activity is the grid-based electricity system, The identified baseline scenario meets the requirements of General

	Project Eligibility Criteria and Guidance, UCR standard /2/ and UCR verification standard and the adopted methodology ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources” /11/.
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**(.a.v) Estimation of emission reductions or net anthropogenic removal**

<b>Means of Project Verification</b>	JMR,UCR standard, CEA CO <sub>2</sub> data base and excel calculation sheet
<b>Findings</b>	Furnished information is verified to be correct
<b>Conclusion</b>	The net generation of electricity of the bundle project activity for the monitoring period matches with that in the JMR. The emission factor adopted is appropriate. The project emission during the monitoring period 15/02/2021 to 31/12/2021 is 2 tCO <sub>2eq</sub> .The project emission reduction have been verified and is computed in a conservative manner. The net emission reduction for the monitoring period 15/02/2021 to 31/12/2021is 95,956 tCO <sub>2eq</sub>

**(.a.vi) Monitoring Report**

<b>Means of Project Verification</b>	The JMR, calibration reports, MR & PCN
<b>Findings</b>	Furnished information is verified to be correct
<b>Conclusion</b>	<p>The parameters grid emission factor is fixed ex ante and the net electricity exported to the grid are monitored as required by the adopted methodology of CDM ACM0002 Version 20.0 “Grid-connected electricity generation from renewable sources” The grid emission factor adopted is as per UCR standard for the period 2014-2020 is 0.9 t CO<sub>2</sub>/MWh. The emission factor as per CEA data for 2020-21 /27/ is also 0.9 t CO<sub>2</sub>/MWh.</p> <p>The project is equipped with diesel generator of 62.5 kVA to meet emergency requirements of electricity to Power House,the emissions from the usage of fossil fuel (Diesel) in the Diesel Generator is accounted as project emissions. The purchase quantity of diesel is used which is conservative in the computation of project emission. The mission factor of 74000 kg CO<sub>2</sub>/TJ considered is as per IPCC.</p> <p>The density considered is as per the IS 1460:2017 which specification must be legally complied by all suppliers in India. So the density of 840kg/m<sup>3</sup> and NCV of diesel considered is 43.3 TJ/Gg as per IPCC 2006 and calculated based on the following equation.</p> $PE_{diesel,y} = F_{d,y} * Density * NCV_i * COEF_{CO_2} * OXID / 10^6$ <p>The monitoring period considered is 15/02/2021 to 31/12/2021 and the emission factor adopted for the emission reduction calculations is appropriate.</p> <p>The calculation of CoU generated for the monitoring period is verified to be correct and has been done adopting a conservative approach.</p> <p>The monitoring report adopts the latest template of UCR and meets the requirements of UCR verification standard /2/.</p>

**Start date, crediting period and duration**

<b>Means of Project Verification</b>	PCN, MR, Commissioning certificates, JMR
<b>Findings</b>	The furnished information is verified and it is found to be correct.

<b>Conclusion</b>	The monitoring period is from 15/02/2021 to 31/12/2021. The start date and the monitoring period are reported correctly and meet the requirements of the UCR general standard and verification standard.
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### Positive Environmental impacts

<b>Means of Project Verification</b>	PCN and interview
<b>Findings</b>	Nil. Furnished information is verified and found to be correct
<b>Conclusion</b>	The project activity does not adversely affect the environment and meets the requirements of UCR project and verification standards .

### Project Owner- Identification and communication

<b>Means of Project Verification</b>	The PCN, PPA with HPSEBL,DPR acceptance letter, Implementation agreement, IREDA loan sanction letter and Commissioning Certificates
<b>Findings</b>	Nil. The furnished information is verified and found to be correct
<b>Conclusion</b>	The project owner is Panchhor Hydro Power Private Limited as verified from the PPA /15/, Commissioning communication/25/ and approval given to the project /17/.

### Positive Social Impact

<b>Means of Project Verification</b>	Project activity has provided temporary employment to the local population during the construction phase of the project activity. Also few personnel have been employed permanently since commissioning of the project activity. The project is located in one of the backward areas and so the project activity has helped in its development. The electricity generated from the project will help mitigate the power crisis in the region. Project activity has created positive social impact in the region
<b>Findings</b>	Nil
<b>Conclusion</b>	Project has an overall positive social impact

### Sustainable development aspects (if any)-N/A

<b>Means of Project Verification</b>	N/A
<b>Findings</b>	
<b>Conclusion</b>	

## Internal quality control

The following ensure quality control of the verification

- It is ensured that there is no conflict of interest as the verifier has no other engagement related to the project activity either with the aggregator or with the project owner directly or otherwise.
- Verification activity is carried out by personnel with experience in the activity.

## Project Verification opinion

The verification of the project activity titled "15/02/2021 to 31/12/2021" located in Village Kafnu, District Kinnaur, State of Himachal Pradesh in India is carried out based on the UCR Protocol for the monitoring period 15/02/2021 to 31/12/2021. The baseline of the project activity is with reference to UCR Protocol Standard Baseline adopted by the CDM Large Scale Methodology : ACM0002 Version 20.0 "Grid-connected electricity generation from renewable sources"

The verification is based on the Project concept note version 2 dated 10/07/2022 and Monitoring report version 2 dated 12/07/2022.

In my opinion, the emission reduction for the monitoring period is fairly stated and the emission reductions are calculated correctly as per the adopted methodology and UCR standard version 3.

I am able to certify the emission reduction from the project activity' for the monitoring period 15/02/2021 to 31/12/2021 is 95,956 tCO<sub>2eq</sub>

## Abbreviations

Abbreviations	Full texts
CAR	Corrective Action Report
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CL	Clarification Request
CoU	Carbon offset Units
DPR	Detailed Project Report
ER	Emission Reductions
FAR	Forward Action Request
GHG	Green House Gases
HPSEB	Himachal Pradesh State Electricity Board
JMR	Joint Meter Reading
kWh	Kilo Watt Hour
MWh	Mega Watt Hour
MR	Monitoring Report
N/A	Not Applicable
PA	Project Aggregator
PCN	Project Concept Note
PP	Project Proponent
PPA	Power Purchase Agreement
SDG	Sustainable Development Goal
tCO <sub>2</sub> eq	Tonne of Carbon dioxide Equivalent
UCR	Universal Carbon Registry
VR	Verification Report
VS	Verification Statement

## Competence of team members and technical reviewers

>>S.Ranganathan, holds a Bachelor's Degree in Chemical Engineering and has done diploma course in Management and completed the graduate ship course in Industrial Engineering and has an overall working experience of around thirty eight years. He has around twenty four years experience in Chemical process industry (fertilizer & petrochemical manufacturing) covering production, technical services including energy audits and efficiency studies, waste heat recovery, efficiency studies of boilers, power plants, safety audits and pollution control activities including waste water treatment, project management, corporate planning, sales, logistics in fertilizer & petrochemical industry. With respect to the thermal power plant the job assignment included the monitoring of flue gas exit temperatures, excess air used efficiency of fuel additives, condition of boiler refractory, insulation of steam lines etc. The experience also includes 5 years in process design & engineering for chemical process industry. He is qualified validator, verifier and Technical Reviewer for GHG projects (CDM, Gold Standard, VCS, UCR). He has completed the ISO lead auditor course on Quality Management System, Environmental Management System, Energy Management System, Occupational Health Safety Management System. His qualification, industrial experience and experience in CDM demonstrate his sufficient sectoral competence in areas of (a) 1.1 Thermal energy generation from fossil fuels and Biomass including thermal electricity from solar (b) 1.2 Energy generation from renewable energy sources (c) 2.2 Heat distribution (d) 5.1/11.1/12.1 Chemical Processes Industries and (e) 13.1 Waste handling and disposal.

He has done validation/verification and Technical review of over two hundred projects

## Document reviewed or referenced

No	Author	Title	Reference	Provider
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			s to the document	
1	UCR	UCR Program Verification Guidance Document Ver 1.0 dated 08/2021	Verifier	Verifier
2	UCR	General Project Eligibility Criteria and Guidance UCR standard updated January 2022	Verifier	Verifier
3	UCR	Project Verification Report Form (VR) 2021	Verifier	Verifier
4	UCR	Universal Carbon Registry Program Manual (Ver 2.0)	Verifier	Verifier
5	UCR	Universal Carbon Registry Terms and Conditions Aug 2021	Verifier	Verifier
6	Aggregator	Project Concept Note Ver 2.0 dated 10/07/2022	Aggregator	Aggregator
7	Aggregator	Monitoring Report ver 2.0 dated 12/07/2022	Aggregator	Aggregator
8	Aggregator	Excel: Panchor-Generation Details and ER Calculations	Aggregator	Aggregator
9	Aggregator	Communication Agreement between Zenith Energy Private Limited and Panchhor Hydro Power Private Limited dated 07/02/2022	Aggregator	
10	Project Proponent	Double Accounting Assurance dated 16/06/2022	Aggregator	
11	UNFCCC	ACM 0002-Grid-connected electricity generation from renewable sources Version 20.0	Verifier	Verifier
12	UNFCCC	Tool 07 Tool to calculate the emission factor for an electricity system version 07.0 <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf</a>	Verifier	Verifier
13	UNFCCC	Tool 03 Tool to calculate project or leakage CO2 emissions from fossil fuel combustion version 03.0 <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v3.pdf">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v3.pdf</a>	Verifier	
14	Nanal Energy	DPR by Nanal Energy (P) Ltd. Shimla Jan 2018	Project Proponent	Project Proponent
15	HPSEBL	PPA with HPSEBL dated 12/02/2021	Project Proponent	Project Proponent
16	Project Proponent	HP Government Forest Department-Land allocation letter.	Project Proponent	Project Proponent
17	Project Proponent	Implementation agreement with Government of Himachal Pradesh dated 11/12/2020	Project Proponent	Project Proponent
18	Project Proponent	Panchor Hydro Power Private Limited-Memorandum of Association	Project Proponent	Project Proponent
19	IREDA	IREDA-Loan Sanction letter dated 25/07/2012	Project Proponent	Project Proponent
20	HPSEBL	JMR for the monitoring period	Project Proponent	Aggregator
21	PSPCL	Calibration certificate of meters issued by ME-Laboratory-PSPCL Jalandhar Rep ME/PSPCL/JAL/2021/T-04 dated 2/7/21 for meters 00210000059 & 00210000060 Rep ME/PSPCL/JAL/2021/T-04 dated 29/08/19 for meters 0019002786 & 0019002801	Project Proponent	Aggregator
22	Project Proponent	Local clearance for the project activity	Project Proponent	Aggregator
23	Project Proponent	Diesel consumption/purchase for the monitoring period-log book,purchase receipts	Project Proponent	Aggregator
24	Project Proponent	Photos of meter, equipment name plate and project site	Project Proponent	Aggregator
25	HPSEBL	Commencement of Commercial operation letter dated 17/02/2021	Project Proponent	Project Proponent
26	IPCC	Emission factor calorific value of diesel <a href="https://www.ipcc-">https://www.ipcc-</a>	Verifier	



		nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf		
27	CEA	2020-21 CEA Database for grid emission factor	Verifier	
28	Aggregator	Photos of meters,name plate details of equipment's and project site	Project Proponent	
29	HPSPCB	Consent to establish dated 12/07/2012	Project Proponent	
30	Project Proponent	Annexure -1 Name Plate Details of equipment	Project Proponent	
31	UCR	Additional Verification Guidance for Large Hydel Projects Ver 1.0	UCR	
32	Gram Panchayat	MOU with Gram Panchayat	Project Proponent	
33	Project Proponent	Salary statement-Major local employess	Project Proponent	
34	Project Proponent	Photograph of construction of 5km link road from Yanga Pull to Village Homte	Project Proponent	
35	Project Proponent	Donation to Devata Mandir Committee of Gram Panchaayat Kafnoo	Project Proponent	
36	Project Proponent	Local Area Development Fund contribution	Project Proponent	
37	Project Proponent	RCC wall construction to protect bus stand	Project Proponent	
38	Project Proponent	Sponsorship of domicile student for technical education.	Project Proponent	
39	Project Proponent	Brief on social activities carried out	Project Proponent	
40	Project Proponent	Proof of payment made by PP to the Gram Panchayat	Project Proponent	

### Clarification request, corrective action request and forward action request

Table 1. CLs from this Project Verification

<b>CL ID</b>	01	<b>Section no.</b>	A1 of the PCN	<b>Date:</b> 25/04/2022
<b>Description of CL</b>				
<i>In the PCN dated 26/03/2022 under Section A.1. the details of evacuation of electricity generated to the grid is not detailed.</i>				
<b>Project Owner's response</b>				<b>Date:</b> 10/07/2022
<i>Evacuation arrangements of the project activity has been added in section A1 of the PCN</i>				
<b>Documentation provided by Project Owner</b>				
<i>PCN version 02 dated 10/07/2022</i>				
<b>UCR Project Verifier assessment</b>				<b>Date:</b> 15/07/2022
<i>In the PCN version 2.0 dated 10/07/2022,under section A1 Purpose of the project activity, the evacuation details of electricity generated is included. CL-1 is closed.</i>				
<b>CL ID</b>	02	<b>Section no.</b>	A4 of PCN	<b>Date:</b> 25/04/2022
<b>Description of CL</b>				
<i>In the PCN dated 26/03/2022 under Section A.4. the details of the number of turbines and their installation details are not furnished.</i>				
<b>Project Owner's response</b>				<b>Date:</b> 10/07/2022
<i>There are three number of turbines available at site each of capacity of 8.2 MW and speed is 750 rpm. Details of the same have been incorporated in section A4 of the PCN.</i>				
<b>Documentation provided by Project Owner</b>				
<i>PCN version 02 dated 10/07/2022</i>				



<b>UCR Project Verifier assessment</b>			<b>Date:</b> 15/07/2022
<i>In the PCN version 2.0 dated 10/07/2022, under section A4 Technologies the details of the turbine is included. CL-2 is closed.</i>			
<b>CL ID</b>	03	<b>Section no.</b>	<b>Date:</b> 25/04/2022
<b>Description of CL</b>			
<i>The Project Proponent to clarify if any, Diesel Generation set is installed at project site to meet emergency power requirements.</i>			
<b>Project Owner's response</b>			<b>Date:</b> 10/07/2022
<i>The project has one Diesel generator of 62.5 KVA, installed at the site for emergency power requirements Details of the same has been incorporated in section A4 of the PCN</i>			
<b>Documentation provided by Project Owner</b>			
<i>PCN version 02 dated 10/07/2022</i>			
<b>UCR Project Verifier assessment</b>			<b>Date:</b> 15/07/2022
<i>In the PCN version 2.0 dated 10/07/2022, under section A4 Technologies the details of the turbine is included. CL-3 is closed.</i>			
<b>CL ID</b>	04	<b>Section no.</b>	<b>Date:</b> 25/04/2022
<b>Description of CL</b>			
<i>Under section B7 of the PCN, it is not mentioned ,if there is any change to the crediting period.</i>			
<b>Project Owner's response</b>			<b>Date:</b> 10/07/2022
<i>No Change in crediting period. The same has been updated in section B7 of PCN</i>			
<b>Documentation provided by Project Owner</b>			
<i>PCN version 02 dated 10/07/2022</i>			
<b>UCR Project Verifier assessment</b>			<b>Date:</b> 15/07/2022
<i>In the PCN version 2.0 dated 10/07/2022, section B7 has been revised to mention that there is no change to the crediting period. CL-4 is closed.</i>			
<b>CL ID</b>	05	<b>Section no.</b>	<b>Date:</b> 25/04/2022
<b>Description of CL</b>			
<i>In the MR version 01 dated 28/02/22 under section A, the details of evacuation of the electricity generated is not described.</i>			
<b>Project Owner's response</b>			<b>Date:</b> 10/07/2022
<i>Evacuation arrangements of the project activity has been added in the section A of the MR</i>			
<b>Documentation provided by Project Owner</b>			
<i>MR version 02 dated 10/07/2022</i>			
<b>UCR Project Verifier assessment</b>			<b>Date:</b> 15/07/2022
<i>In the revised MR version 02 dated 10/07/2022, under section A, the details of evacuation of the electricity generated have been included. CL-5 is closed</i>			
<b>CL ID</b>	06	<b>Section no.</b>	<b>Date:</b> 25/04/2022
<b>Description of CL</b>			
<i>Please clarify if all the generators, were commissioned on the same date or different dates. The supporting documents for the same to be made available.</i>			
<b>Project Owner's response</b>			<b>Date:</b> 26/05/2022
<i>All the three generators were commissioned on the same date, I.e., 15/02/2021. COD certificate is enclosed separately.</i>			
<b>Documentation provided by Project Owner</b>			
<i>HPSEB letter dated 17/02/21</i>			
<b>UCR Project Verifier assessment</b>			<b>Date:</b> 05/06/2022

<i>From the HPSEB letter dated 17/02/21 it is seen that all the three generators were commissioned on 15/02/2021 CL-6 is closed</i>				
<b>CL ID</b>	07	<b>Section no.</b>	A.6. of MR	<b>Date:</b> 25/04/2022
<b>Description of CL</b>				
<i>Under A.6. section of the MR, the full address is not available.</i>				
<b>Project Owner's response</b>				<b>Date:</b> 12/07/2022
<i>Contact Person full address is added in section A6 of the MR</i>				
<b>Documentation provided by Project Owner</b>				
<i>MR version 02 dated 12/07/2022</i>				
<b>UCR Project Verifier assessment</b>				<b>Date:</b> 15/07/2022
<i>In the revised MR version 02 dated 12/07/2022, under section A.6, the contact details of the Project Proponent and Aggregator are included. CL-7 is closed</i>				
<b>CL ID</b>	08	<b>Section no.</b>	C.9. of MR	<b>Date:</b> 25/04/2022
<b>Description of CL</b>				
<i>Under section C.9. of the MR comparison of the net emission reduction achieved during the monitoring period with that estimated in the PCN for the corresponding period is not detailed.</i>				
<b>Project Owner's response</b>				<b>Date:</b> 12/07/2022
<i>The estimated emission reductions for the monitoring period (15-02-2021 to 31-12-2021) is 98,633 tCO<sub>2e</sub>. The actual emission reduction achieved is 95,956 tCO<sub>2eq</sub></i>				
<b>Documentation provided by Project Owner</b>				
<i>MR version 02 dated 12/07/2022</i>				
<b>UCR Project Verifier assessment</b>				<b>Date:</b> 15/07/2022
<i>In the revised MR version 02 dated 24/05/2022, under section C.9, the comparison with the estimated emission reductions and actual achieved have been made. The achieved emission reduction is 95,211 tCO<sub>2e</sub> against the estimate of 98,633 tCO<sub>2e</sub>. CL-8 is closed.</i>				
<b>CL ID</b>	09	<b>Section no.</b>		<b>Date:</b> 25/04/2022
<b>Description of CL</b>				
<i>The details of the meters including calibration are not available for the monitored parameter EGPJ,y. The supporting documents to verify the net electricity exported is to be provided for the monitoring period</i>				
<b>Project Owner's response</b>				<b>Date:</b> 26/05/2022
<i>JMRs are being provide as supporting document for the monitoring parameter EGPJ,y, long with calibration reports of the meters</i>				
<b>Documentation provided by Project Owner</b>				
<i>JMR for the monitoring period. Calibration certificate of meters</i>				
<b>UCR Project Verifier assessment</b>				<b>Date:</b> 05/06/2022
<i>The JMR &amp; Calibration certificate of the meters have been provided. The net export of electricity considered for emission reduction calculation are based on the JMR.</i>				

**Table 2. CARs from this Project Verification**

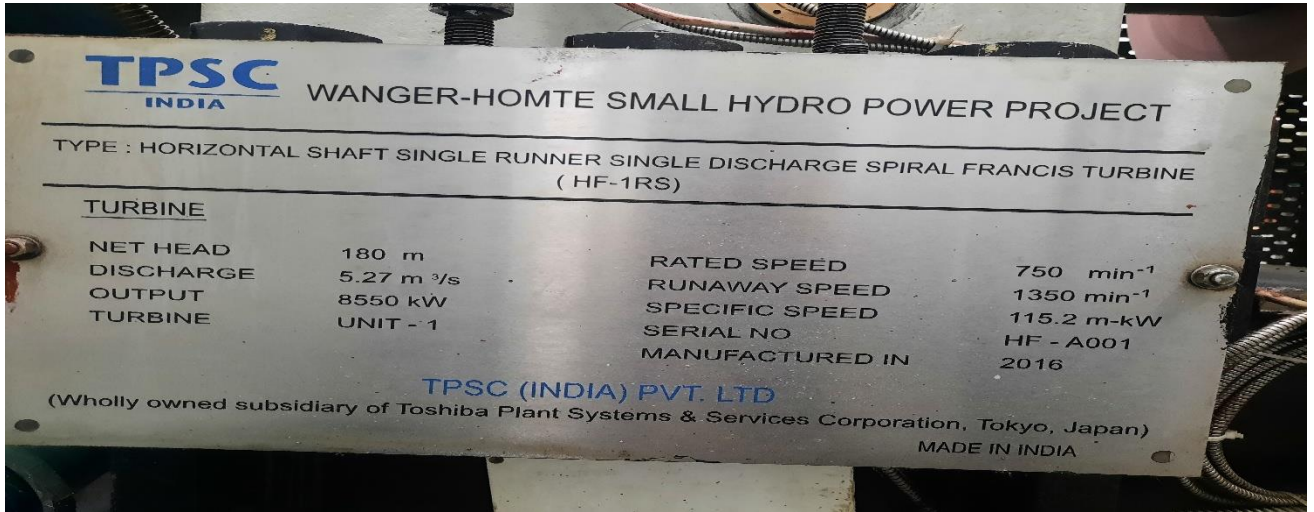
<b>CAR ID</b>	01	<b>Section no.</b>		<b>Date:</b> 25/04/2022
<b>Description of CAR</b>				
<i>Under section B.8 Monitoring plan for the parameter EGpjy it is not clear in the PCN whether the same is being measured or calculated. If measured, the details of the meter, its accuracy class, calibration frequency along with calibration details are not available</i>				
<b>Project Owner's response</b>				<b>Date:</b> 10/07/2022
<i>EGpjy is measured a value through an energy meter. Details of the same are incorporated in PCN. Calibration reports of the same are also being furnished separately.</i>				
<b>Documentation provided by Project Owner</b>				
<i>PCN version 02 dated 10/07/2022</i>				

<b>UCR Project Verifier assessment</b>			<b>Date:</b> 15/07/2022
<i>In the revised PCN version 2.0 dated 10/07/2022, under B.8 Parameter EGPJ, the meter details are included.</i>			
<i>CAR-1 is closed</i>			
<b>CAR ID</b>	02	<b>Section no.</b>	<b>Date:</b> 25/04/2022
<b>Description of CAR</b>			
<i>It is seen that the monitoring report is version dated 28/02/22 while the PCN is dated 26/03/22. The monitoring report is not seen to be based on the latest version of PCN.</i>			
<b>Project Owner's response</b>			<b>Date:</b> 12/07/2022
<i>The version no. and corresponding dates have been updated in PCN as well as Monitoring report</i>			
<b>Documentation provided by Project Owner</b>			
<i>PCN version 02 dated 10/07/2022 and MR Version 02 dated 12/07/2022</i>			
<b>UCR Project Verifier assessment</b>			<b>Date:</b> 15/07/2022
<i>The current version of PCN is version 2.0 dated 10/07/2022 and that of the monitoring report is version 02 dated 12/07/2022.</i>			
<i>CAR-2 is closed</i>			
<b>CAR ID</b>	03	<b>Section no.</b>	<b>Date:</b> 25/04/2022
<b>Description of CAR</b>			
<i>The estimated emission reduction for the monitoring period as per PCN and that mentioned in the monitoring report are different.</i>			
<b>Project Owner's response</b>			<b>Date:</b> 26/05/2022
<i>The estimated Emission reductions as per PCN is 1,12,856 tCO<sub>2</sub>e per year, which for the monitoring period corresponds to 98,633 tCO<sub>2</sub>e (CoU) .</i>			
<b>Documentation provided by Project Owner</b>			
<i>MR version 02 dated 12/07/2022</i>			
<b>UCR Project Verifier assessment</b>			<b>Date:</b> DD/MM/YYYY
<i>In the revised MR version 02 dated 12/07/2022, the estimated emission reduction has been revised based on the estimate given in the PCN Version 02 dated 10/07/2022.</i>			
<i>CAR-3 is closed.</i>			
<b>CAR ID</b>	04	<b>Section no.</b>	<b>Date:</b> 25/04/2022
<b>Description of CAR</b>			
<i>The social benefits from the project activity is not detailed in section B.2. of MR. The economic benefits may be listed.</i>			
<b>Project Owner's response</b>			<b>Date:</b> 12/07/2022
<i>Social benefits from the project have been incorporated in the section B2 of MR</i>			
<b>Documentation provided by Project Owner</b>			
<i>MR version 02 dated 12/07/2022</i>			
<b>UCR Project Verifier assessment</b>			<b>Date:</b> 15/07/2022
<i>In the revised MR version 02 dated 12/07/2022, under section B2, the details have been included.</i>			
<i>CAR-4 is closed</i>			

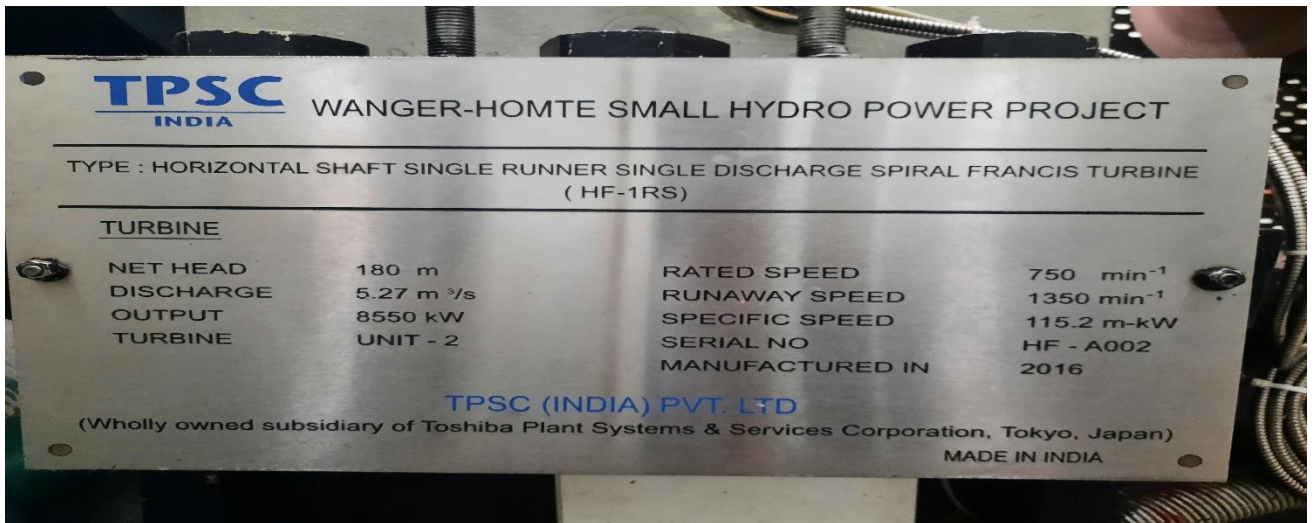
Table 3. FARs from this Project Verification

<b>FAR ID</b>	Xx	<b>Section no.</b>	<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>			
<i>No FAR raised in the verification</i>			
<b>Project Owner's response</b>			<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by Project Owner</b>			
<b>UCR Project Verifier assessment</b>			
<b>UCR Project Verifier assessment</b>			<b>Date:</b> DD/MM/YYYY

Annexure-1

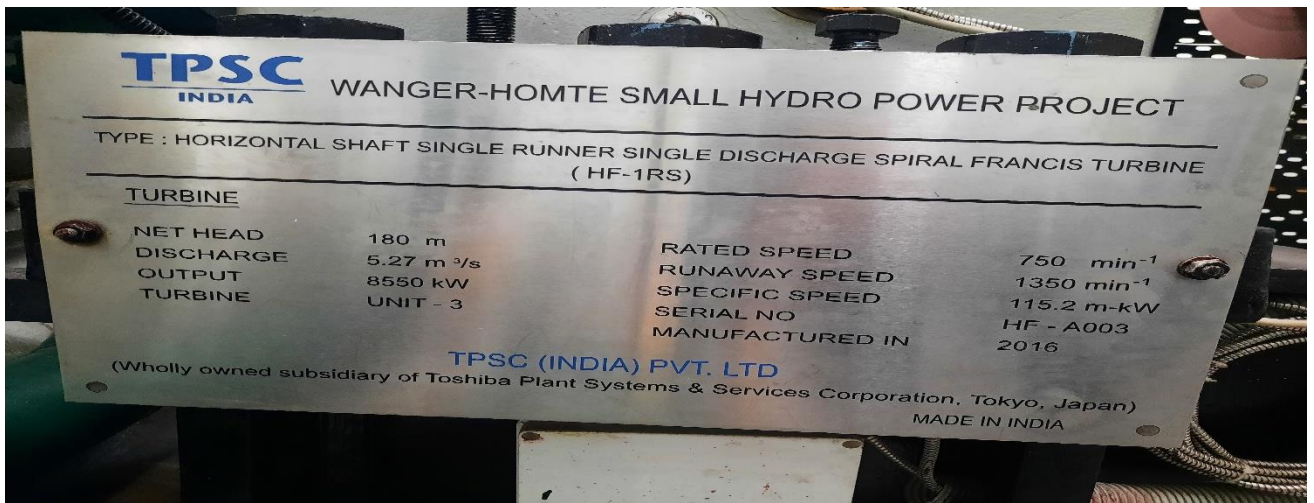


Unit-1 Turbine

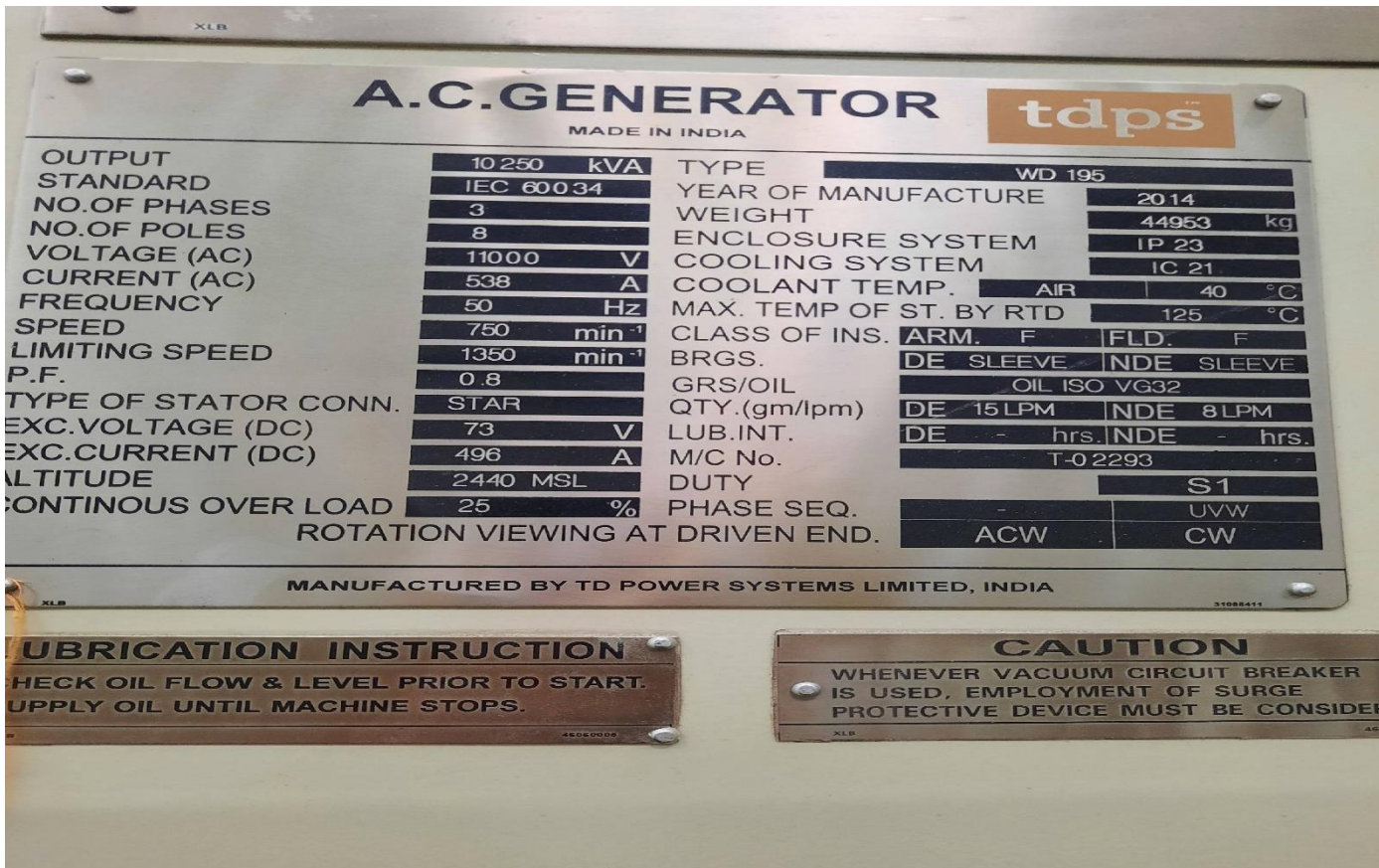


Unit-2 Turbine





Unit-3 Turbine



Unit-1 Generator

# A.C.GENERATOR



MADE IN INDIA

OUTPUT	10250 kVA	TYPE	WD 195
STANDARD	IEC 60034	YEAR OF MANUFACTURE	2014
NO.OF PHASES	3	WEIGHT	44953 kg
NO.OF POLES	8	ENCLOSURE SYSTEM	IP 23
VOLTAGE (AC)	11000 V	COOLING SYSTEM	IC 21
CURRENT (AC)	538 A	COOLANT TEMP.	AIR 40 °C
FREQUENCY	50 Hz	MAX. TEMP OF ST. BY RTD	125 °C
SPEED	750 min <sup>-1</sup>	CLASS OF INS.	ARM. F FLD. F
LIMITING SPEED	1350 min <sup>-1</sup>	BRGS.	DE SLEEVE NDE SLEEVE
P.F.	0.8	GRS/OIL	OIL ISO VG32
TYPE OF STATOR CONN.	STAR	QTY.(gm/lpm)	DE 15 LPM NDE 8 LPM
EXC.VOLTAGE (DC)	73 V	LUB.INT.	DE - hrs. NDE - hrs.
EXC.CURRENT (DC)	496 A	M/C No.	T-02294
ALTITUDE	2440 MSL	DUTY	S1
CONTINUOUS OVER LOAD	25 %	PHASE SEQ.	ACW UVW CW
ROTATION VIEWING AT DRIVEN END.			

MANUFACTURED BY TD POWER SYSTEMS LIMITED, INDIA

**LUBRICATION INSTRUCTION**  
 CHECK OIL LEVEL PRIOR TO START.  
 CONFIRM ROTATION OF OIL-RINGS AFTER START.  
 APPLY OIL UNTIL MACHINE STOPS.

**CAUTION**  
 WHENEVER VACUUM CIRCUIT BREAKER IS USED, EMPLOYMENT OF SURGE PROTECTIVE DEVICE MUST BE COMPLETED.

Unit-2 Generator



**A.C.GENERATOR** **tdps**  
MADE IN INDIA

OUTPUT	10250 kVA	TYPE	WD 195
STANDARD	IEC 60034	YEAR OF MANUFACTURE	2014
NO. OF PHASES	3	WEIGHT	44953 kg
NO. OF POLES	8	ENCLOSURE SYSTEM	IP 23
VOLTAGE (AC)	11000 V	COOLING SYSTEM	IC 21
CURRENT (AC)	538 A	COOLANT TEMP.	AIR 40 °C
FREQUENCY	50 Hz	MAX. TEMP OF ST. BY RTD	125 °C
NO. OF POLES	8	CLASS OF INS.	ARM. F FLD. F
NO. OF POLES	8	BRGS.	DE SLEEVE NDE SLEEVE
NO. OF POLES	8	GRS/OIL	OIL ISO VG32
NO. OF POLES	8	QTY.(gm/lpm)	DE 15LPM NDE 8LPM
NO. OF POLES	8	LUB.INT.	DE - hrs. NDE - hrs.
NO. OF POLES	8	M/C No.	T-0 2295
NO. OF POLES	8	DUTY	S1
NO. OF POLES	8	PHASE SEQ.	UVW
NO. OF POLES	8	ROTATION VIEWING AT DRIVEN END.	ACW CW

MANUFACTURED BY TD POWER SYSTEMS LIMITED, INDIA

**LUBRICATION INSTRUCTION**  
CHECK OIL LEVEL PRIOR TO START.  
CONFIRM ROTATION OF OIL-RINGS AFTER START.  
SUPPLY OIL UNTIL MACHINE STOPS.

**CAUTION**  
WHENEVER VACUUM CIRCUIT BREAKER  
IS USED, EMPLOYMENT OF SURGE  
PROTECTIVE DEVICE MUST BE CONSIDERED

Unit-3 Generator



**Parker Hannifin India Pvt. Ltd.**  
Plot EI-26, MIDC, TTC Ind. Area Mahape,  
Navi Mumbai - 400 709, India.  
Contact us at : [parker@vsnl.com](mailto:parker@vsnl.com)  
Tel.: 91-22-5613 7081 Fax : 91-22-2768 6618/6841

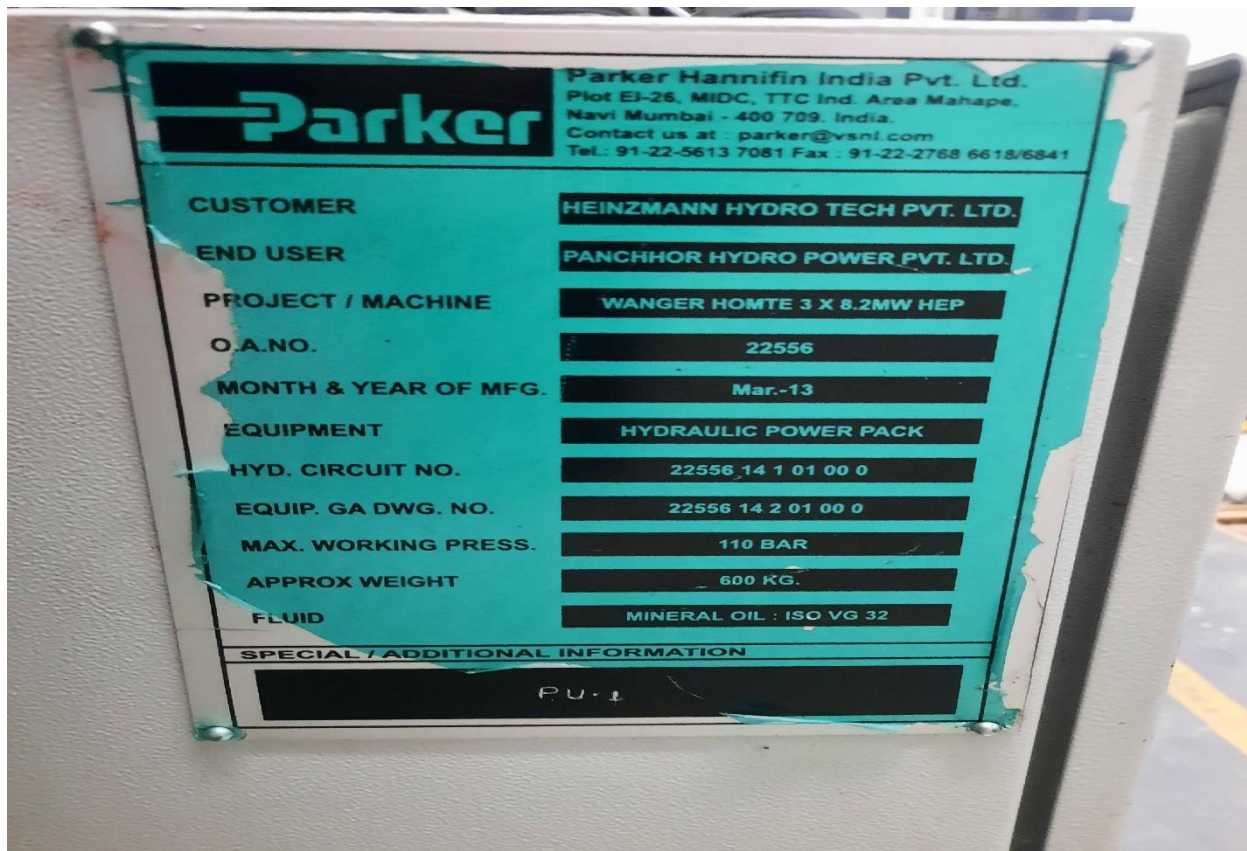
<b>CUSTOMER</b>	<b>HEINZMANN HYDRO TECH PVT. LTD.</b>
<b>END USER</b>	<b>PANCHHOR HYDRO POWER PVT.LTD.</b>
<b>PROJECT / MACHINE</b>	<b>WANGER HOMTE 3 X 8.2MW HEP</b>
<b>O.A.NO.</b>	<b>19984</b>
<b>MONTH &amp; YEAR OF MFG.</b>	<b>Mar.-13</b>
<b>EQUIPMENT</b>	<b>HTDRAULIC POWER PACK</b>
<b>HYD. CIRCUIT NO.</b>	<b>19984 12 1 01 00 0</b>
<b>EQUIP. GA DWG. NO.</b>	<b>19984 12 2 01 00 0</b>
<b>MAX. WORKING PRESS.</b>	<b>110 BAR</b>
<b>APPROX WEIGHT</b>	<b>600 KG.</b>
<b>FLUID</b>	<b>MINERAL OIL: ISO VG- 32</b>

**SPECIAL / ADDITIONAL INFORMATION**

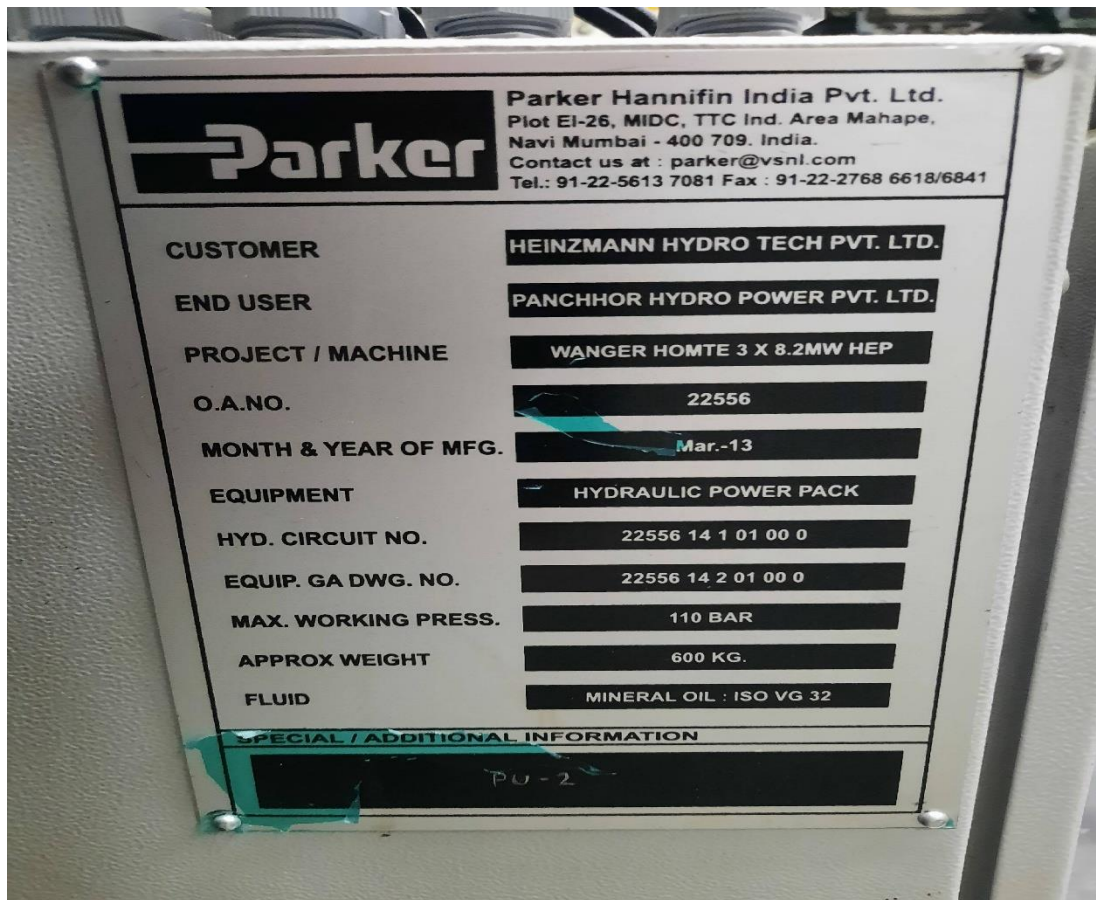
[Redacted area]

Unit-1 OPU





Unit-2 OPU



Unit-3 OPU

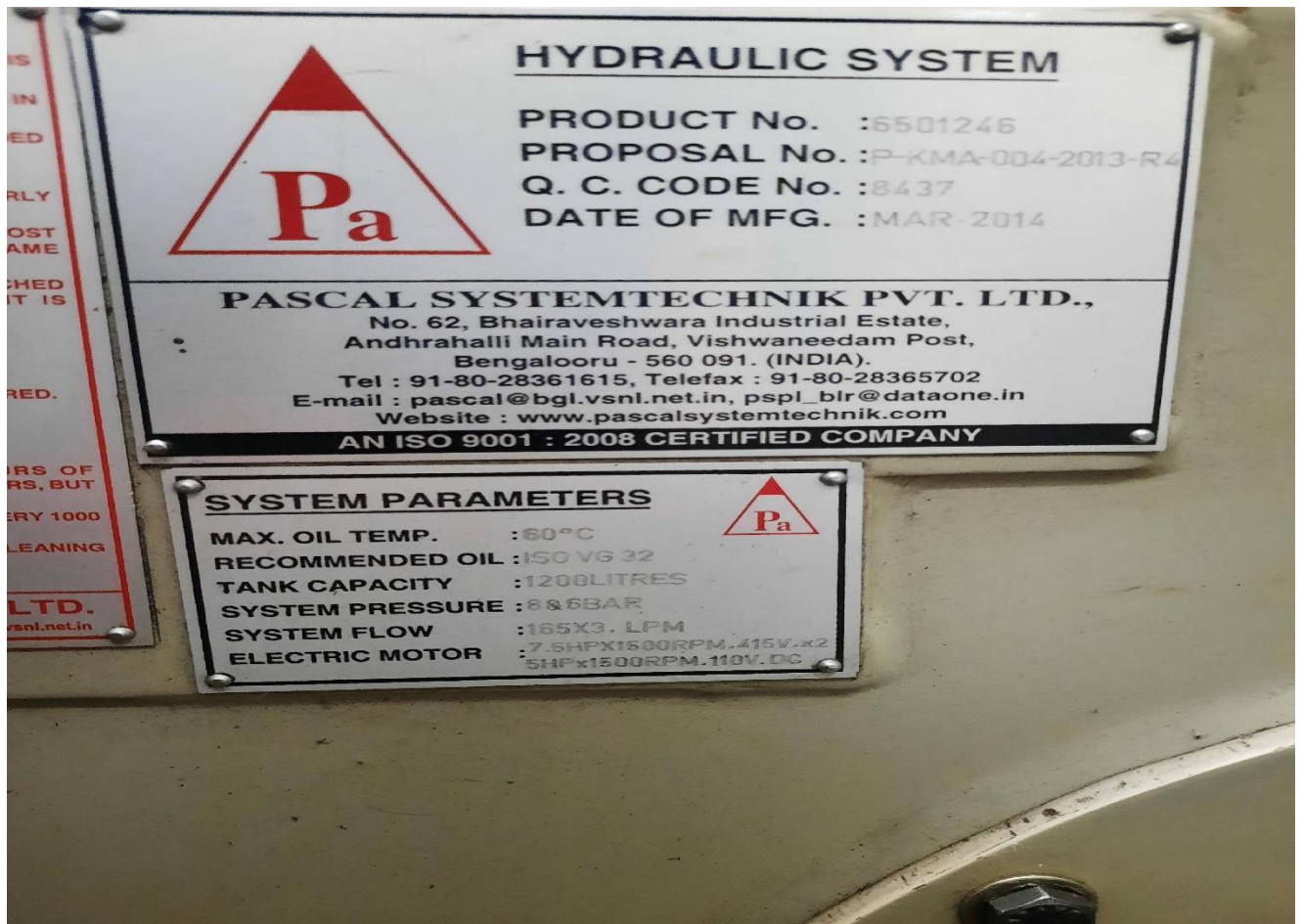


Unit-1 GLOP





Unit-2 GLOP



Unit-3 GLOP



**transformers & rectifiers (india) Ltd.**  
 VILLAGE: MORAIYA, TA: SANAND, DIST.: AHMEDABAD (Gujarat)

**COPPER WOUND TRANSFORMER**

COOLING	ONAN	REF. STANDARD	IS 2026
RATING	MVA 12.5	FREQUENCY	Hz 50
RATED VOLTAGE	HV. V 66000	PHASES.	3
	LV. V 11000	IMPEDANCE VOLTAGE. @ 12.5MVA	MAX. TAP % 5+7.5
FULL LOAD CURRENT	HV. A 109.35		NOR. TAP. % 10.0 / 5+7.5
	LV. A 656.08		MIN. TAP % 3-12
BASIC INSU. LEVEL IMP/P.F.	HV. kV 325 / 140	VECTOR GROUP REF.	YNd11
	LV. kV 75 / 28	CORE & COIL MASS	Kg 13600
	HVN. kV 170 / 70	TANK & FITTINGS MASS	Kg 8000
GTD. TEMP. RISE	OIL °C 47.13°	MASS OF OIL	Kg 6200
	WDG. °C 51.843°	TOTAL MASS	Kg 28000
MAKER'S SR.No.	PC 0300184	OIL QUANTITY	LTR. 7000
YEAR OF MANUFACTURE	2013	TRANSPORT WT. with OIL	22000
P.O. NO.	K-LOA-WH-12-002 DT 13.06.2012		

NOTE: \* MARKED VALUES ARE CONVERTED VALUES FOR ALTITUDE 2435 mtr. ABOVE MSL.

**VECTOR GROUP YNd11**

**LV.**

**HV.**

TAP POSN. NO.	OLTC CONNECTION IN EACH PHASE	H.V.		L.V.	
		VOLTAGE (V)	CURRENT (Amp.) at 12.5 MVA	VOLTAGE (V)	CURRENT (A)
1	2-19	72600	99.41	11000	656.08
2	2-18	71775	100.55		
3	2-17	70950	101.72		
4	2-16	70125	102.91		
5	2-15	69300	104.14		
6	2-14	68475	105.39		
7	2-13	67650	106.68		
8	2-12	66825	108.00		
9	2-11	66000	109.35		
10	2-10	65175	110.73		
11	2-9	64350	112.15		
12	2-8	63525	113.61		
13	2-7	62700	115.10		
14	2-6	61875	116.64		
15	2-5	61050	118.21		
16	2-4	60225	119.83		
17	2-3	59400	121.50		

CT	CORE	RATIO AMP.	ACC. CLASS.	WINDING (V)	VKR (V/R)	IN AT (VA)	MAX. SEC. RES. (OHM)	TERMINAL MARKING	QTY.
WFL CT	LV	1	850/2	5	15	-	-	2WB2, 2WB1	1
MCT HV	2	200/1	P8	-	400	30	3	UNDR/INDR	1
		200/1	P8	-	400	30	3	INDR/UNDR	1

Note: PRIMARY INJECTION LEAD PROVIDED (T1, T2) FOR C.T. TESTING.

**EPC CONTRACTOR : TPSC (INDIA) PVT LTD**  
**CUSTOMER : PANCHHOR HYDRO POWER PVT. LTD.**

Unit-1 Transformer

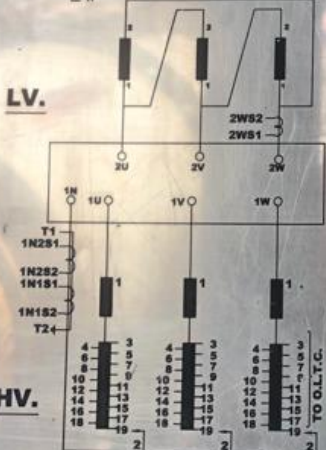
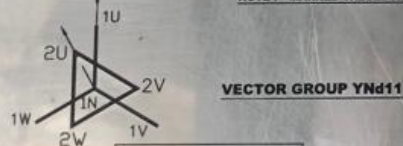
# transformers & rectifiers (india) Ltd.

VILLAGE:MORAIYA, TA:SANAND, DIST.:AHMEDABAD (Gujarat)

## COPPER WOUND TRANSFORMER

COOLING	ONAN	REF. STANDARD	IS 2026
RATING	MVA 12.5	FREQUENCY	Hz 50
RATED VOLTAGE	HV. V 66000	PHASES.	3
	LV. V 11000		
FULL LOAD CURRENT	HV. A 109.35	IMPEDANCE VOLTAGE @ 12.5MVA	MAX. TAP % 3.75
	LV. A 656.08		NOR. TAP. GTD. / TESTED % 10.0 / 3.45
BASIC INSU. LEVEL IMP/P.F.	HV. kV 325 / 140	VECTOR GROUP REF.	YNd11
	LV. kV 75 / 28		
	HVN. kV 170 / 70		
GTD. TEMP. RISE	OIL °C 47.13°	CORE & COIL MASS	Kg 13800
	WDG. °C 51.843°	TANK & FITTINGS MASS	Kg 8000
MAKER'S SR.No.	P00300183	MASS OF OIL	Kg 6200
YEAR OF MANUFACTURE	2013	TOTAL MASS	Kg 28000
P.O. NO.	K-LOA-WH-12-002 DT 13.06.2012	OIL QUANTITY	LTR. 7000
		TRANSPORT WT. with OIL	22000

NOTE : \* MARKED VALUES ARE CONVERTED VALUES FOR ALTITUDE 2435 mtr.ABOVE MSL



TAP POSN. NO.	OLTC CONNECTION IN EACH PHASE	H.V.		L.V.	
		VOLTAGE (V)	CURRENT (Amp.) at 12.5 MVA	VOLTAGE (V)	CURRENT (A)
1	2 - 19	72600	99.41		
2	2 - 18	71775	100.55		
3	2 - 17	70950	101.72		
4	2 - 16	70125	102.91		
5	2 - 15	69300	104.14		
6	2 - 14	68475	105.39		
7	2 - 13	67650	106.68		
8	2 - 12	66825	108.00		
9	2 - 11	66000	109.35		
10	2 - 10	65175	110.73	11000	656.08
11	2 - 9	64350	112.15		
12	2 - 8	63525	113.61		
13	2 - 7	62700	115.10		
14	2 - 6	61875	116.64		
15	2 - 5	61050	118.21		
16	2 - 4	60225	119.83		
17	2 - 3	59400	121.50		

CT	CORE	RATIO AMP.	ACC. CLASS	BURDEN (VA)	1%Kp ± (Volt)	In AT VK/2 (mA)	MAX REC. RES. (OHM)	TERMINAL MARKING	QTY.
WT1 CT LV	1	558/2	S	15	-	-	-	2WS1-2WS2	1
MCT HV	2	200/1	PS	-	400	30	2	1N181-1N182	1
		200/1	PS	-	400	30	2	1N231-1N232	

Note: PRIMARY INJECTION LEAD PROVIDED (T1 - T2) FOR CT TESTING.

EPC CONTRACTOR : TPSC (INDIA) PVT LTD  
 CUSTOMER : PANCHHOR HYDRO POWER PVT. LTD.

Unit-2 Transformer



**transformers & rectifiers (india) Ltd.**  
 VILLAGE:MORAIYA, TA:SANAND, DIST.:AHMEDABAD (Gujarat)

**COPPER WOUND TRANSFORMER**

COOLING	ONAN	REF. STANDARD	IS 2026
RATING	MVA 12.5	FREQUENCY	Hz 50
RATED VOLTAGE	HV. V 66000	PHASES.	3
	LV. V 11000		
FULL LOAD CURRENT	HV. A 109.35	IMPEDANCE VOLTAGE. @ 12.5MVA	MAX. TAP % 3.425
	LV. A 656.08		NOR. TAP. % 10.0 / 10.0
BASIC INSU. LEVEL IMP/P.F.	HV. KV 325 / 140		MIN. TAP % 3.425
	LV. KV 75 / 28	VECTOR GROUP REF.	YNd11
	HVN. KV 170 / 70	CORE & COIL MASS	Kg 13800
GTD. TEMP. RISE	OIL °C 47.13°	TANK & FITTINGS MASS	Kg 8000
	WDG. °C 51.843°	MASS OF OIL	Kg 6200
MAKER'S SR.No.	PC0399106	TOTAL MASS	Kg 28000
YEAR OF MANUFACTURE	2010	OIL QUANTITY	LTR 7000
P.O. NO.	K-LOA-WH-12-002 DT 13.06.2012	TRANSPORT WT. with OIL	22000

NOTE: \* MARKED VALUES ARE CONVERTED VALUES FOR ALTITUDE 2435 mtr.ABOVE MSL.

**VECTOR GROUP YNd11**

**LV.**

**HV.**

TAP POSN. NO.	OLTC CONNECTION IN EACH PHASE	H.V.		L.V.	
		VOLTAGE (V)	CURRENT (Amps) at 12.5 MVA	VOLTAGE (V)	CURRENT (A)
1	2-19	72600	99.41		
2	2-18	71775	100.55		
3	2-17	70950	101.72		
4	2-16	70125	102.91		
5	2-15	69300	104.14		
6	2-14	68475	105.39		
7	2-13	67650	106.68		
8	2-12	66825	108.00		
9	2-11	66000	109.35	11000	656.08
10	2-10	65175	110.73		
11	2-9	64350	112.15		
12	2-8	63525	113.61		
13	2-7	62700	115.10		
14	2-6	61875	116.64		
15	2-5	61050	118.21		
16	2-4	60225	119.83		
17	2-3	59400	121.50		

CT	CORE	RATIO AMP.	ACC. CLASS	BURDEN VA	V <sub>PK</sub> (VVR)	IN AT (mA)	MAX SEC. RES (OHMS)	TERMINAL MARKING	QTY.
WTI CT LV	1	636.2	3	15	-	-	-	2WS1-2WS2	1
NCT HV	2	200-1	FS	-	400	30	2	1N1S1-1N1S2	1
		200-1	FS	-	400	30	2	1N2S1-1N2S2	1

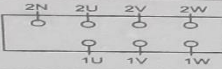
NOTE: PRIMARY INJECTION LEAD PROVIDED (T1, T2) FOR CT TESTING.

**EPC CONTRACTOR : TPSC (INDIA) PVT LTD**  
**CUSTOMER : PANCHHOR HYDRO POWER PVT. LTD.**

Unit-3 Transformer

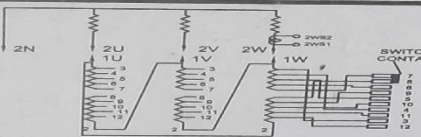


**transformers & rectifiers (india) Ltd.**  
 VILLAGE:CHANGODAR, TA:SANAND, DIST.:AHMEDABAD (Gujarat)



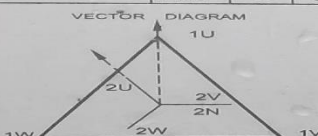
PHASE DISPLACEMENT: +30  
 GROUP NUMBER: 4  
 VECTOR SYMBOL: Dyn11

INSULATION LEVEL	KVp	H.V.	L.V.
		KVms	
		75	-
		28	3



WT1 C1 . 334 / 2 A  
 18 VA 5 CLASS  
 2W PHASE

VECTOR DIAGRAM



SWITCH POSITION	H.V. LEADS CONNECTED	HV VOLTS	LV VOLTS
1	7 - 8	11550	433
2	8 - 9	11412.5	
3	8 - 9	11275	
4	9 - 5	11137.5	
5	9 - 10	11000	
6	10 - 4	10862.5	
7	4 - 11	10725	
8	11 - 3	10587.5	
9	3 - 12	10450	

CAUTION: DE-ENERGISE TRANSFORMER BEFORE CHANGING THE TAP POSITION

COOLING	ONAN	REF. STANDARD	IS:2026
RATING	KVA 250	FREQUENCY	Hz 50
VOLTS AT NOLOAD	HV 11000	PHASES	3
RATED CURRENT	LV 433	IMPEDANCE VOLTAGE (STD. TESTED)	% 5(±10% Tol)
AMPERES	HV 13.12	CORE & WINDINGS	kg. 580
GTD. TEMP. RISE @50 °C AMBIENT	OIL °C 47.13°	WEIGHT OF OIL	kg. 330
MAKER'S SR. NO.	PC0300186	TOTAL MASS	kg. 1570
CUSTOMER'S REF. :	K.L.G.A.-WH-12-002	OIL QUANTITY	litres 370
		YEAR OF MANUFACTURE	2012
		DATED :	13.08.2012
NAME OF PROJECT : 3 X 8.2 MW WANGER - HOMTE SMALL HYDRO POWER PROJECT.			
OWNER : M/S PANCHHOR HYDRO POWER PVT. LTD.			
CLIENT : TPSC (INDIA) PRIVATE LIMITED.			
NOTE : * MARKED VALUES ARE CONVERTED VALUES FOR ALTITUDE 2435 mt. ABOVE MSL.			

Aux. Transformer

**CTR****ON LOAD TAPCHANGER**LICENCE: **ENGLISH ELECTRIC, ENGLAND.**TYPE **FR 16** S.Nr. **1821556** MONTH **3** YEAR **2019**CTR MKOAA Nr. **1822581** CUSTOMER W.O.Nr. **PC0300185**MOTOR **415** V AC/DC **50** Hz CONTROL **110** V **50** HzSERVICE VOLTAGE **66** NORMAL WORKING CURRENT **122** A  
MAX. RATED THROUGH CURRENT **300** APHASES **3** FREQUENCY **50** Hz STEPS **16** STEP VOLTAGE **477** VTAPCHANGER WITHOUT OIL **580** kg. OIL **850** LTR. TOTAL **1310** kg.TRANSITION RESISTANCE **3-4** OHM INSULATION LEVEL **140** kV RMS 1MIN  
**350** kVp 1.2 / 50µs**THIS TAPCHANGER IS SUITABLE FOR DIRECTION OF POWERFLOW TO THE**EXTENT SHOWN HV TO LV **100** % LV TO HV **100** %

MAKERS :

IS : 8468/IEC:60214-1

**CTR****MANUFACTURING INDUSTRIES LIMITED.  
POONA 411014 INDIA.**TC 2105 A4 05  
ASSEMBL

# CTR

## ON LOAD TAPCHANGER

LICENCE: ENGLISH ELECTRIC, ENGLAND.

TYPE **ER16** Sr.Nr. **1821555** MONTH **3** YEAR **2019**  
CTR MKOAA Nr. **1822580** CUSTOMER W.O.Nr. **PG0300184**  
MOTOR **415** V AC/DC **50** Hz CONTROL **110** V **50** Hz  
SERVICE VOLTAGE **66** kV NORMAL WORKING CURRENT **122** A  
MAX. RATED THROUGH CURRENT **300** A  
PHASES **3** FREQUENCY **50** Hz STEPS **16** STEP VOLTAGE **477** V  
TAPCHANGER WITHOUT OIL **530** kg. OIL **850** LTR. TOTAL **1380** kg.  
TRANSITION RESISTANCE **3.4** OHM INSULATION LEVEL **140** kV RMS 1MIN  
**350** kVp 1.2 / 50 $\mu$ s

THIS TAPCHANGER IS SUITABLE FOR DIRECTION OF POWERFLOW TO THE  
EXTENT SHOWN HV TO LV **100** % LV TO HV **100** %

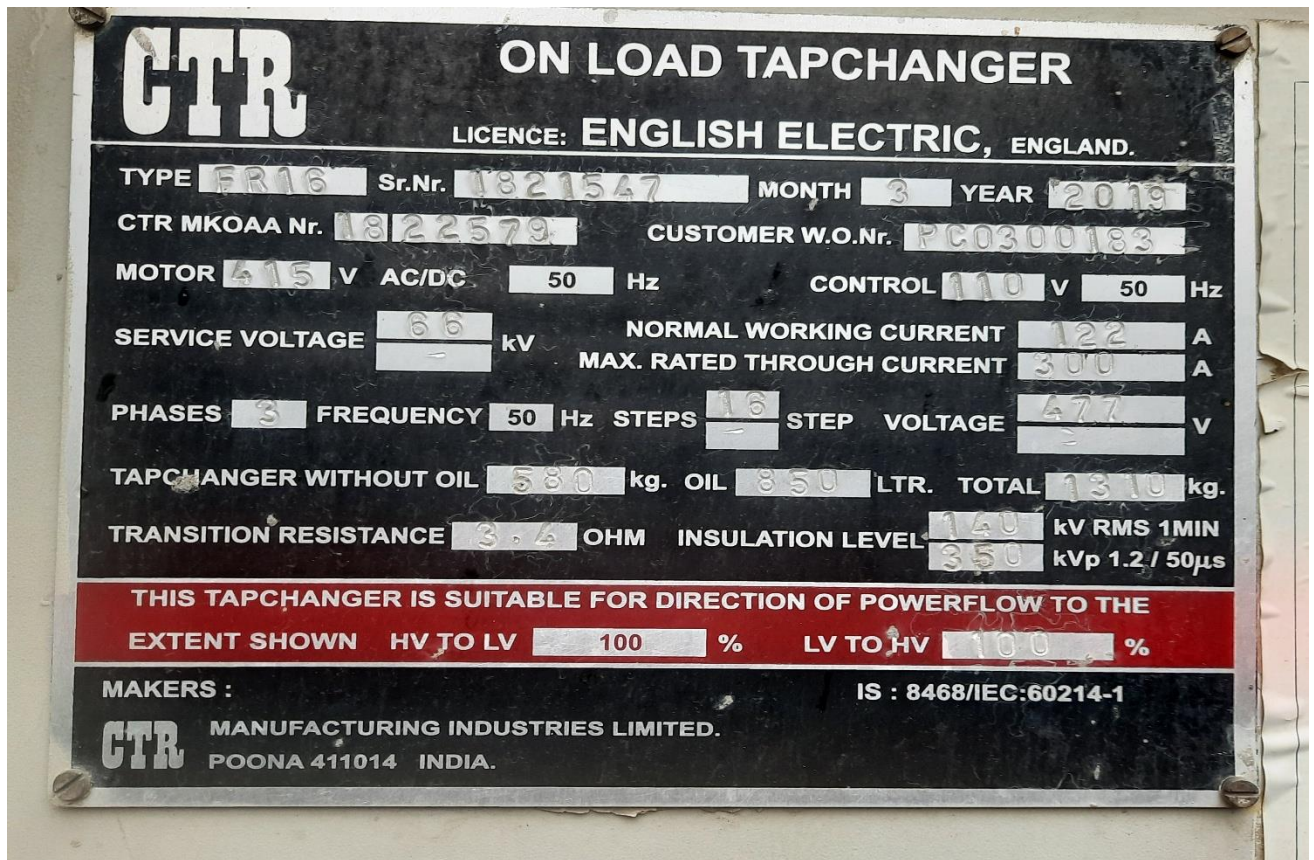
MAKERS :

IS : 8468/IEC:60214-1

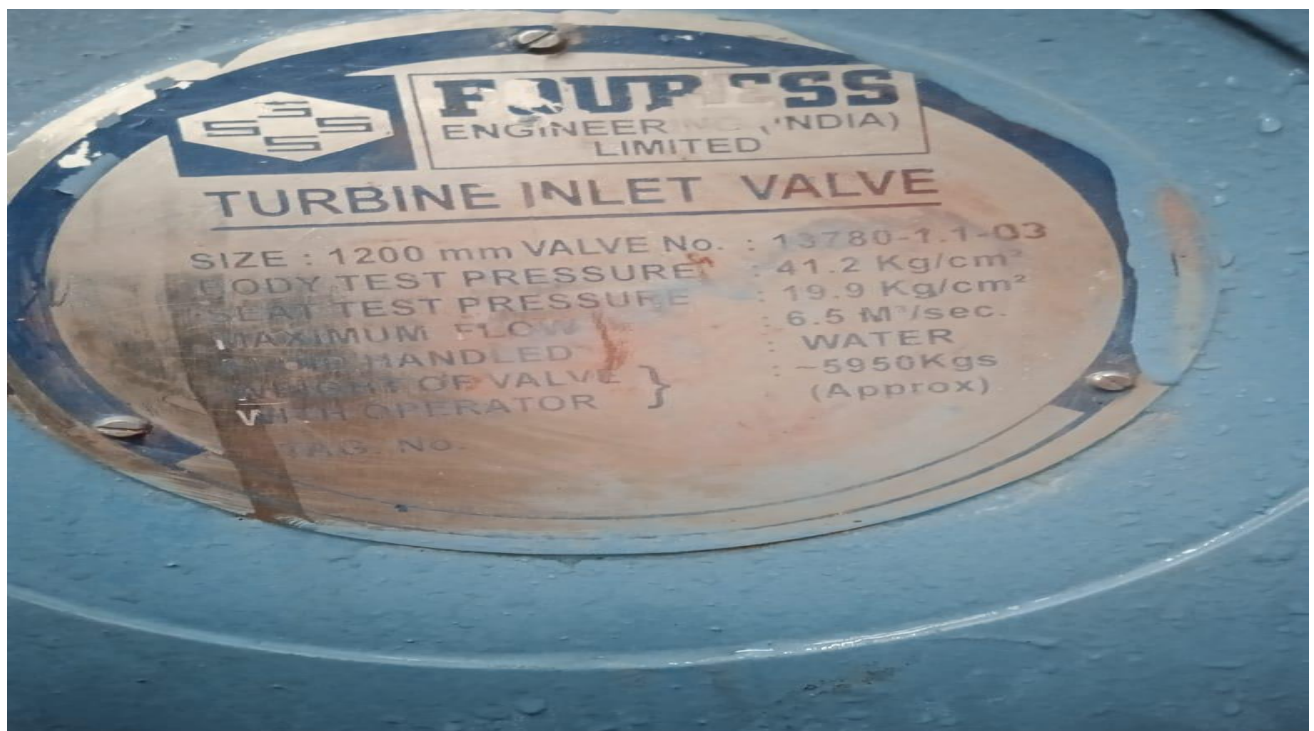
### CTR

MANUFACTURING INDUSTRIES LIMITED.  
POONA 411014 INDIA.

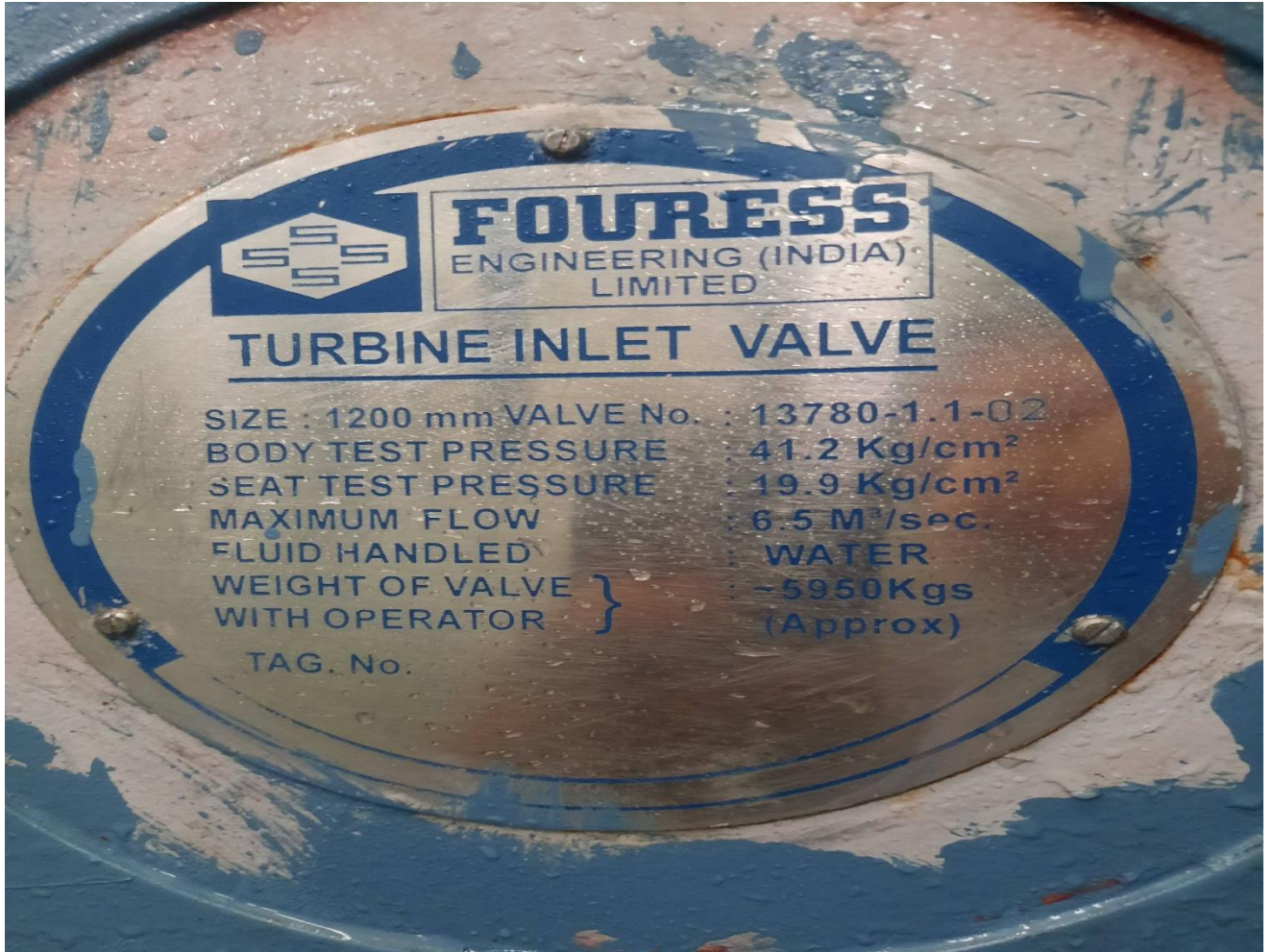




RTCC-3

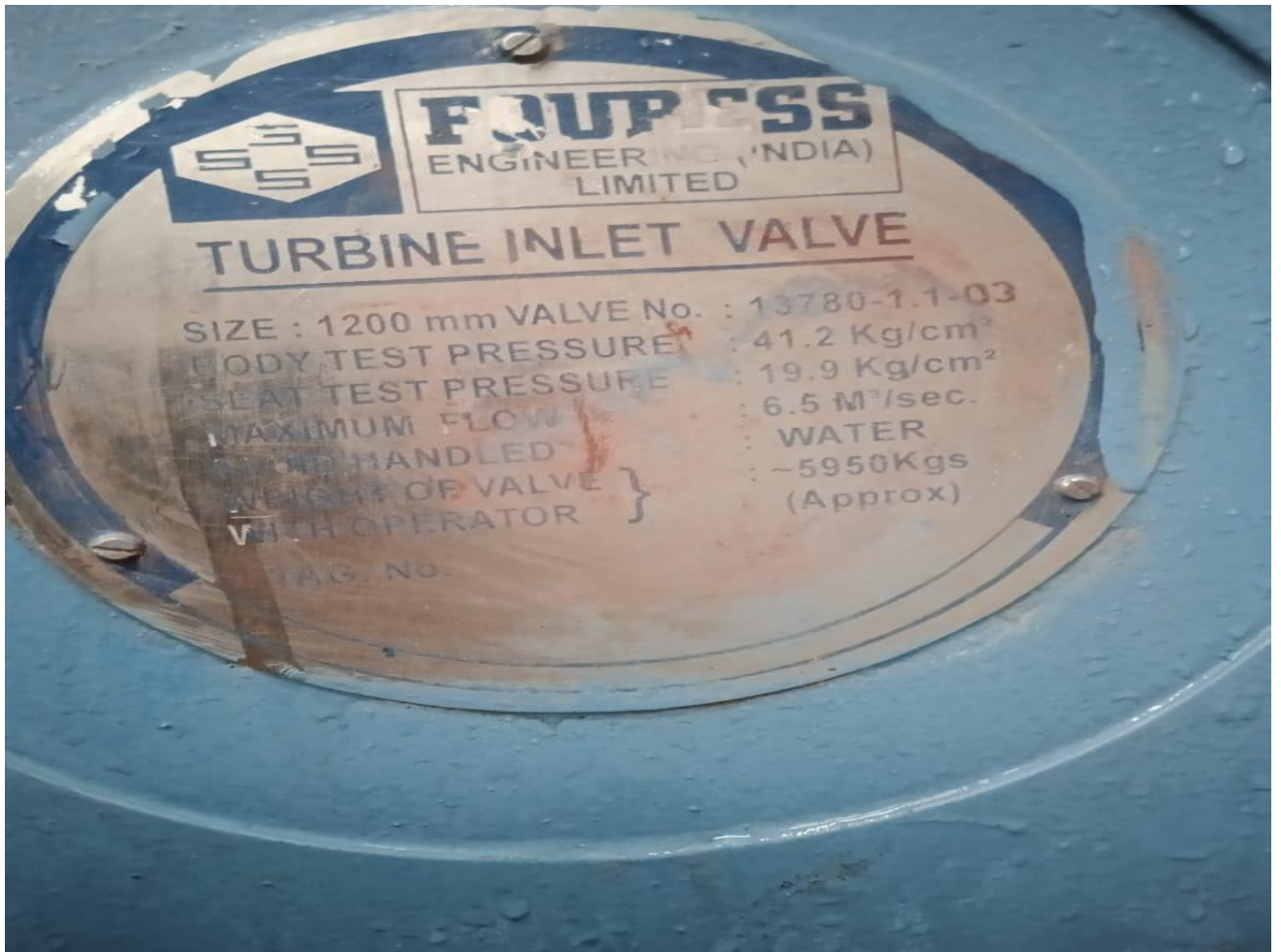


Unit-1 MIV



Unit-2 MIV





Unit-3 MIV

**STATCON ENERGIAA**  
Inspire • Innovate • Implement

ITEM : BATTERY CHARGER

TYPE : FLOAT  BOOST  FCBC

INPUT : 415 V±15 %, 11 A, 3 Ph., 50Hz

OUTPUT : FLOAT : 121.5 VDC, 45 A  
BOOST : 125.2 VDC, 45 A

BATT. TYPE : VRLA  LM  Ni-Cd

BATT. CAP : 400 AH, BATT. CURR. 40 A

SL. No.: 15A00226 , YEAR : 2015

MANUFACTURED BY :  
STATCON ENERGIAA PVT. LTD. Tel.: +91-120-3819665, 652  
E-mail : info@energias.in servicing@energias.in  
Web : www.energias.in

MADE IN INDIA

FCBC-1

**STATCON ENERGIAA**  
Inspire • Innovate • Implement

ITEM : BATTERY CHARGER

TYPE : FLOAT  BOOST  FCBC

INPUT : 415 V±15 %, 11 A, 3 Ph., 50Hz

OUTPUT : FLOAT : 121.5 VDC, 45 A  
BOOST : 125.2 VDC, 45 A

BATT. TYPE : VRLA  LM  Ni-Cd

BATT. CAP : 400 AH, BATT. CURR. 40 A

SL. No.: 15A00227 , YEAR : 2015

MANUFACTURED BY :  
STATCON ENERGIAA PVT. LTD. Tel.: +91-120-3819665, 652  
E-mail : info@energias.in servicing@energias.in  
Web : www.energias.in

MADE IN INDIA

FCBC-2



DCDB



## Annexure-2

### Additional Verification for Large Hydel Projects

1.0 The UCR guidelines/31/ mandates that the Large Hydel Projects (>15 MW installed capacity) need to be scored against additional sustainability assessment based on the following criteria.

Scoring Criteria	
Level 1	Significant gaps relative to basic good practice
Level 2	Most relevant elements of basic good practice have been undertaken but there is one significant gap
Level 3	Describes basic good practice on the sustainability topic
Level 4	All elements of basic good practice have been undertaken and in one or more cases exceeded.
Level 5	Describes proven best practice on a particular sustainability issue that is demonstrable in multiple country contexts.

In the following paragraphs, the activities by the PP with respect to environment and social issue are discussed and the rating of the verifier on the above scale is mentioned for each of the parameter that are to be considered as per UCR guidance document for verification of Large Hydel Projects /31/

### 2.0 Environmental and Social Issues Management

The activities of the PP which has contributed to the environmental and social issues are :

- The project is a Run-of- the River type development without any storage of water. So there is no submersion of vast area of land or felling of trees etc to adversely impact the environment. The land for the project activity is allocated by the state government /16/.The local government clearance has been obtained by PP /22/
- All statutory clearances for the project has been obtained.
- Fish ladder is provided at the diversion weir and adequate provision made that the sufficient water is left in the river The diverted flow of water will be through Bhabha Khad which does not support aquatic life./6/7/
- The land is allocated by the state government on lease basis /16/ and as such there is no rehabilitation requirement.

**Level of opinion :** Level 3

### 3.0 Project Benefits

The activities of the PP which has contributed to benefits from the project activity are :

- It could be seen from the salary statement that majority of the employees are from the state of Himachal Pradesh /33/
- The PP has constructed a link road of 20 feet wide and 5 KM long, from YANGPA PULL situated at bottom of village HOMTE PULL to village HOMTE and RCC wall.



- The PP has donated Rs.50 Lakh to Devata mandir committee, for development of the temple within the G.P. Katgoan /35/.



- The PP is sponsoring two domicile meritorious students (one from General and one from BPL) for technical education in Government colleges/38/.

**Level of opinion : Level 4**

#### **4.0 Project –Affected Communities and Livelihoods and Resettlement :**

The activities of the PP which has contributed to mitigation of those impacted in the project area are :

- The project is a Run-of- the River type development without any storage of water. So there is no submersion of vast area to adversely impact the communities in the project area./6/7/17/. The project activity has improved the quality and duration of electricity availability in the region.
- It could be seen from the salary statement that majority of the employees are from the state of Himachal Pradesh /33/
- The PP has paid Rs 165 lakhs as pleasing amount to Gram Panchayat /40/ as the terms of MOU with the panchayat for permitting to establish the project activity /32/.

The PP has entered an MOU with the Gram Panchayat which lists out the responsibilities of the PP towards the Gram Panchayat like contribution to welfare activities, building roads, providing street lights etc. During verification of the documents submitted, it is noted that the PP has complied with all the commitments made in the MOU and in certain cases has even exceeded.

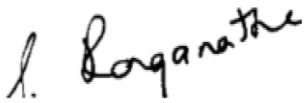
**Level of opinion: Level 4**

### **5.0 Biodiversity and Invasive Species.**

- The project does not have any storage structure and so there is no submergence normally associated with Hydel Projects.
- The project activity does not endanger the species of flora and fauna in the area. Fish ladder is provided at the diversion weir and adequate provision made to ensure that sufficient water is left in the river.

The PP is contributing towards the Local Area Development fund which is used for development of green belt, park etc /36/

**Level of opinion: Level 3**

A handwritten signature in black ink, appearing to read 'S. Ranganathan', written in a cursive style.

**Verifier : S.Ranganathan**

**Date : 21/08/2022**