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VER+ Verification Report

Chishui Zhongshui Hydro Power Development Co.Ltd.

Initial and periodic Verification of the First Monitoring Period

of the

"YANGJIAWAN 9 MW HYDRO POWER PROJECT IN GUIZHOU PROVINCE, CHINA"

Report No. 1109250

17 January 2008

TÜV SÜD Industrie Service GmbH
Carbon Management Service
Westendstr. 199 - 80686 Munich - GERMANY

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Subject:	Initial and First Periodic Verification of a VER+ Project
Executing Operational Unit:	TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 – 80686 Munich, Federal Republic of Germany
Client:	Chishui Zhongshui Hydro Power Development Co.Ltd. No.4 Gongyuan Road, Chishui City,Guizhou Province, P.R. China
Contract approved by:	Werner Betzenbichler
Report Title:	Initial and periodic Verification of the First Monitoring Period of the YANGJIAWAN 9 MW HYDRO POWER PROJECT IN GUIZHOU PROVINCE, CHINA
Number of pages	17 (excluding annexes)

Summary:

TÜV SÜD Industrie Service GmbH has performed a verification of the CDM project: Yangjiawan 9 MW Hydro Power Project in Guizhou Province, China. The verification is based on the currently valid documentation of the UN Framework Convention on Climate Change (UNFCCC). In this context, the relevant documents are the "Marrakesh Accords". Hence, the project is additional, with the carbon revenue from the emission reductions starting at the date of project commissioning being essential to making the project sufficiently profitable to be implemented.

The management of Chishui Zhongshui Hydro Power Development Co.Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project Yangjiawan 9 MW Hydro Power Project in Guizhou Province, China on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD version dated May 2007. The development and maintenance of records and reporting procedures is in accordance with that plan. The calculation and determination of GHG emission reductions from the project is in the responsibility of the management of the project.

The verifier confirms that the project is implemented as planned and described in validated and registered project design documents. Installed equipment being essential for generating emission reduction runs reliably. The monitoring system is in place and the project is ready to generate GHG emission reductions. The monitoring plan complies with the monitoring methodology used.

The verifier can confirm that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated we confirm the following statement:

Reporting period: From 13-11-2006 to 29-09-2007

Verified emission in the above reporting period:

Baseline emissions:	11 203	t CO_2 equivalents
Project emissions:		t CO_2 equivalents
Leakage		t CO_2 equivalents
Emission reductions:	11 203	t CO_2 equivalents

Work carried out by:	**Internal Quality Control by:**
• Dr. Sven Kolmetz; Carl Zhou	• Javier Castro

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
JI	Joint Implementation
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organization
PDD	Project Design Document
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

Chishui Zhongshui Hydro Power Development Co.Ltd. has commissioned an independent verification by TÜV SÜD Industrie Service GmbH (TÜV SÜD) of its CDM project: Yangjiawan 9 MW Hydro Power Project in Guizhou Province, China. Verification is the periodic independent review and ex post determination by the Designated Operational Entity / Independent Entity of the monitored reductions in GHG emissions during the defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification:

- **Initial Verification**: The objective of an initial verification is to verify that the project is implemented as planned, to confirm that the monitoring system is in place and fully functional, and to assure that the project will generate verifiable emission reductions. A separate initial verification prior to the project entering into regular operations is not a mandatory requirement.
- **Periodic Verification**: The objective of the periodic verification is to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; further more the periodic verification evaluates the GHG emission reduction data and express a conclusion with a high, but not absolute, level of assurance about whether the reported GHG emission reduction data is "free" of material misstatements; and verifies that the reported GHG emission data is sufficiently supported by evidence, i.e. monitoring records. If no prior initial verification has been carried out, the objective of the first periodic verification also includes the objectives of the initial verification.

The verification shall consider both quantitative and qualitative information on emission reductions. Quantitative data comprises the monitoring reports submitted to the verifier by the project entity. Qualitative data comprises information on internal management controls, calculation procedures, and procedures for transfer, frequency of emissions reports, review and internal audit of calculations/data transfers.

The verification follows UNFCCC criteria, refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakech Accords.

1.2 Scope

Verification scope is defined as an independent and objective review and ex post determination by the Designated Operational Entity of the monitored reductions in GHG emissions. The verification is based on validated project design document including baseline. These documents are reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. TÜV SÜD has, based on the recommendations in the Validation and Verification Manual, employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generation of VERs.

The verification is not meant to provide any consulting towards the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 GHG Project Description

Yangjiawan 9 MW Hydro Power Project in Guizhou Province China is a run-of-river hydro power plant sited on Xishui River in Shibao Town, Chishui City in Guizhou Province with the installed capacity of 9 MW. The hinge of the power plant includes the gravity dam with the height of 14.77 m, the diversion tunnels with the length of 1,650 m and the power plant. There are 2 turbines and 2 generators with the respective type of HLA551-LJ-122 and SF4500-14/3250. The electricity generated by the proposed project will be connected to Guizhou Province Power Grid, finally to China Southern Power Grid.

2 METHODOLOGY

The project assessment aims at being a risk based approach and is based on the methodology developed in the Validation and Verification Manual an initiative of all Applicant Entities, which aims to harmonize the approach and quality of all such assessments.

In order to ensure transparency, a verification protocol was customized for the project, according to the Validation and Verification Manual. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM/JI project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been proved and the result of the verification.

The verification protocol consists of four tables. The different columns in these tables are described in Figure 1.

The completed protocol is enclosed in Annex 1 to this report.

Initial Verification Checklist – table 1			
OBJECTIVE	Ref.	COMMENTS	Concl.(incl FARs/CARs)
The requirements the project must meet.	*Gives reference to the legislation or agreement where the requirement is found.*	*Description of circumstances and further commendation to the conclusion.*	*This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Verification report. The Initial Verification has additional Forward Action Requests (FAR). FAR indicates essential risks for further periodic verifications*

Periodic Verification Checklist Table 1: Data Management System/Controls		
Expectations for GHG data management system/controls	Score	Verifiers Comments (including *Forward Action Requests*)
The project operator's data management system/controls are assessed to identify reporting risks and to assess the data management system's/control's ability to mitigate reporting risks. The GHG data management system/controls are assessed against the expectations detailed in the table.	A score is assigned as follows: **Full** all best-practice expectations are implemented. **Partial** a proportion of the best practice expectations is implemented **Limited** this should be given if little or none of the system component is in place.	*Description of circumstances and further commendation to the conclusion. This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Verification report. The Initial Verification has additional Forward Action Requests (FAR). FAR indicates essential risks for further periodic verifications*

Periodic Verification Checklist Table 2: GHG calculation procedures and management control testing		
Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks
Identification of potential reporting risks based on an assessment of the emission estimation procedures. Identification of key source data. Focus on those risks that impact the accuracy, completeness and consistency of the reported data.	Identification of the key controls for each area with potential reporting risks. Assessment of adequacy of the key controls and eventually test that the key controls are actually in operation. Internal controls include, Understanding of responsibilities and roles, Reporting, reviewing and formal management approval of data; Procedures for ensuring data completeness, conformance with reporting guidelines, maintenance of data trails etc.	*Identification of areas of residual risks, i.e. areas of potential reporting risks where there are no adequate management controls to mitigate potential reporting risks* *Areas where data accuracy, completeness and consistency could be improved are highlighted.*

Periodic Verification Checklist Table 3: Detailed audit testing of residual risk areas and random testing		
Areas of residual risks	**Additional verification testing performed**	**Conclusions and Areas Requiring Improvement (including *FAR*s)**
List of residual areas of risks of Periodic Verification Checklist Table 2 where detailed audit testing is necessary. *In addition, other material areas may be selected for detailed audit testing.*	*The additional verification testing performed is described. Testing may include:* ▪ *Sample cross checking of manual transfers of data* ▪ *Recalculation* ▪ *Spreadsheet 'walk throughs' to check links and equations* ▪ *Inspection of calibration and maintenance records for key equipment* ▪ *Check sampling analysis results* *Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.*	*Having investigated the residual risks, the conclusions are noted here. Errors and uncertainties are highlighted.*

Figure 1 Verification Protocol Tables

2.1 Review of Documents

The monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached as Annex 2 to this report.

2.2 Follow-up Interviews

On-site interviews and inspection at the project site have been conducted on October 19, 2007 by an auditing team of TÜV SÜD:

Carl Zhou	Jiangsu TÜV Product Service, Shenzen branch	
Interviewed persons:		
Mr. Chen Sheng	Chishui Zhongshui Hydro Power Development Co. Ltd	Leader of the hydropower station
Miss Zhou Zhihong	Chishui Zhongshui Hydro Power Development Co. Ltd	Operator
Mr. He Lin	Chishui Zhongshui Hydro Power Development Co. Ltd	Engineer
Mr. Tu Rencai	Chishui Zhongshui Hydro Power Development Co. Ltd	Monitor on duty
Mr. Lou Gen	Guizhou Zhongshui Hengyuan project consulting and management CO. Ltd	Vice general manager

Mr. Tang Kai	Guizhou Zhongshui Hengyuan project consulting and management CO. Ltd Business manager
Mr. Wang Jiafeng	Guizhou Zhongshui Hengyuan project consulting and management CO. Ltd Engineer
Miss Yu Rong	Climate Bridge Ltd.

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification was to resolve the requests for clarification and any other outstanding issues which needed to be clarified for TÜV SÜD`s positive conclusion on the GHG emission reduction calculation. The Clarification Requests, raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. Forward Action Requests are indicated issues which do not effect the generation of emission reduction in the verified period, but shall be improved in order to ensure the reliability of future data. To guarantee the transparency of the verification process, the concerns raised and responses that have been given are summarized in chapter 3 below and documented in more detail in the verification protocol in Annex 1.

3 VERIFICATION FINDINGS

In the following sections the findings of the verification are stated. The verification findings for each verification subject are presented as follows:

The findings from the desk review of the final monitoring report and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Verification Protocol in Annex 1.

1) Where TÜV SÜD identified issues that needed clarification, corrective action or that represented a risk to the fulfillment of the project objectives, a Corrective Action Request or Forward Action Request, respectively, was issued. The Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Annex 1. The verification of the project resulted in seven Corrective Action Request and one Forward Action Request.
2) Where Corrective Action Requests have been issued, the exchanges between the Client and TÜV SÜD to resolve these Requests are summarized.
3) In the context of Forward Action Requests, risks have been identified, which may endanger the delivery of high quality VERs in the future, i.e. by deviations from standard procedures as defined by the MP. As a consequence, such aspects should receive a special focus during the next consecutive verification. A FAR may originate from lack of data sustaining claimed emission reductions. Forward Action Requests are understood as recommendation for future project monitoring; they are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Annex 1.
4) The final conclusions for verification subject are presented.

The verification findings relate to the project implementation as documented and described in the final monitoring report.

Initial Verification Findings

3.1 Remaining issues, CARs, FARs from previous validation

3.1.1 Discussion

Based on the validation report the verification team identified no missing steps.

3.2 Project Implementation

3.2.1 Discussion

The proposed project is a run-of-river hydro power plant sited on Xishui River in Shibao Town, Chishui City in Guizhou Province with the installed capacity 9 MW (2*4.5 MW). The hinge of the power plant includes the gravity dam with the height of 14.77 m, the diversion tunnels with the length of 1,650 m, the transformer station and the power plant. The project has been implemented as defined in the PDD. During on site this has been verified by the auditor.

In terms of the connection to the power system, the 35KV transmissionline with the length of 12 km was adopted to connect the 35KV transformer of Guandu to the 110 kV Transformer Substation. Considering the capacity of Matan hydro power station downstream, the length of the wires between Matan and Yangjiawan is about 6 km (type LGJ-95/20), the length of wires between Matan and Guandu substation is about 6 km (type of LGJ-185/30). The grid connection agreement with Chishui city power company is dated on June 1 2006. The grid connection agreement with Guizhou grid company, is dated on Jan. 2007.

According to the PDD and the validation report of the Yangjiawan project, only electricity generated and sold to the grid will be monitored.

On site of the power station there are five ammeters for monitoring and metering the generated electricity. Two ammeters (M1 and M2) for the total generated electricity by the 2 generators, two ammeters (M3 and M4) for the electricity used by the power station self, and one ammeter (M5) for the electricity transferred to the grid on the high voltage side of the transformer station.

On the Guandu substation there are two ammeters (M6 and M7) for monitoring and metering the net electricity generated by the Yangjiawan project. One is main ammeter, the other is back-up ammeter.

The detailed information about the monitoring and metering systems and the ammeters have been defined in the monitoring plan of Yangjiawan project, version 1.

3.2.2 Findings

Corrective Action Request 1:

The evidences or records of starting operation should be delivered to the verifier.

Response:

The starting date of operation was on Nov. 13. The evidence of starting operation is delivered to the verifier with the revised Monitoring Report.

Corrective Action Request 2:

As the grid company the project is connected to has been changed, the changes should be described in the monitoring report and the relevant records or evidences should be delivered to the verifers. E.g. the changing records or evidences about ammeters in the Guandu substation, the records or evidences of starting the connection to the Guizhou grid company.

Response:

The change of the grid company has been described in the chapter 2.1 of the revised Monitoring Report. The agreement connected to the Grid with Chishui city power company, dated on June 1 2006. The agreement connected to the Grid with Guizhou grid company, dated in Jan. 2007. The above mentioned evidence is delivered to the verifier with the revised Monitoring Report.

3.2.3 Conclusion

Since the CAR have been closed the project is in compliance with the requirement.

3.3 Internal and External data

3.3.1 Discussion

The following internal parameters need to be obtained according to the monitoring plan:

- Net Electricity supplied to the grid by the project, measured by the meter on site continuously.

The net electricity generated from the project will be measured continuously and recorded on an hourly basis automatically as well as on a monthly basis. The data automatically are transferred to a database.

This data will be cross checked against the sales receipt from the grid to which the project exports power. The invoices have been delivered to the DOE.

The daily data report has to be comprised into a monthly report. The leader of the power station Mr. Chen will check the monthly report. Monthly electricity sales invoices will also be available as an additional check if there is a failure / uncertainty in the data recorded by the metering system.

The grid emission factor is determined according to ACM0002 Version 6 and fixed ex-ante for the duration of the crediting period. The specific grid emissions factor to be applied for the first creding period of the Yangjiawan 9MW Hydro Power Project is 0.77835 tCO2e/MWh. So no other external data is needed.

The registered PDD is available online at

http://cdm.unfccc.int/Projects/DB/TUEV-SUED1182265057.96/view.html

3.3.2 Findings

None

3.3.3 Conclusion

The project complies with the requirements.

3.4 Environmental and Social Indicators

3.4.1 Discussion

No environmental and social indicators are defined in the monitoring plan. Hence the question is not applicable.

3.4.2 Findings

None.

3.4.3 Conclusion

The project complies with the requirements.

3.5 Management and Operational System

3.5.1 Discussion

The related CDM procedures are defined in the operational procedures. An integrated CDM management and operational manual in Chinese is available on site.

The staff has been trained in using the control system. The training records from Nov. 11, 2006 and March 25, 2007 have been verified.

The allocation of responsibilities is documented in the PDD. Mr. Yang Huai is the general manager for the project. He is responsible for reviewing the generated electricity.

Mr. Chensheng is the leader of the power station. He is responsible for the calibration of the ammeters, records and reviewing the statistic of the data.

The operation staffs are responsible for the data records from the ammeters, reporting and handling troubleshooting or emergency situation.

In case of any failure/uncertainty of the on-site monitoring meters, the meter installed at the substation and /or the sales invoices(receipts) can be used to evaluate the net power generation necessary to determine the VERs.

Routines for the archiving of data are defined and documented.

The data trail from the meter to the monitoring report is clearly described in the CDM manual of the PDD.

No CDM specific internal audits are required because the monitoring and measurement of power exports are done automatically every hour and every month as core business. The leader of the power station will check and review the daily data and the monthly report.

3.5.2 Findings

None.

3.5.3 Conclusion

The project complies with the requirements.

Periodic Verification Findings

3.6 Completeness of Monitoring

It has been verified on-site that the data are complete since the beginning of the monitoring period until the date of verification.

3.7 Accuracy of Emission Reduction Calculations

The relevant parameters for the two ammeters are described as follows:

	Type	Accuracy	Serial number
M1 and M2	DSSD331-3TF	0.5	080037/080036
M3 and M4	DSSD331-3TF	0.5	010035/010036
M5	DSSD331-3TF	0.5	080007
M6 and M7	2000-0420/57.7V	0.2	2605071/2605072

During the onsite audit the accuracy of the ammeters has been verified by the audit team and they were all in good condition. The data uncertainty is very low.

3.7.1 Findings

None.

3.7.2 Conclusion

The project complies with the requirements.

3.8 Quality of Evidence to Determine Emission Reductions

The calibration records for the ammeters have been delivered to the verifers. The calibration date of M1 was dated on October 13 2006. The calibration date of M2, M4 and M5 was dated on October 9 2007. The calibration date of M3 was dated on October 10 2007. M1-M5 were calibrated by the Chishui city power company. The calibration date of M6 and M7 was dated on March 19 2007 and they were calibrated by the Guizhou electric power test&research institute.

According to the operation management regulation, the generated electricity should be recorded at 8-9 am by the operation staffs daily. In the end of each month or each year the generated electricity should be recorded at 24:00 by the operation staff. The ammeters can record the generated electricity each hour automatically, and the recorded data will be transferred to the IT system and saved on the hard disk. Each month the grid company will send the balance list of the generated electricity to the Yangjiawan station. The electricity supplied to the station from the grid is monitored and metered by the ammeters M6 and M7 on the Guandu substation and M5 on the site of station . The grid company will send the balance list to the Yangjiawan station.

3.8.1 Findings

Corrective Action Request 3:

As the 1st generator unit started to operate in March 2007, please provide the initial calibration records for M2-M5 to the verifiers.

As the ammeters installed at the Guandu substation have been replaced in March 2007 due to the grid company change (see CAR2), the calibration records for the previous ammeters should be delivered to the verifiers.

Response:

The initial calibration records for M2~M5 before operation is delivered to the verifier with the revised Monitoring Report.

The calibration record for the previous ammeter in Guandu substation is delivered to the verifier with the revised Monitoring report.

Corrective Action Request 4:

The calibration situation should be described in the monitoring report.

Response:

The key meters and backup meter were delivered to calibrate by Guizhou electric power test and research institute, the key meter's certificate No. 070300191, the backup meter's certificate No. 070300192 dated on 19/03/2007. The others meters in the power plant were delivered to calibrate by the Chishui city power company, dated on 13/11/2006. The certificate No. with the first auxiliary meter is 2006-079.The certificate No. with the second auxiliary meter is 2006-076. The certificate No. with the second generator's meter is 2006-075. The certificate No. with the first generator's meter is 2007-075. The certificate No. with the meter export electricity from the plant is 2006-078.

Corrective Action Request 5:

The initial recorded data by the ammeters should be delivered to the verifers. The invoices of the electricity supplied to the station from the grid should be delivered to the verifiers. Please clarify why the data showed on the IT system are inconsistent with the daily data recorded by the operation staff.

Response:

The initial recorded data by the ammeters is delivered to the verifier with the revised Monitoring Report.

The invoices of the electricity supplied to the station from the grid from 13/11/2006 to 29/03/2007 are delivered to the verifier Because the electricity bought from the grid is not balanced from 30/03/2007 to 30/09/2007, thus there is only a electricity balance advice note delivered to the verifier. As the calculation period is from Nov. 13 2006 to Sept. 29 2007, the generation electricity on Sept. 30 should be excluded. This has been considered in the revised MR.

The reason that electric data on the IT system is not consistent with the daily data is that the computer software system has some bug. For example, the hydro power plant was put into operation on 13/11/2006, but until 17/11/2006 the computer system did not work properly. There were only readings in 1~19 o'clock everyday in the computer system etc. Now the central computer control system had been already debugged and put into operation after 08/11/2007.

3.8.2 Conclusion

Since the CAR have been closed the project is in compliance with the requirement.

3.9 Management System and Quality Assurance

The results of the daily recorded data will be reviewed by the leader of the station Mr. Chen and reported to Zunyi company, which is the superior company of Yangjiawan hydro power station.

Mr. Chen will also review the results of the balance list according to the internal records in the station and report to the Manager Mr. Yang. If no problem, Mr.Yang will release the balance list and ask the financial department for sending the invoices to the grid company accordingly.

According to the PDD, in annex 4 the detailed monitoring plan is defined. During the on site audit above mentioned procedures are defined in the related operation instructions.

The staff has been trained in using the control system. The training records on Nov. 11, 2006 and on March 25, 2007 have been verified.

Mr. Yang Huai is the general manager for the project. He is responsible for reviewing the generated electricity. Mr. Chensheng is the leader of the power station. He is responsible for the calibration of the ammeters, records and reviewing the statistic of the data. The operation staffs are responsible for the data records from the ammeters, reporting and handeling troubleshooting or emergency situation.

The troubleshooting procedure is defined in the annex 4 of the PDD. Normally invoices and/ or sales receipts shall be used to evaluate the power generation necessary to determine the CER or VER generation.

On site Mr Chen introduced the following troubleshooting situations.

1. The fuse is blowed out suddenly.

2. The ammeters are broken.

The above mentioned situations will result in wrong record data from the ammeters. The corrective action is to check and replace the fuse or re-calibrate the broken ammeters and to adopt the data in the substation.

3.9.1 Findings

Corrective Action Request 6:

In order to understand reporting procedure easily, please describe the organization chart, the roles and responsibilities clearly in the monitoring report.

Response:

The organization chart and the responsibility of the relevant roles are described in the chapter 4.2 of the revised Monitoring Report.

Corrective Action Request 7:

Please describe job titles in the project, their skills to be needed and trainings clearly in the monitoring report.

Response:

There are four main job titles in this hydro plant: the master, the vice master, the monitoring, the operation and maintenance staff. They

(1) all have been trained about CDM monitoring before operation. On Sep 10th, 2006, the whole staff was trained about CDM and monitoring knowledge in the meeting room of the power plant. It took six days to complete the training.

(2) all graduated in professional electric power school;

(3) all have the relevant knowledge about: hydraulic turbine, governor, hydraulic generator, exciter system, transformer, secondary equipment, secondary system, hydroelectric power station automation, central control system etc.

Furthermore, the master, vice master and monitoring officer all have abundant practice experiences in similar hydro plants.

Forward Action Request 1:

A electronic back-up for the data has to be installed.

Response:

No further action required now, but before the following monitoring period.

3.9.2 Conclusion

Since the CAR have been closed the project is in compliance with the requirement.

4 PROJECT SCORECARD

Risk Areas		Conclusions			Summary of findings and comments
		Baseline Emissions	Project Emissions	Emission Reductions	
Completeness	Source coverage/ boundary definition	✓	✓	✓	There were no findings regarding the completeness.
Accuracy	Physical Measurement and Analysis	✓	✓	✓	Since the CAR have been closed the project is in compliance with the requirement.
	Data calculations	✓	✓	✓	There were no findings regarding the data calculation.
	Data management & reporting	✓	✓	✓	Since the CAR have been closed the project is in compliance with the requirement.
Consistency	Changes in the project	✓	✓	✓	There were no changes.

5 VERIFICATION STATEMENT

TÜV SÜD Industrie Service GmbH has performed a verification of the CDM project: Yangjiawan 9 MW Hydro Power Project in Guizhou Province, China. The verification is based on the currently valid documentation of the UN Framework Convention on Climate Change (UNFCCC). In this context, the relevant documents are the "Marrakesh Accords". Hence, the project is additional. Hence, the project is additional, with the carbon revenue from the emission reductions starting at the date of project commissioning being essential to making the project sufficiently profitable to be implemented.

The management of Chishui Zhongshui Hydro Power Development Co.Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project Yangjiawan 9 MW Hydro Power Project in Guizhou Province, China on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD version dated May 2007. The development and maintenance of records and reporting procedures is in accordance with that plan. The calculation and determination of GHG emission reductions from the project is in the responsibility of the management of the project.

The verifier confirms that the project is implemented as planned and described in validated and registered project design documents. Installed equipment being essential for generating emission reduction runs reliably. The monitoring system is in place and the project is ready to generate GHG emission reductions. The monitoring plan complies with the monitoring methodology used.

The verifier can confirm that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated we confirm the following statement:

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Leakage		t CO_2 equivalents
Emission reductions:	11 203	t CO_2 equivalents

Munich, 2008-01-17

Munich, 2008-01-17

Dr. S. Kolmetz

Annex 1: Verification Protocol

1 INITIAL VERIFICATION CHECKLIST

OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
1. Opening Session			
1.1. Introduction to audits	3,4	The intention and the target of the verification audit were illustrated to the participants of the audit.	☑
1.2. Clarification of access to data archives, records, plans, drawings etc.	3,4	The verification team got open access to all required data, records, plans and drawings and all relevant facilities.	☑
1.3. Contractors for equipment and installation works	1,2,5, 10	The generator units were supplied by the Nanning generator devices factory. And the Guizhou Qianshui engineering construction parent company and the company supplying the units were responsible for installation works. The purchasing contract for the generator unit and subsidiary devices, are dated on April, 2005, No. Guangfa 2005, with Nanjing generator devices factory, and the supplement contract for the generator unit and subsidiary devices, are dated on April,2005, No. Guangfa 2005, with Nanjing generator devices factory.	☑
1.4. Actual status of installation works	1,2,3,5, 10	There are 2 turbines and 2 generators with the respective type of HLA551-LJ-122 and SF4500-14/3250. The electricity generated by the proposed project has been connected to Guizhou Province Power Grid, finally to China Southern Power Grid. The 2 systems are running stable as could be confirmed during the on site.audit. The generator units were started to be	CAR 1

OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
		installed in April 2006, and the 2nd unit was completed in Nov. 2006. The starting date of operation is on Nov. 13 2006. the 1st unit was completed in Mach 2007. The starting date of operation is on March 12. **Corrective Action Request 1** The evidences or records of starting operation should be delivered to the verifier.	
2. Open issues indicated in validation report			
2.1. Missing steps to final approval	2	Based on the validation report the verification team identified no missing steps. The project has been registered at the UNFCCC under the reference number 1193 on Sept. 30 2007	☑
3. Implementation of the project			
3.1. Physical components	1,2,3	The proposed project is a run-of-river hydro power plant sited on Xishui River in Shibao Town, Chishui City in Guizhou Province with the installed capacity 9MW (2*4.5MW). The hinge of the power plant includes the gravity dam with the height of 14.77m, the diversion tunnels with the length of 1,650m, the transformer station and the power plant. The project has been implemented as defined in the PDD. During on site this has been verified by the auditor.	☑

OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
3.2. Project boundaries	1,2,3	The project boundaries are the China Southern Power Grid according to the PDD. In terms of the connection to the power system, the 35KV transmissionline with the length of 12km was adopted to connect the 35KV transformer of Guandu to the 110KV Transformer Substation. Considering the capacity of Matan hydro power station downstream, the length of the wires between Matan and Yangjiawan is about 6Km (type LGJ-95/20), the length of wires between Matan and Guandu substation is about 6Km (type of LGJ-185/30). The grid connection agreement with Chishui city power company is dated on June 1 2006 The grid connection agreement with Guizhou grid company, is dated on Jan. 2007. **Corrective Action Request 2** As the grid company the project is connected to has been changed, the changes should be described in the monitoring report and the relevant records or evidences should be delivered to the verifers. E.g. the changing records or evidences about ammeters in the Guandu substation, the records or evidences of starting the connection to the Guizhou grid company.	CAR 2
3.3. Monitoring and metering systems	1,2,3,5,	According to the PDD and the validation report of the Yangjiawan project, only electricity generated and sold to the grid will be monitored.	

OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
		On site of the power station there are five ammeters for monitoring and metering the generated electricity. Two ammeters (M1 and M2) for the total generated electricity by the 2 generators, two ammeters (M3 and M4) for the electricity used by the power station self, and one ammeter (M5) for the electricity transferred to the grid on the high voltage side of the transformer station. On the Guandu substation there are two ammeters (M6 and M7) for monitoring and metering the net electricity generated by the Yangjiawan project. One is main ammeter, the other is back-up ammeter. The detailed information about the monitoring and metering systems and the ammeters have been defined in the monitoring plan of Yangjiawan project, version 1.	

3.4. Data uncertainty	6,7,8, 9,11,	The relevant parameters for the two ammeters are described as follows: Type Accuracy Serial number M1 and M2 DSSD331-3TF 0.5 080037/080036 M3 and M4 DSSD331-3TF 0.5 010035/010036 M5 DSSD331-3TF 0.5 080007 M6 and M7 2000-0420/57.7V 0.2 2605071/2605072 During the onsite audit the accuracy of the ammeters has been verified by the audit team and they were all in good condition.	☑

		The data uncertainty is very low.	
3.5. Calibration and quality assurance	12, 17	The calibration records for the ammeters have been delivered to the verifers. The calibration date of M1 was dated on October 13 2006. The calibration date of M2, M4 and M5 was dated on October 9 2007. The calibration date of M3 was dated on October 10 2007. M1-M5 were calibrated by the Chishui city power company. The calibration date of M6 and M7 was dated on March 19 2007 and they were calibrated by the Guizhou electric power test&research institute. **Corrective Action Request 3** As the 1st generator unit started to operate in March 2007, please provide the initial calibration records for M2-M5 to the verifiers. As the ammeters installed at the Guandu substation have been replaced in March 2007 due to the grid company change (see CAR2), the calibration records for the previous ammeters should be delivered to the verifiers. **Corrective Action Request 4** The calibration situation should be described in the monitoring report.	CAR3 CAR4
3.6. Data acquisition and data processing systems	5,6,	According to the operation management regulation, the generated electricity should be recorded at 8-9am by the operation staffs daily. In the end of each month or each year the generated electricity should be recorded at 24:00 by the	

		operaton staffs. The ammeters can record the generated electricity each hour automaticly, and the recorded data will be transferred to the IT system and saved on the hard disk. Each month the grid company will send the balance list of the generated electricity to the Yangjiawan station. The electricity supplied to the station from the grid is monitored and metered by the ammeters M6 and M7 on the Guandu substation and M5 on the site of station . The grid company will send the balance list to the Yangjiawan station. **Corrective Action Request 5** The initial recorded data by the ammeters should be delivered to the verifers. The invoices of the electricity supplied to the station from the grid should be delivered to the verifiers. Please clarify why the data showed on the IT system are inconsistent with the daily data recorded by the operation staff.	CAR5
3.7. Reporting procedures	2,3, 5	The results of the daily recorded data will be reviewed by the leader of the station Mr. Chen and reported to Zunyi company, which is the superior company of Yangjiawan hydro power station. Mr. Chen will also review the results of the balance list according to the internal records in the station and report to the Manager Mr. Yang. If no problem, Mr.Yang will release the balance list and ask the financial department for sending the	☑

		invoices to the grid company accordingly.	
3.8. Documented instructions	2,3, 5	According to the PDD, in annex 4 the detailed monitoring plan is defined. During the on site audit above mentioned procedures are defined in the related operation instructions. An integrated Management Manual for monitoring in Chinese version 1 on site is available. **Corrective Action Request 6** In order to understand reporting procedure easily, please describe the organization chart, the roles and responsibilities clearly in the monitoring report.	CAR 6
3.9. Qualification and training	2,3, 5	The staff has been trained in using the control system. The training records on Nov. 11 2006 and on March 25 2007 have been verified. **Corrective Action Request 7** Please describe job titles in the project, their skills to be needed and trainings clearly in the monitoring report.	CAR7
3.10. Responsibilities	2,3, 5	Mr. Yang Huai is the general manager for the project. He is responsible for reviewing the generated electricity. Mr. Chensheng is the leader of the power station. He is responsible for the calibration of the ammeters, records and reviewing the statistic of the data. The operation staffs are responsible for the data records from the ammeters, reporting and handeling troubleshooting or emergency situation. But see CAR 6	See CAR6

3.11. Troubleshooting procedures	2,3, 5	The troubleshooting procedure is defined in the annex 4 of the PDD. In the event the power generated and delivered to the grid as evidenced by invoices and/ or sales receipts shall be used to evaluate the power generation necessary to determine the CER or VER generation. During on site Mr Chen introduced the following troubleshooting situations. 1, The fuse is blowed out suddenly. 2, The ammeters are broken. The above mentioned situations will result in wrong record data from the ammeters. The corrective action is to check and replace the fuse or re-calibrate the broken ammeters, to adopt the data in the substation.	☑
4. Internal Data			
4.1. Type and sources of internal data	5,6, 7, 8, 9, 11	The following internal parameters need to be obtained according to the monitoring plan. Net Electricity supplied to the grid by the project, measured by the meter on site continuously.	☑
4.2. Data collection	5,6, 7, 8, 9, 11	See 3.6 The net electricity generated from the project will be measured continuously and recorded on an hourly basis automatically as well as on a monthly basis. The data automatically are transferred to a database. . This data will be cross verified against the sales receipt from the grid to which the project exports power. The invoices have	☑

		been delivered to the DOE	
4.3. Quality assurance		The daily data report has to be comprised into a monthly report. The leader of the power station Mr. Chen will check the monthly report. Monthly electicity sales invoices will also be available as an additional check if there is a failure/ uncertainty in the data recorded by the metering system.	☑
4.4. Significance and reporting risks	2, 3, 5	As the data is measured hourly, and it has to be comprised into a monthly report, which will be checked by the leader of the station, the sales invoices issued by the grid company can be considered as double checked evidences.The risk of misstatement is very low.	☑
5. External Data			
5.1. Type and sources of external data	2, 3, 5	The grid emission factor is determined according to ACM0002 Version 6 and fixed ex-ante for the duration of the crediting period. The specific grid emissions factor to be applied for the first creding period of the Yangjiawan 9MW Hydro Power Project in Guizhou Province is 0.77835 tCO2e/MWh. So no other external data is needed.	☑
5.2. Access to external data	2, 3, 5	See registered PDD available online at http://cdm.unfccc.int/Projects/DB/TUEV-SUED1182265057.96/view.html	☑
5.3. Quality assurance	2, 3, 5	not applicable	☑
5.4. Data uncertainty	2, 3, 5	not applicable	☑

5.5. Emergency procedures	2, 3, 5	not applicable	☑
6. Environmental and Social Indicators			
6.1. Implementation of measures	2, 3, 5	No environmental and social indicators are defined in the monitoring plan. Hence the quesiton is not applicable.	☑
6.2. Monitoring equipment	2, 3, 5	See chapter 6.1.	☑
6.3. Quality assurance procedures	2, 3, 5	See chapter 6.1.	☑
6.4. External data	2, 3, 5	See chapter 6.1.	☑
7. Management and Operational System			
7.1. Documentation	2, 3, 5	The related CDM procedures are defined in the operation procedures. An integrated CDM management and operational manual in the chinese version is available.during on site.	☑
7.2. Qualification and training	2, 3, 5	See 3.9 The staff has been trained in using the control system. The training records on Nov. 11 2006 and on March 25 2007 have been verified.	See CAR 7

7.3. Allocation of responsibilities	2, 3, 5	See 3.10 The allocation of responsibilities is documented in the PDD. Mr. Yang Huai is the general manager for the project. He is responsible for reviewing the generated electricity. Mr. Chensheng is the leader of the power station. He is responsible for the calibration of the ammeters, records and reviewing the statistic of the data. The operation staffs are responsible for the data records from the ammeters, reporting and handeling troubleshooting or emergency situation.	See CAR 6
7.4. Emergency procedures	2, 3, 5	See 3.11 The necessary procedures have been defined in the internal documents. In case of any failure/uncertainty of the on-site monitoring meters, the meter installed at the sub-station and /or the sales invoices(receipts) can be used to evaluate the net power generation necessary to determine the VERs.	☑
7.5. Data archiving	2, 3, 5	Routines for the archiving of data are defined and documented.	☑
7.6. Monitoring report	2, 3, 5	The data trail from the meter to the monitoring report is clearly described in the CDM manual of the PDD. The monitoring report has been sent by Email to the verifier. Hence the source can be retraced.	☑
7.7. Internal audits and management review	2, 3, 5	No CDM specific internal audits are required because the monitoring and measurement of power exports are done automatically every hour and every month as core business. The leader	☑

		of the power station will check and review the daily data and the monthly report.	

1 PERIODIC VERIFICATION CHECKLIST

Table 1: Data Management System/Controls

Expectations for GHG data management system/controls	Score	Verifiers Comments (including *Forward Action Requests*)
1. Defined organizational structure, responsibilities and competencies		
1.1. Position and roles	Full	The allocation of responsibilities is documented in the PDD. Mr. Yang Huai is the general manager for the project. He is responsible for reviewing the generated electricity. Mr. Chensheng is the leader of the power station. He is responsible for the calibration of the ammeters, records and reviewing the statistic of the data. The operation staffs are responsible for the data records from the ammeters, reporting and handling troubleshooting or emergency situations.
1.2. Responsibilities	Full	The responsibilities are clearly defined as detailed in section 1.1 above.
1.3. Competencies needed	Full	All competencies needed are met by the operating staff..
2. Conformance with monitoring plan		

Expectations for GHG data management system/controls	Score	Verifiers Comments (including *Forward Action Requests*)
2.1. Reporting procedures	Full	The reporting procedures are working as described in the initial verification protocol. The required documents were provided to the audit team and the reviewed persons were totally aware of the reporting procedures.
2.2. Necessary Changes	Partial	The ammeters installed at the Guandu substation have been replaced in March 2007 due to the grid company change (see CAR2).
3. Application of GHG determination methods		
3.1. Methods used	Full	The calculations reflect the methodology as mentioned in the initial verification and are applied according to the monitoring plan.
3.2. Information/process flow	Full	The procedures are mainly applied according to the CDM manual defined in the PDD. The procedures are described during the initial verification protocol.
3.3. Data transfer	Full	The required data are recorded automatically by the meters every hour. The daily report and monthly report are made by the employees through the control system.
3.4. Data trails	Full	The data of the monitoring report have been traced back for one day from the original records of the daily report. The invoices from the grid company have been compared with the reported electricity exports. They are consistent.

Expectations for GHG data management system/controls	Score	Verifiers Comments (including *Forward Action Requests*)
4. Identification and maintenance of key process parameters		
4.1. Identification of key parameters	Full	The key parameter for the determination of GHG emission reductions is the net electricity supply to the grid. It can be double checked by the invoices from the grid company. The audit team did verify the following parameters: 1. invoices from the grid company. 2. sample records of the daily report and the monthly report. All data were in compliance with the figures stated in the monitoring report. The excel worksheet to accumulate data and calculate the emission reduction have been delivered to the DOE.
4.2. Calibration/maintenance	Partial	The calibration and maintenance procedures are in compliance as described in the initial protocol. The related calibration evidences have been provided to the audit team and have been verified. But see CAR3
5. GHG Calculations		
5.1. Use of estimates and default data	Full	The carbon emission factor is used as a predetermined default value which has been defined in the PDD and confirmed during validation of the project.
5.2. Guidance on checks and reviews	Full	See initial verificaiton. The above mentioned procedures are applied.

Expectations for GHG data management system/controls	Score	Verifiers Comments (including *Forward Action Requests*)
5.3. Internal validation and verification	Full	See initial verificaiton. The above mentioned procedures are applied.
5.4. Data protection measures	Partial	The data measured are kept electronically and on paper for the length of the creding period of the project plus 3 years. The electronic data have been verified on site checking the computer. But an electronic copy (like CD) is not available. **Forward Action Request 1:** A electronic back-up for the data has to be installed.
5.5. IT systems	Full	The IT system is based on standard PC and MS-office solutions. They can automatic monitor and measure and back-up the operation data including the generated electricity. Hence the verification team feels confident about its use.

Table 2: GHG calculation procedures and management control testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks
Potential reporting risks based on an assessment of the emission estimation procedures can be expected to occur in the following fields of action: 1. raw data collection 2. calculation methods 3. data transfer Key source data applicable to the project assessed are hereby: • Metering records (for electricity generation,net electricity supply to the grid) •Invoices from the grid company Raw data collection: As the raw metering data has been automaticlly recorded hourly by the automatic monitoring system and periodic recorded by the responsible persons from the power station and the grid company monthly. The monitoring meters have been calibrated and periodicly spot check. And the leader will periodicly review the operation performance The invoices from the grid company are from the independence part. Hence the risk is assessed as low.	The following management controls have been identified during on-site audit. ➢ *Understanding of responsibilities and roles* ➢ *Reporting, reviewing and formal management approval of data;* ➢ *Procedures for ensuring data completeness, conformance with reporting guidelines, maintenance of data trails etc.* ➢ *Controls to ensure the arithmetical accuracy of the GHG data generated and accounting records e.g. checking/ review procedures;* ➢ *Controls over the computer information systems and debugging the software in order to correct the inconsistencies presented in CAR6* ➢ *Review processes for identification and understanding of key process parameters and implementation of calibration maintenance regimes* The reviewed persons during on-site audit can	As the grid connection has been changed during the first monitoring period the risk of non continuous measurements and calibration exists.

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks
Calculation methods: The calculation methods is according to the approved methodology and the calculation of the emission of the emission reduction is applied correctly.Hence the risk is assessed as low. Data transfer: It has been verified that the data transfer is applied according to the described procedures. In spite there was no back-up for the data installed, the evidences from the invoices can be checked and verified during the on site audit. Hence the risk for the procedures of data transfer is assessed as low after confirming the debugging of the software	understand their responsibilities and roles correctly. The reporting procedure can ensure that it either prevents or detects and corrects any significant misstatements. The defined monitoring procedures can ensure data completeness, conformance with reporting guidelines. The necessary data have been delivered to the DOE. They can ensure the arithmetical accuracy of the GHG data generated. The IT control system is on good condition. The operation staffs have sufficient skills and competences to use the IT system. The meters have been calibrated according to the calibration procedure and the state requirements and they have been checked periodically. Hence the management control system is operated good and the potential reporting risk is low.	

Table 3: Detailed audit testing of residual risk areas and random testing

Areas of residual risks	**Additional verification testing performed**	**Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)**
As the grid connection has been changed during the first monitoring period the risk of non continuous measurements and calibration exists.	The additional verification testing performed is described as follows: ➢ all cross checking of manual transfers of data between the invoices and the data from the on-site meters. ➢ Recalculation the emission reduction ➢ Excel Spreadsheet to check links and equations ➢ Inspection of calibration and mainte-nance records for key equipment ➢ Check sampling analysis results ➢ Discussions with process engineers who have detailed knowledge of proc-ess uncertainty/error bands.	The data measured are kept electronically and on paper for the length of the creding period of the project plus 3 years. The data in the electronic form has been verified on site through using the computer. But an electronic copy (like CD) is unavailable. **Forward Action Request 1:** A electronic back-up for the data has to be installed.

Table 4: Compilation of open issues

Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
CARs		
Corrective Action Request 8 The evidences or records of starting operation should be delivered to the verifier. See 1.4	The starting date of operation was on Nov. 13.The evidence of starting operation is delivered to the verifier with the revised Monitoring Report.	☑ This has been verified by the auditor.
Corrective Action Request 9 As the grid company connected to has been changed, the changes should be described in the monitoring report and the relevant records or evidences should be delivered to the verifers. E.g. the changing records or evidences about ammeters in the Guandu substation, The records or evidences starting to connect to the Guizhou grid company. See 3.2	The change of the grid company has been described in the chapter 2.1 of the revised Monitoring Report. The agreement connected to the Grid with Chishui city power company, dated on June 1 2006 The agreement connected to the Grid with Guizhou grid company, dated in Jan. 2007. The above mentioned evidence is delivered to the verifier with the revised Monitoring Report.	☑ This has been verified by the auditor.
Corrective Action Request 10	The initial calibration records for M2~M5 before operation is deliv-	☑

Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
As the 1st generator unit started to operate in March 2007, please provide the initial calibration records for M2-M5 to the verifiers. As the ammeters installed at the Guandu substation have been replaced in March 2007 due to the grid company changed (see CAR2), the calibration records for the previous ammeters should be delivered to the verifiers. See 3.5	ered to the verifier with the revised Monitoring Report. The calibration record for the previous ammeter in Guandu substation is delivered to the verifier with the revised Monitoring report.	This has been verified by the auditor.
Corrective Action Request 11 The calibration situation should be described in the monitoring report. See 3.5	The key meters and backup meter were delivered to calibrate by Guizhou electric power test and research institute, the key meter's certificate No. 070300191, the backup meter's certificate No. 070300192 dated on 19/03/2007. The others meters in the power plant were delivered to calibrate by the Chishui city power company, dated on 13/11/2006. The certificate No. with the first auxiliary meter is 2006-079.The certificate No. with the second auxiliary meter is 2006-076. The certificate No. with the second generator's meter is 2006-075. The certificate No. with the first generator's meter is 2007-075. The certificate No. with the meter export electricity	☑ This has been verified by the auditor.

Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
	from the plant is 2006-078.	
Corrective Action Request 12 The initial recorded data by the ammeters should be delivered to the verifers. The invoices of the electricity supplied to the station from the grid should be delivered to the verifiers. Please clarify why the data showed on the IT system are inconsistent with the daily data recorded by the operation staff. See 3.6	The initial recorded data by the ammeters is delivered to the verifier with the revised Monitoring Report. The invoices of the electricity supplied to the station from the grid from 13/11/2006 to 29/03/2007 are delivered to the verifier. Because the electricity bought form the grid is not balanced from 30/03/2007 to 30/09/2007, thus there is only electricity balance advice note delivered to the verifier. As the calculation period is from Nov. 13 2006 to Sept. 29 2007, the generation electricity on Sept. 30 should be excluded. This has been considered in the revised MR. The reason that electric data on the IT system is not consistent with the daily data is that the computer software system has some bug. For example, the hydro	☑ This has been verified by the auditor.

Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
	power plant was put into operation in 13/11/2006, but until 17/11/2006 the computer system started to take count ;There were only readings in 1~19 o'clock eve-ryday in the computer system and etc. Now the central computer control system had been already debugged normally and put into operation after 08/11/2007.	
Corrective Action Request 13 In order to understand reporting procedure easily, please describe the organization chart, the rolles and responsibilities clearly in the monitoring report. See 3.8	The organization chart and the responsibility of the relevant roles are described in the chapter 4.2 of the revised Monitoring Report.	☑
Corrective Action Request 14 Please describe job titles in the project, their skills to be needed and trainings clearly in the monitoring report. See 3.9	There are four main job titles in this hydro plant:the master, the vice master, the monitor, the op-eration and maintenance staff. They: (1) all have been trained about CDM monitoring and professional technical before the operation.On the Sep 10th 2006, all the staffs were trained about the profes-sional knowledge and CDM	☑ This has been verified by the auditor.

Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
	kownledge in the meeting room of the power plant. It take six days to complete the training. (2) all graduated in professional electric power school; (3) all have the relevant knowledge about:hydraulic turbine, governor, hydraulic generator, exciter system, transformer, secondary equipment, secondary system, hydroelectric power station automation, central control system etc. Furthermore, the master, vice master and monitor all have abundant practice experiences in the similar hydro plant;	

Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
FARs		
Forward Action Request 1: A electronic back-up for the data has to be installed. See table 3	The project owner adopt two methods to back-up the electronic datas: (1) The second harddisk is adopted to back-up the electronic datas everyday. (2) The backup computer is adopted when the main computer control system have any error.	It will be verified in the next period,

Annex 2: Information Reference List

Reference No.	Document or Type of Information
1	Final Project Design Document for CDM project "Yangjiawan 9MW Hydro Power Project in Guizhou Province, China", rev. 03, dated on May 31st 2007
2	Validation Report No. 928078, , rev. 01, issued by TÜV SÜD Industry Service GmbH , dated on June 13 2007
3	MONITORING REPORT Yangjiawan 9MW Hydro Power Project in Guizhou Province, China Version 1.0; 17/10/2007
4	Sven Kolmetz TÜV SÜD Industries Service GmbH Carl Zhou Jiangsu TÜV Product Service On-site interviews and inspection at the project site conducted on October 19 2007 by auditing team of TÜV SÜD. Interviewed persons: Mr. Chen Sheng — Chishui Zhongshui Hydro Power Development Co. Ltd — Leader of the hydropower station Miss Zhou Zhihong — Chishui Zhongshui Hydro Power Development Co. Ltd — Operator Mr. He Lin — Chishui Zhongshui Hydro Power Development Co. Ltd — Engineer Mr. Tu Rencai — Chishui Zhongshui Hydro Power Development Co. Ltd — Monitor on duty Mr. Lou Gen — Guizhou Zhongshui Hengyuan project consulting and management CO. Ltd — Vice general manager Mr. Tang Kai — Guizhou Zhongshui Hengyuan project consulting and management CO. Ltd — Business manager Mr. Wang Jiafeng — Guizhou Zhongshui Hengyuan project consulting and management CO. Ltd — Engineer Miss Yu Rong — Climate Bridge Ltd. — Project manager
5	The construction situation report about the proposal project, dated in Nov. 2006.
6	The sales electricity review list from Nov. 2006 to Oct. 1 2007, total 8 pieces.
7	The calibration certificates for ammeters including the on-site 5 meters and the sub-station 2 meters, Chishui city power company and

Reference No.	Document or Type of Information
	Guizhou electric power test&research institute.
8	The balance note for generation electricity, May 2007 to Sept. 2007, Guizhou grid company
9	The balance note for generation electricity, Nov 13. 2006 to March 29 2007,Chishui city power company
10	The agreement connected to the Grid with Chishui city power company, dated on June 1 2006
11	The agreement connected to the Grid with Guizhou grid company, dated in Jan. 2007.
12	The monitoring plan, dated on Nov. 10 2006, version 1.
13	The samples of the statistic record list for generation electricity daily, from Nov. 18 2006 to Dec. 31 2006.
14	The invoices of sales electricity, Nov 13. 2006 to March 29 2007,Chishui city power company, May 2007 to Sept. 2007, Guizhou grid company
15	The evidence of starting operation date: the operation acceptable report, dated on Nov. 13-14 2006, submitted on Nov. 12 2007.
16	The calibration records of key meter and backup meter in the Guandu substation, dated on March 19 2007, the meter No. 2605071, the certificate No. 070300191, Guizhou eclectric power test and research institute.
17	The previous key meter's calibration record, the meter No. 080037, the Cert. No. 2007-075, dated on Oct. 13 2006, Chishui power company
18	The replaced record of key meter in the Guandu substation, dated on April 2 2007.
19	The balance list of the electricity supplied to the station from March 29 to Oct. 1 2007, dated on Oct. 5 2007. Chishui city power company.
20	The evidence of generation electricity on Sept. 30 2007, Yangjiawan hydro power station
21	MONITORING REPORT Yangjiawan 9MW Hydro Power Project in Guizhou Province, China Version 3.0, 21/12/2007