VERIFICATION REPORT "SKHIDENERGO" LTD.

VERIFICATION OF THE

RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

INITIAL AND 1ST PERIODIC (2006-2007, 2008-2009)

REPORT NO. UKRAINE-VER/0147/2010

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Date of first issue: 18/10/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Skhidenergo ltd.	Client ref.: Yuriy Magera

Summary:

Bureau Veritas Certification has made the initial and 1st periodic verification of the «Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd.», JI Registration Reference Number UA1000206, project of «Skhidenergo» ltd. located in Schastye town, and applying the JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Accredited Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented according to determinated and registered project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, the AAUs totalize 697 361 tons of CO_2eq for the monitoring period 01/01/2006-31/12/2007 (01/01/2006-31/01/2006: 307 962 t CO_2 eq.; 01/01/2007-31/01/2007: 389 399 t CO_2 eq.) and ERUs issued totalize 648 237 tons of CO_2eq for the monitoring period 01/01/2008-31/12/2009 (01/01/2008-31/01/2008: 381 511 t CO_2 eq.; 01/01/2009-31/01/2009: 266 726 t CO_2 eq.).

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0147/2010	Subject Group: JI	
Project title: «Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd.»		
Work carried out by: Team Leader : Oleg Skoblyk		
Work reviewed by: Ivan Sokolov		
Work approved by: Ivan Sokolov	Bureau Veritas Certification Holding SAS	
Date of this revision: 29/12/2010	Rev. No.: 02	Number of pages: 36

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1 INTRODUCTION

Skhidenergo ltd. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project «Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd.» (hereafter called "the project") at Schastye town, Ukraine, UNFCCC JI Reference Number UA1000206.

This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period.

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

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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 monitoring towards reductions in the GHG emissions.

1.3 Verification Team

The verification team consists of the following personnel:

Oleg Skoblyk
Bureau Veritas Certification Team Leader, Climate Change Verifier

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

2 METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 01.1 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

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

The completed verification protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by ELTA JSC and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring Report (2006-2007) version(s) 1.0 dated 25/08/2010, Monitoring Report (2008-2009) version(s) 1.2 dated 25/12/2010 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 31/08/2010 Bureau Veritas Certification performed (on-site) interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Skhidenergo ltd. and ELTA JSC were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Skhidenergo ltd.	Organizational structure. Responsibilities and authorities. Training of personnel. Quality management procedures and technology. Implementation of equipment (records). Metering equipment control. Metering record keeping system, database.
Consultant: ELTA JSC	Baseline methodology. Monitoring plan. Monitoring report. Deviations from PDD.

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;

(b) Clarification request (CL), requesting the project participants to provide additional information for the AIE to assess compliance with the monitoring plan;

(c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

3 INITIAL VERIFICATION FINDINGS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 4 Corrective Action Requests, 2 Clarification requests and 2 Forward action requests.

The number between brackets at the end of each section corresponds to the DVM paragraph.

3.1 Project approval by Parties involved (90-91)

Written project approval by Ukraine and the United Kingdom of Great Britain and Northern Ireland involved in the JI Project have been issued by the DFPs of those Parties when submitting the first verification report to the Designated Focal Point of Ukraine for registration.(Both LoAs are listed in the Category 1 Documents of the Reference section of this report).

The abovementioned written approval is unconditional.

3.2 Project implementation (92-93)

Luhanskaya TPP exploited by energy generating company Skhidenergo ltd. Installed power capacity of the Luhanskaya TPP is 1400 MW. As the Unit#12 is in conservation – 1125MW. All energy equipment was installed in the 1960's. The list of installed equipment:

- boilers TP-100 (Ep-140-640G) (units ## 9-13); boilers TP-100A (units ##14-15), produced by the Taganrog boiler factory.
- turbines K-210-130-1, produced by the "Leningrad metal works.
- power generators TGB-200, produced by the “Kharkov SPC Electrotyazhmash” (units ## 9-13);
- power generators TGB-200M, produced by the “Kharkov SPC Electrotyazhmash” (units ##14-15).

Electricity consumption for own needs –10.24% (2007).
Main, (reserve) fuel - coal, (heavy fuel oil / natural gas).
The Unit #12 is in conservation (out of work), the Unit #8 is written-off.
Project foresees modernization of the main and the auxiliary equipment of the all power generating units of the TPP according to the attached schedule.

All Units Servicing and Preparations for the Reconstruction	2004 - 2017
Unit №8	2014-2017
Unit №9	2014-2015
Unit №10	2009-2010
Unit №11	2011-2012
Unit №12	2014-2017
Unit №13	2010-2011
Unit №14	2013-2014
Unit №15	2012-2013

According to the Project Schedule the preparation measures for the TPP Units' Reconstructions were implemented on the TPP during 2006 - 2007. These measures included:

In 2006:
- the burner nozzles № 1-8 were changed at the boiler unit of the Unit № 13;
- the dust ducts and the main burners' shells № 2,7,9,10,11,13 were changed at the boiler unit of the Unit № 13;
- the dust duct nozzles of the main burners № 1,2,8,6,10,11,12,13,14 at the boiler unit of the Unit № 13;
- the gas flues A,B – 0,5t were repaired at the boiler unit of the Unit № 13;
- the boiler drum was repaired at the boiler unit of the Unit № 13;
- the inner casing of the A-separator was repaired at the boiler unit of the Unit № 13;
- the jog hammers of the precipitation electrodes and the corona-forming and precipitation electrodes elements were repaired at the boiler unit of the Unit № 13;
- the furnace seals of the low-pressure cylinder were repaired at the turbine unit of the Unit № 13;
- the inner and outer cleaning of the boiler unit was implemented at the Unit № 14;
- the main and the overflow burners were repaired at the boiler unit of the Unit № 14;
- the primary ant the auxiliary steam superheaters, water economizer and explosive valves were repaired at the boiler unit of the Unit № 14;
- the duct reversible screw was repaired at the boiler unit of the Unit № 14;
- the inner and outer cleaning of the boiler unit was implemented at the Unit № 10;

- the separation drum and the heating duct were repaired at the - the inner and outer cleaning of the boiler unit was implemented at the Unit № 10;
- the sealing bearings №6 and 7 were replaced at the turbine unit of the Unit № 10;
- the control and steam distribution system was repaired and the receiver pipes were reconstructed at the turbine unit of the Unit №10;
- the generator rotor was repaired at the Unit № 10;
- the inner and outer cleaning of the boiler unit was implemented at the Unit № 11;
- the main and the overflow burners were repaired at the boiler unit of the Unit № 11;
- the sealing bearings were repaired at the turbine unit of the Unit № 11;
- the control and steam distribution system was repaired and the receiver pipes were reconstructed at the turbine unit of the Unit №11;
- the vacuum system of the turbine was repaired at the Unit № 11;
- the inner and outer cleaning of the boiler unit was implemented at the Unit № 15;
- the sealing bearings were repaired at the turbine unit of the Unit № 15;
- the control and steam distribution system was repaired and the receiver pipes were reconstructed at the turbine unit of the Unit №15;
- the generator rotor was changed at the Unit № 15.

In 2007:
- the high-pressure heater casing was repaired at the turbine unit of the Unit №9;
- the flow part of the high-pressure heater was repaired at the turbine unit of the Unit №9;
- the regulating stage of the high-pressure cylinder was changed at the turbine unit of the Unit №9;
- the high-pressure rotor was balanced at the Unit №9;
- the flow part of the mid-pressure cylinder was repaired and the diaphragms were changed at the stages № 14 and 15 at the turbine unit of the Unit №9;
- the mid-pressure rotor and the blades of the stages № 12, 13, 14, 15 and 16 were changed at the turbine unit of the Unit №9;
- the inner and outer cleaning of the boiler unit was implemented at the Unit № 9;
- 496 packages and 32 collectors were changed at the water econoimizer of the boiler unit at the Unit №9;
- the packages were changed and the repairs were implemented at the primary and the second steam superheaters at the boiler unit at the Unit №9;
- the scrubbers №1, 2, 3, 4, 5 at the Unit №9;
- the smoke exhausters were repaired including the change of the main wheel at the Unit №9;

- the flow party of the low-pressure cylinder was repaired and the blade unit of the low-pressure rotor was changed at the turbine unit of the Unit №13;
- the inner and outer cleaning of the boiler unit was implemented at the Unit № 13;
- the blade unit of the low-pressure rotor was changed at the turbine unit of the Unit №10;
- the high- and low- pressure heaters were repaired at the Unit №10;
- the inner and outer cleaning of the boiler unit was implemented at the Unit № 10;
- the main burners' nozzles were changed at the boiler unit of the Unit №10;
- the horizontal gas-ducts were repaired at the boiler unit of the Unit №15;
- the exhaust steam feeding collector for the front sealings of the turbogenerator were reconstructed at the Unit №15.

In 2008:
- the sealing bearings №6 and 7 were replaced at the turbine unit of the Unit №10;
- the turbogenerator condenser compensators were repaired at the Unit №10;
- the high-, mid- and low-pressure fittings of the turbogenerator were repaired at the Unit №10;
- the heat insulation and the setting of the boiler and the turbine units were reconstructed at the Unit №10;
- the sealing bearings №6 and 7 were replaced and the journal-bearings №1-7 were repaired at the turbine unit of the Unit №11;
- the turbogenerator condenser compensators were repaired at the Unit №11;
- the discharge circulating valves reducers were repaired. The discharge circulating valve reducer №1 was replaced at the turbine unit of the Unit №11;
- the high-, mid- and low-pressure fittings of the turbogenerator were repaired at the Unit №11;
- the heat insulation and the setting of the boiler and the turbine units were reconstructed at the Unit №11;
- the RS-type speed controller was replaced at the turbine unit of the Unit №9;
- the pulverized-coal conduits APP № 3, 4, 6, 9 were repaired at the boiler unit of the Unit №9;
- the main and discharge burners were replaced at the boiler unit of the Unit №9;
- the heat insulation and the setting of the boiler and the turbine units were reconstructed at the Unit №9;
- the sealing bearings №6 and 7 were replaced and the journal-bearings №1-7 were repaired at the turbine unit of the Unit №13;

- the acid cleaning of the high-pressure heater was implemented at the turbine unit of the Unit №13;
- the high-, mid- and low-pressure fittings of the turbogenerator were repaired at the Unit №13;
- the smoke exhausters were repaired at the boiler unit of the Unit №13;
- the heat insulation and the setting of the boiler and the turbine units were reconstructed at the Unit №13;
- the thrust bearing №2 was repaired at the turbine of the Unit №14;
- the main and discharge burners were repaired at the boiler unit of the Unit №14;
- the low-pressure cylinder was repaired at the turbine unit of the Unit №15;
- the low-pressure cylinder furnaces were reconstructed at the turbine of the Unit №15 to reach the higher efficiency level;
- the regulating valve №4 of the mid-pressure cylinder at the turbine unit of the Unit №15 was repaired;
- the turbogenerator fittings were repaired at the Unit №15;
- the heat insulation and the setting of the boiler and the turbine units were reconstructed at the Unit №15.

In 2009:

- the generator shaft sealing was repaired including the change of the thrust blocks at the Unit №15;
- the vacuum armature of the turbogenerator was repaired at the Unit №15;
- the low-pressure cylinder was repaired including the replacement of the low-pressure rotor and the furnace and diaphragm sealing at the turbine unit of the Unit №10;
- the quenching girder of the water economizer was cleaned and repaired at the boiler unit of the Unit №10;
- the heat insulation and the setting of the boiler and the turbine units were reconstructed at the Unit №10;
- the vacuum armature of the turbogenerator was repaired at the Unit №9 and the stuffing box seal was changed;
- the drain tank of the turbogenerator was repaired at the Unit№9;
- the heat insulation and the setting of the boiler and the turbine units were reconstructed at the Unit №9;
- the static discharge elimination device was repaired at the turbogenerator rotor of the Unit №9;
- the stages 26 – 31 turbine blades were repaired at the Unit №11;
- the low-pressure cylinder was repaired at the turbine unit of the Unit №11;
- the oil catchers, bow collectors, inner and outer panels of the turbogenerator were repaired at the Unit №11;
- the packing bearings of the turbogenerator were repaired at the Unit №13;

- the technical and circulating water collectors were repaired at the turbogenerator of the Unit №13; **JI PROJECT MONITORING REPORT** 6
- the current collecting brushes were changed at the turbogenerator of the Unit №13;
- the sealing bearings №6 and 7 were replaced and the journal-bearings №1-7 were repaired at the turbine unit of the Unit №14;
- the slip rings and 132 junk-rings were replaced at the torbogenerator unit of the Unit №14;
- the turbogenerator gas system was repaired at the Unit №14.

All project activity was checked verification team during site visit.

4 VERIFICATION CONCLUSIONS

4.1 Compliance of the monitoring plan with the monitoring methodology (94-98)

The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.

For calculating the emission reductions or enhancements of net removals, key factors, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions or enhancements of net removals are clearly identified, reliable and transparent.

Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The calculation of emission reductions or enhancements of net removals is based on conservative assumptions and the most plausible scenarios in a transparent manner.

4.2 Revision of monitoring plan (99-100)

Not applicable.

4.3 Data management (101)

The project is implemented on the TPP in accordance with technical standards of Ukraine. All the equipment has monitoring and security equipment according to the national energy sector requirements. All the data, needed for the monitoring is collected in the production department

of the TPP and accumulated in a specific standard table called “3-tech Form” in accordance with the GKD-34.09.103-96 “The calculation of the reported technical and economical parameters of the power plant concerning the thermal efficiency of the equipment. Methodological tool”, approved by the Ministry of Energy and Electrification of Ukraine in 1996. The main parameters of the Station are measured by the meters and shown in graphs in a real time. The data of the fuel consumption is measured and collected for the whole TPP and the energy produced is measured per each unit separately. This allows to measure the average emission for all the TPP and to see the influence of the Project activity while some of the units are out of operation.

All the starts and stops of each Unit are monitored and also shown in the technical documentation alongside with the working time hours for each Unit of the TPP.

That means, that even when some unit is out of the operation, all the measures continue to be collected and the overall project emission is still being calculated. All the calibrations and checks of the equipment are also documented.

The electricity supply is being monitored by the Electricity Department of the TPP at the central electric panel of the TPP and sent to the Technical Production Department (TPD).

The coal consumption is being monitored daily by the Fuel-Transport Department. The reports are also sent to the TPD.

The heavy fuel oil consumption is being monitored daily by the Boiler-Turbine Department of the TPP. The reports are sent to the TPD.

The natural gas consumption is being monitored by the Gas Distribution System. The daily reports are also sent to the TPD.

The data of the Net Calorific Value of the fuel is being provided to the TPD by the certified laboratory of the TPP daily.

The TPD collects all the data and calculate the Specific Fuel Rate daily. After that, the data is being summarized in the monthly reports and in the annual report called “3-tech” Form.

All the measures are being sent to the project manager of the “ELTA” company, who collects the data, calculates the emission, emission reductions and creates a monitoring report.

All the data shall be stored in the paper and electronic form at the TPP and in the data base of the “ELTA” company during all lifetime of the project.

The function of the monitoring equipment, including its calibration status, is in order.

The evidence and records used for the monitoring are maintained in a traceable manner.

The data collection and management system for the project is in accordance with the monitoring plan.

4.4 Verification regarding programmes of activities (102-110)

Not applicable.

5 VERIFICATION OPINION

Bureau Veritas Certification has performed initial and 1st periodic verification of the “Reconstruction of the units at the Structure Unit “Luhanskaya TPP” of the “Skhidenergo” ltd.” Project in Ukraine, which applies JI specific approach. The verification was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of “Skhidenergo” ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD version 2.2.1. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification confirms that the project is implemented according to determinated and registered project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Reporting period: From 01/01/2006 to 31/12/2006
Baseline emissions : 5 929 372 t CO_2 equivalents.
Project emissions : 5 621 411 t CO_2 equivalents.
Emission Reductions : 307 962 t CO_2 equivalents.

Reporting period: From 01/01/2007 to 31/12/2007
Baseline emissions : 6 924 403 t CO_2 equivalents.
Project emissions : 6 535 004 t CO_2 equivalents.
Emission Reductions : 389 399 t CO_2 equivalents.

Reporting period: From 01/01/2008 to 31/12/2008
Baseline emissions : 7 090 254 t CO_2 equivalents.
Project emissions : 6 708 742 t CO_2 equivalents.
Emission Reductions : 381 511 t CO_2 equivalents.

Reporting period: From 01/01/2009 to 31/12/2009
Baseline emissions : 6 034 519 t CO_2 equivalents.
Project emissions : 5 767 793 t CO_2 equivalents.
Emission Reductions : 266 726 t CO_2 equivalents.

6 REFERENCES

Category 1 Documents:
Documents provided by Type the name of the company that relate directly to the GHG components of the project.

/1/	Monitoring Report for period 01/01/2006-31/12/2007 version 1.0, dated 25/08/2010
/2/	Monitoring Report for period 01/01/2006-31/12/2007 version 1.2, dated 25/12/2010
/3/	Monitoring Report for period 01/01/2008-31/12/2009 version 1.0, dated 25/08/2010
/4/	Monitoring Report for period 01/01/2008-31/12/2009 version 1.2, dated 25/12/2010
/5/	Project Design Document, version 2.2.1 dated 12/02/2010
/6/	A Letter of Approval for Joint Implementation Project "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd." dated 03/12/2010 issued by Department of Energy and Climate Change of United Kingdom of Great Britain and Northern Ireland
/7/	A Letter of Approval for Joint Implementation Project "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd.", № 752/23/7 from 09.06.2010 issued by National Environmental Investment Agency of Ukraine.
/8/	Emission reductions Calculation Excel Spreadsheet "monitoring Lu.xls" version 1 dated 25/08/2010

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

1. Acceptance-delivery statement of repaired pieces of equipment. ПВД-5,6,7
2. Acceptance-transfer statement #31-C of natural gas in accordance with supply contract number 10-15P from 31.05.2005. 31.03.2006
3. Acceptance-transfer statement of natural gas in accordance with contract #8P-15Pr for 01.01.2007. 31.03.2007
4. Accreditation certificate (chemical laboratory) №РЬ0212/2004. 23.12.2004-23.12.2007
5. Accreditation certificate (chemical laboratory) №РЬ286/2004. 25.12.2007-25.12.2010
6. Assessment (calibration, replacement) electric meters installed at Luhanskaya TPP. 02.10.2009. Removed –A1R-3-AL-C8-T, #01013455
7. Assessment (calibration, replacement) electric meters installed at Luhanskaya TPP. 10.05.2009. Removed - A1R-3-AL-C8-T, #01010690
8. Assessment (calibration, replacement) electric meters installed at Luhanskaya TPP. 22.09.2009. Removed –A1R-3-AL-C8-T, #01010700; A1R-3-AL-C8-T, #01010694

9. Assessment (calibration, replacement) electric meters installed at Luhanskaya TPP. 30.09.2009. Removed –A1R-3-AL-C8-T, #01010695
10. Calculation of reporting technical and economic indices of the thermal efficiency of power equipment. Guidance. GKD 34.09.103-96
11. Directions on the reduction of violation of environmental legislation requirements #108 dated 11.09.2009
12. Directions on the reduction of violation of environmental legislation requirements #37 dated 30.04.2008
13. Folder and list of documentation on capital repair ТГ-14 (25.03.2006-04.09.2006). Conclusions and protocols ЛМiС
14. Folder and list of documentation on capital repair ТГ-14 (25.03.2006-04.09.2006). Conclusions and protocols ЛМiС. Turbine.
15. Folder and list of statements on capital repair of boiler бл.9 (24.04.2007-23.11.2007)
16. Folder and list of statements on capital repair ТГ-9 (24.04.2007-23.11.2007)
17. Folder and list of statements on capital repair ТГ-9 (24.04.2007-23.11.2007). Continuance
18. Folder and list of statements on capital repair бл.9 (24.04.2007-23.11.2007). Continuance
19. Folder and list of statements on capital repair бл.9 (24.04.2007-23.11.2007). Welding documentation.
20. Folder and list of statements on capital repair бл.9 (24.04.2007-23.11.2007). ЛМiС documentation.
21. Folder and list of statements on capital repair ТГ-14 (25.03.2006-04.09.2006)
22. Folder and list of statements on capital repair ТГ-14 (25.03.2006-04.09.2006). Part 1. Boiler.
23. Folder and list of statements on capital repair ТГ-14 (25.03.2006-04.09.2006). Part 2. Boiler.
24. Folder and list of statements on operating repair of the unit 14 ТГ (16.08.08-26.09.08)
25. Folder and list of statements on operating repair of the unit 14 ТГ (2009)
26. Folder and list of statements on operating repair of the unit 9 turbine (28.10.08-14.11.08)
27. Folder and list of statements on operating repair of the unit 9 ТГ (2009)
28. Folder and list of statements on operating repair of unit 14 (16.07.07-28.07.07)
29. Folder and list of statements on operating repair of ТГ-14 (16.08.08-26.09.08)
30. Folder and list of statements on operating repair бл.9 (05.08.2006-05.09.2006)

31. Journal of monthly fuel calculations. Chemical Department of Luhanskaya TPP
32. List of coal scales used on Luhanskaya TPP for 2006
33. List of coal scales used on Luhanskaya TPP for 2007
34. List of coal scales used on Luhanskaya TPP for 2008
35. List of coal scales used on Luhanskaya TPP for 2009
36. List of electric meters commercial accounting connections Luhanskaya TPP for 2006
37. List of electric meters commercial accounting connections Luhanskaya TPP for 2007
38. List of electric meters commercial accounting connections Luhanskaya TPP for 2008
39. List of electric meters commercial accounting connections Luhanskaya TPP for 2009
40. List of report documentation on operating repair of the unit 14 boiler (03.08.09-28.08.09)
41. List of statements on repair determination and acceptance of repaired equipment бл.9. 24.04.2007
42. Passport of electricity meter A1R-3-0L-C4-T, serial #01013146
43. Passport of electricity meter A1R-3-0L-C4-T, serial #01013147
44. Passport of electricity meter A1R-3-0L-C4-T, serial #01013154
45. Passport of electricity meter A1R-3-AL-C8-T, serial #01010685
46. Passport of electricity meter A1R-3-AL-C8-T, serial #01010687
47. Passport of electricity meter A1R-3-AL-C8-T, serial #01010688
48. Passport of electricity meter A1R-3-AL-C8-T, serial #01010689
49. Passport of electricity meter A1R-3-AL-C8-T, serial #01010690
50. Passport of electricity meter A1R-3-AL-C8-T, serial #01010691
51. Passport of electricity meter A1R-3-AL-C8-T, serial #01010692
52. Passport of electricity meter A1R-3-AL-C8-T, serial #01010693
53. Passport of electricity meter A1R-3-AL-C8-T, serial #01010694
54. Passport of electricity meter A1R-3-AL-C8-T, serial #01010695
55. Passport of electricity meter A1R-3-AL-C8-T, serial #01010696

56. Passport of electricity meter A1R-3-AL-C8-T, serial #01010699
57. Passport of electricity meter A1R-3-AL-C8-T, serial #01010700
58. Passport of electricity meter A1R-3-AL-C8-T, serial #01013455
59. Passport of electricity meter A1R-3-AL-C8-T, serial #01013457
60. Passport of electricity meter A1R-3-AL-C8-T, serial #01013458
61. Passport of electricity meter A1R-3-AL-C8-T, serial #01013459
62. Passport of electricity meter A1R-3-AL-C8-T, serial #01013459
63. Passport of electricity meter A1R-3-AL-C8-T, serial #01013460
64. Passport of electricity meter Energy-9, serial #36044
65. Passport of electricity meter Energy-9, serial #36045
66. Passport of electricity meter Energy-9, serial #36047
67. Passport of electricity meter Energy-9, serial #36092
68. Passport of electricity meter Energy-9, serial #36093
69. Passport of electricity meter Energy-9, serial #36094
70. Passport of electricity meter Energy-9, serial #36095
71. Passport of electricity meter Energy-9, serial #36096
72. Passport of electricity meter Energy-9, serial #36097
73. Passport of electricity meter Energy-9, serial #36098
74. Passport of electricity meter EvroALFA, serial #01198717
75. Passport of electricity meter EvroALFA, serial #01198718
76. Passport of electricity meter EvroALFA, serial #01198719
77. Passport of electricity meter EvroALFA, serial #01198720

78. Passport of electricity meter EvroALFA, serial #01198721

79. Passport of electricity meter EvroALFA, serial #01198723

80. Passport of electricity meter EvroALFA, serial #01198725

81. Passport of electricity meter EvroALFA, serial #01198727

82. Passport of electricity meter EvroALFA, serial #01198729

83. Passport of electricity meter EvroALFA, serial #01198730

84. Passport of electricity meter EvroALFA, serial #01198733
85. Passport of electricity meter EvroALFA, serial #01198735

86. Passport of electricity meter EvroALFA, serial #01198736

87. Passport of electricity meter EvroALFA, serial #01198738

88. Passport of electricity meter EvroALFA, serial #01198739

89. Passport of electricity meter EvroALFA, serial #01198740

90. Passport of electricity meter EvroALFA, serial #01198741

91. Passport of electricity meter EvroALFA, serial #01198743

92. Passport of electricity meter EvroALFA, serial #01198744

93. Passport of electricity meter EvroALFA, serial #01198745

94. Passport of electricity meter EvroALFA, serial #01198748

95. Passport of railroad scales PVM-002

96. Passport of railroad scales VVET-75. TD-2. P SD TU 29.2-19377931-001-2006
97. Passport of scales #432. 15-A transporter.
98. Passport of scales #435. 15-B transporter.

99. Photo of electricity meter Actaris, serial #36043255

100. Photo of electricity meter EvroALFA, serial #01198718

101. Photo of electricity meter EvroALFA, serial #01198719
102. Photo of electricity meter EvroALFA, serial #01198720

103. Photo of electricity meter EvroALFA, serial #01198721

104. Photo of electricity meter EvroALFA, serial #01198723

105. Photo of electricity meter EvroALFA, serial #01198725
106. Photo of electricity meter EvroALFA, serial #01198727

107. Photo of electricity meter EvroALFA, serial #01198729

108. Photo of electricity meter EvroALFA, serial #01198730

109. Photo of electricity meter EvroALFA, serial #01198735
110. Photo of electricity meter EvroALFA, serial #01198736
111. Photo of electricity meter EvroALFA, serial #01198738

112. Photo of electricity meter EvroALFA, serial #01198739

113. Photo of electricity meter EvroALFA, serial #01198740

114. Photo of electricity meter EvroALFA, serial #01198741

115. Photo of electricity meter EvroALFA, serial #01198743

116. Photo of electricity meter EvroALFA, serial #01198744

117. Photo of electricity meter EvroALFA, serial #01198745
118. Photo of electricity meter EvroALFA, serial #01198746
119. Photo of electricity meter EvroALFA, serial #01198748

120. Report documentation on operating repair of the unit 14 boiler (16.08.08-27.09.08)
121. Report documentation on operating repair of the unit 9 boiler (13.04.09-14.05.09)
122. Report documentation on operating repair of the unit 9 boiler (28.10.08-14.11.08)
123. Report on atmospheric air protection for 2006

124. Report on atmospheric air protection for 2007

125. Report on atmospheric air protection for 2008

126. Report on atmospheric air protection for 2009
127. Statement of movement and fuel balances for March 2006
128. Statement of movement and fuel balances for March 2007

129. Statement of movement and fuel balances for March 2008
130. Statement of movement and fuel balances for March 2009

131. Statement on (calibration, replacement) electric meters installed at Luhanskaya TPP. 15.09.2009. Removed –A1R-3-AL-C8-T, #01010685; A1R-3-AL-C8-T, #01010696
132. Statement on (calibration, replacement) electric meters installed at Luhanskaya TPP. 17.09.2009. Removed –A1R-3-AL-C8-T, #01010687; A1R-3-AL-C8-T, #01010689
133. Statement on (calibration, replacement) electric meters installed at Luhanskaya TPP. 18.09.2009. Removed –A1R-3-AL-C8-T, #01010692
134. Statement on (calibration, replacement) electric meters installed at Luhanskaya TPP. 18.09.2009. Removed –A1R-3-AL-C8-T, #01013457; A1R-3-AL-C8-T, #01010688
135. Statement on (calibration, replacement) electric meters installed at Luhanskaya TPP. 21.10.2009. Removed –A1R-3-AL-C8-T, #01010691
136. Statement on performed works of capital repair ЦВД, ЦСД ТГ st.№9 by Concern "VUESP" at 2007
137. Statement on technical verification (replacement) of calculated electric meters 12 October 2009
138. Statement on technical verification (replacement) of calculated electric meters 13 October 2009

139. Statement on technical verification (replacement) of calculated electric meters 14 October 2009

140. Statement on technical verification (replacement) of calculated electric meters 15 October 2009
141. Statement on the verification of compliance with environmental legislation 20.09.2006-01.12.2006
142. Statement on the verification of compliance with environmental legislation at the Structure Unit “Luhanskaya TPP” of the “Skhidenergo” ltd. 07.04.2008-25.04.2008
143. Statement on the verification of compliance with environmental legislation at the Structure Unit “Luhanskaya TPP” of the “Skhidenergo” ltd. 17.08.2009-07.09.2009

144. Technical statement on the actual consumption of natural gas from SE “Gas – Ukraine” NSC "Naftogaz - Ukraine" resources. 31.03.2008
145. Techno-economic performance equipment for TPP Luhanskaya 01.2006-12.2006. Form 3-tech
146. Techno-economic performance equipment for TPP Luhanskaya 01.2007-12.2007. Form 3-tech
147. Techno-economic performance equipment for TPP Luhanskaya 01.2008-12.2008. Form 3-tech
148. Techno-economic performance equipment for TPP Luhanskaya 01.2009-12.2009. Form 3-tech
149. Techno-economic performance equipment for TPP Luhanskaya 03.2006-03.2006. Form 3-tech
150. Techno-economic performance equipment for TPP Luhanskaya 03.2007-03.2007. Form 3-tech
151. Techno-economic performance equipment for TPP Luhanskaya 03.2008-03.2008. Form 3-tech
152. Techno-economic performance equipment for TPP Luhanskaya 03.2009-03.2009. Form 3-tech

Persons interviewed:
List persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.

/1/ Roman Taranyuk-Deputy Chief of boiler-turbine Department
/2/ Alexander Maslov - Chief PTO
/3/ Victor Malygin - Chief Engineer
/4/ Oleg Mozhenets - Lead Engineer of electrical Department
/5/ Elena Ageenkova - Chief of chemical laboratory
/6/ Natalia Lomakina - Lead specialist of Ecology Department
/7/ Maxim Rogovoy - Deputy Director of JSC ELTA

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APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

VERIFICATION PROTOCOL

Check list for verification, according to the JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
Project approvals by Parties involved					
90	Has the NFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	A Letter of Approval for Joint Implementation Project "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd." No.752/23/7 dated 09/06/2010 issued by National Environmental Investment Agency of Ukraine.	N/a	N/a	OK
91	Are all the written project approvals by	Yes, all the written	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	Parties involved unconditional?	project approvals by Parties involved are unconditional.			
Project implementation					
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	CAR1: The most project activity that mentioned in MR's included to permanent repair, mid-life repair or capital repair. These repairs are common practise in power generation industry and can't be included to proposed project.	CAR1 - In the Baseline Scenario (2003-2005) there were also permanent repairs, mid-life repairs and capital repairs, but the SFR in those years did not get better. The volume of the measures implemented in the Project Scenario during the permanent repair, mid-life repair or capital repair is much wider then in the Baseline Scenario. All the measures, that should be included in the repair program as the common practice described in the GKD 34.20.661-2003 "The rules for the servicing and repairs of the equipment, buildings and constructions of the Power Plants and the Networks" Approved by the Ministry of the Fuel and	The issue is closed.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
			Energy of Ukraine in 2004. The measures implemented in the Project Scenario are beyond these obligatory volume (the description is provided in the separate Excel tables available to the AIE).	The issue is closed.	OK
		CL1: Please clarify why amount of emission reductions in 2008 lower then in 2007.	CL1 – The amount of the ER's in 2009 is lower then in 2008 mainly because of the electricity supply difference. In 2009 it is lower then in 2008, so the amount of the emissio and ER's is also lower.		
93	What is the status of operation of the project during the monitoring period?	Project has been operational for the whole monitoring period, which is 01.01.2006 – 31.12.2007 and 01.01.2008 – 31.12.2009. FAR1: Please	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		photograph every stages of unit reconstruction. CAR2: Please clarify deviations between PDD and MR's emission reductions and what are it reasons.	CAR2 – The deviations between PDD and MR's appeared because the calculations in the PDD were made using the average annual data. In the MR's the monthly calculations were used. Besides, the calculations of the 2009 ER's in the PDD were made using a predictable data. The financial crisis corrected those plans and the electricity supply was lowered in 2009. Consequently, the volume of the ER's was also lowered as far as it depends on the electricity supply.	The issue is closed.	OK
Compliance with monitoring plan					
94	Did the monitoring occur in accordance with the monitoring plan included in the	FAR2: Please make sure that all	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	journals and logbooks of fuel consumption and power generation will archive and saving during Project period.			
		CAR3: Number of electricity meters in PDD is 59. In MR's mentioned only 30 electricity meters. Please explain this difference.	CAR3 – The data for the PDD included main and reserved meters. In the MR's only the main meters were mentioned. Their quantity can change during the years, so the information about it is provided in each MR.	The issue is closed.	OK
		CL2: Please provide Excel spreadsheets with emission reduction calculations.	Excel spreadsheets "мониторинг Lu.xls" was provided to BVC and checked by verification team.	The issue is closed.	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline	CAR4: Please correct figure in section B.1 of MR's:	CAR4 – The Fuel-Transport Dept. is responsible for the coal consumption data	The issue is closed.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	□ specify what data was collected by every department of TPP □ clarify who collected necessary IPCC data □ clarify who carries out final data processing □ specify responsible persons.	collection. The Boiler-Turbine Dept. is responsible for the heavy fuel oil consumption data collection. The Electricity Dept. collects the data about the electricity supply. The Chemical Lab checks the fuel for it's Net Caloric Value. The data about the natural gas consumption comes to the Production Technical Dept. This department collects all the data mentioned above and compiles the 3-TECH form. The IPCC data is being collected by the Project Developer (MR Developer) - ELTA. On the basis of the 3-TECG form ELTA calculates the Emission and the Emission Reductions. All the calculations are stored at the electronic database of the ELTA Company. The Responsible Person – Maksym Rogovoy		

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
			(m_rogovoy@elta.kharkov.ua).		
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Yes, data sources used for calculating emission reductions or enhancements of net removals are clearly identified, reliable and transparent. See CAR4 above.	N/a	N/a	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	Yes, emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, are selected by carefully balancing accuracy and reasonableness, and appropriately	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		justified of the choice			
Applicable to JI SSC projects only					
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	N/a	N/a	N/a	N/a
Applicable to bundled JI SSC projects only					
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/a	N/a	N/a	N/a
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/a	N/a	N/a	N/a
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
Revision of monitoring plan					
Applicable only if monitoring plan is revised by project participant					
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	N/a	N/a	N/a	N/a
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	N/a	N/a	N/a	N/a
Data management					
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	N/a	N/a	N/a	N/a
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	N/a	N/a	N/a	N/a
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	N/a	N/a	N/a	N/a
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
Verification regarding programs of activities (additional elements for assessment)					
102	Is any JPA that has not been added to the JI PoA not verified?	N/a	N/a	N/a	N/a
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/a	N/a	N/a	N/a
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/a	N/a	N/a	N/a
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	N/a	N/a	N/a
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/a	N/a	N/a	N/a
Applicable to sample-based approach only					
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	characteristics of JPAs, such as: − The types of JPAs; − The complexity of the applicable technologies and/or measures used; − The geographical location of each JPA; − The amounts of expected emission reductions of the JPAs being verified; − The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?				
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/a	N/a	N/a	N/a
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	N/a	N/a	N/a	N/a
109	Is the sampling plan available for	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	submission to the secretariat for the JISC.s ex ante assessment? (Optional)				
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/a	N/a	N/a	N/a