VERIFICATION REPORT
"SKHIDENERGO" LTD.

VERIFICATION OF THE
RECONSTRUCTION OF UNITS1,2,3 AND 4 AT ZUYEVSKA THERMAL POWER PLANT.

INITIAL AND 1ST PERIODIC (2009)

REPORT NO. UKRAINE-VER/0148/2010

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Date of first issue:	Organizational unit:
07/10/2010	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
Skhidenergo ltd.	Yuriy Magera

Summary:

Bureau Veritas Certification has made the initial and 1st periodic verification of the «Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant», JI Registration Reference Number 0198, project of «Skhidenergo» ltd. located in Zugres Village, 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, and the ERUs issued totalize 97297 tons of CO_2eq for the monitoring period 01/01/2009-31/12/2009.

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.:	Subject Group:	
UKRAINE-ver/0148/2010	JI	
Project title: «Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant»		
Work carried out by: Team Leader : Ivan Sokolov Team Member : Oleg Skoblyk		
Work reviewed by: Leonid Yaskin - Internal Technical Reviewer		
Work approved by: Flavio Gomes - Operational Manager		
Date of this revision: 26/10/2010	Rev. No.: 02	Number of pages: 32

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1 INTRODUCTION

Skhidenergo ltd. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project «Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant» (hereafter called "the project") at Zugres, Ukraine, UNFCCC JI Reference Number 0198.

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:

Ivan Sokolov
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Oleg Skoblyk
Bureau Veritas Certification Climate Change Verifier

This verification report was reviewed by:

Leonid Yaskin
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 determination protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by Global Carbon BV 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 version(s) 1.0 dated 12/04/2010 and project as described in the determined PDD.

To address Bureau Veritas Certification corrective action and clarification requests, Global Carbon B.V. revised the MR and resubmitted it as final version 2.0 dated 17 September 2010.

2.2 Follow-up Interviews

On 02/09/2010 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 Global Carbon BV 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: Global Carbon BV	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 6 Corrective Action Requests, 5 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 the Netherlands has been issued by the NFP of that Party when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines.

The abovementioned written approval is unconditional.

3.2 Project implementation (92-93)

The proposed project is aimed at increasing the fuel efficiency, reliability, and availability of all four coal fired units at Zuyevska TPP, which belong to the DTEK holding company, Ukraine. The TPP has four identical conventional condensing steam turbine units of 300 MW each. They were commissioned in 1982, 1986, and 1988, and as such, the TPP can be considered as one of the newest coal fired TPPs connected to the grid.
Implementation of the proposed project activity allows to generate electric energy with higher efficiency, thus reducing the amount of combustion of fossil fuels (mainly coal) significantly below the level of what would happen in the absence of the proposed project. It directly results in reduction of GHG emission as well as emission of pollutants (dust, SO_x)
The proposed project is intended to modernise all four units at the TPP in order to:

- Improve energy efficiency and reduce auxiliary equipment consumption
- Improve reliability and availability
- Improve part-load efficiency
- Introduce modern control systems
- Reduce the dust emission
- Reduce SO_x emission

The design solutions proposed for project implementation reflect the good engineering practices provided by major local and international equipment manufacturers.

The solutions allow increasing the efficiency of the existing power plant equipment to a level higher than foreseen by the original design. They represent state of the art modernisation technology which could be applied over the existing power plant equipment.

The scope of reconstruction of each of the units is generally identical, and differs only in details.
Plant auxiliaries, common for all units are involved in the reconstruction as well. Flue gas desulfurization (FGD) plant is also included, and it is planned at this stage to be common for units 1, 3, and 4, with Unit #2 having an individual FDG plant.

The unit reconstruction consists of the following packages of individual measures:

1. Modernisation of steam turbine generator (STG), including:
    a. Reconstruction of low pressure cylinder of STG, replacement and modernisation of STG auxiliaries
    b. Rehabilitation of high and middle pressure STG cylinders
    c. Rehabilitation of regeneration equipment and vacuum system
    d. Retrofit of alternator cooling system
2. Rehabilitation of the boiler
3. Modernisation of the unit control system
4. Rehabilitation of the unit step-up transformer
5. Modernisation of switch room equipment, partial replacement of circuit breakers
6. Improvement of ESP (electrostatic precipitators) operation

Plant auxiliaries modernisation (mailnly plant cooling part, which includes cooling tower, cooling water supply and return channels).

The project activity started on the 31st of December 2008 with first start of the reconstructed unit #2. It was expected in PDD (table 2) that the next scheduled unit #1 to start operation in December 2009. Actualy the unit (#1) was started after reconstruction on 18 December 2009 and is being operated in precomissioning mode. The regular operation is expected to begin in the end of 2010. Within the first commitment period of 2008-2012 the following schedule is planned:

Start of Unit #4 after reconstruction	December 2010
Start of Unit #3 after reconstruction	December 2011

After completion of the last unit (#3) the project will operate at full scale.

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 activity only affects the emissions due to combustion of fuels in the boilers of plants units 1, 2, 3 and 4. Therefore, in order to monitor the project emissions a JI specific approach was proposed which foresees monitoring of:

- fuels consumption by the TPP (including the NCV of each particular fuel used);
- amount of electricity supplied to the grid.

These values are metered and stored allowing for reliable and transparent monitoring.

The baseline emissions are established in the following way (details see in Annex 2 PDD ver.2.7):

1. The Specific Fuel Consumption (SFC_{BSI}) in the baseline for the whole TPP was constantly monitored with monthly and annual reporting; the reporting forms are created and stored. The SFC is expressed in grams

of coal equivalent/MWh supplied to the grid and will be converted to GJ/MWh.

2. SFC in the baseline was fixed ex-ante based on seven years (2002-2008) average data of: power supplied to the grid, fuels consumption taking into account the amount of each fuel and its NCV.

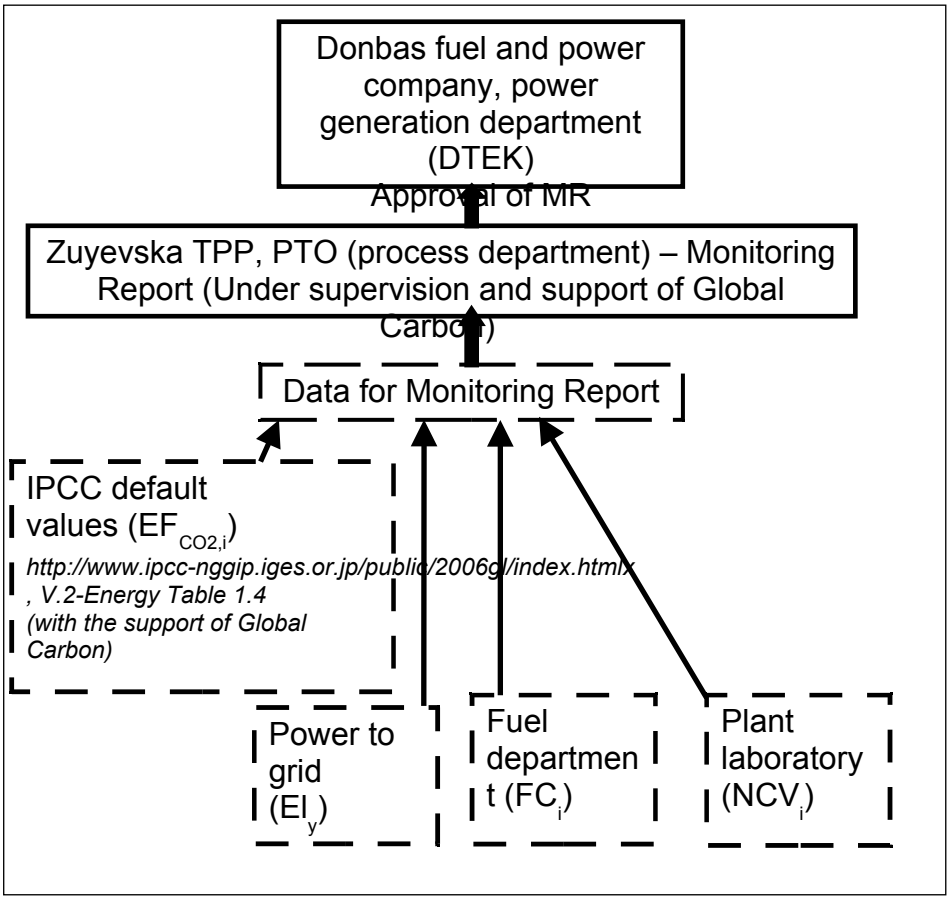

Figure 1: Data collection and processing for monitoring at Zuyevska TPP

In regard of data processing and archiving the Management of Zuyevska TPP:

- Organizes monitoring (the appropriate orders and instructions may be issued, specifying the responsible executors, monitoring and reporting are carried out),
- Recording the required data, monitoring and reporting on the project GHG emissions at the TPP
- Operation of power plant equipment,
- Recording the required data, monitoring and reporting on the project GHG emissions at the TPP.

- All data archived will be kept for at least two years after the last transfer of ERUs to the client.

Person responsible for data collection and arhiving is Mr. Yevgeniy Zhelesnyak – head of PTO (process) department of Zuyevskaya TPP.

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 second periodic verification of the «Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant» 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 2.7. 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 01/01/2009 to 31/12/2009

Baseline emissions	: 4877956	t CO_2 equivalents.
Project emissions	: 4780659	t CO_2 equivalents.
Emission Reductions	: 97297	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 version 1.0, dated 12/04/2010
/2/	Monitoring Report version 2.0, dated 17/09/2010
/3/	Project Design Document, version 2.7 dated 30/08/2010
/4/	A Letter of Approval for Joint Implementation Project "Reconstruction of Units 1, 2, 3 and 4 at Zuyevska Thermal Power Plant" No.1231/23/7 dated 19/08/2010 issued by National Environmental Investment Agency of Ukraine
/5/	A Letter of Approval for Joint Implementation Project "Reconstruction of Units 1, 2, 3 and 4 at Zuyevska Thermal Power Plant" No.2009JI22 dated 07/01/2010 issued by the Ministry of Economic Affairs, the Netherlands
/6/	Emission reductions Calculation Excel Spreadsheet "20100412_SD01_ER_MR_DTEK_ver1.0.xlsx" version 1 dated 12/04/2010
/7/	Emission reductions Calculation Excel Spreadsheet "20100914_SD01_ER_MR_DTEK_ver2.0.xlsx" version 2 dated 14/09/2010

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

1. Acceptance statement #4 of contract work performed for December 2008
2. Acceptance-delivery statement of the capital repaired cooling tower #2 dated 28 November 2009
3. Acceptance-delivery statement of the facility «Modernization of boiler CCI-312A unit #1 Zuevskaya TPP» after reconstruction unit #1 dated 30/12/2009
4. Acceptance-delivery statement of the facility «Modernization of equipment installation duttovoyi-traction unit #1 Zuevskaya TPP» after reconstruction unit #1 dated 30/12/2009
5. Acceptance-delivery statement of the facility «Modernization of dust preparation equipment by unit #1 Zuevskaya TPP» after reconstruction unit #1 dated 30/12/2009
6. Acceptance-delivery statement of the facility «Modernization of equipment water feeding device unit #1 Zuevskaya TPP» after reconstruction unit #1 dated 30/12/2009

7. Acceptance-delivery statement of the facility «Modernization of the control and management unit #1 Zuevskaya TPP» after reconstruction unit #1 dated 30/12/2009
8. Acceptance-delivery statement of the facility «Sulfur treatment system for boiler CCI-312A unit #1 Zuevskaya TPP» after reconstruction unit #1 dated 30/12/2009
9. Acceptance-delivery statement of the facility «Upgrading turbine K-300-240-2 unit #1 Zuevskaya TPP» after reconstruction unit #1 dated 31/12/2009
10. Act of the State Technical Commission on the acceptance of the completed by reconstruction object. #183 dated 04.22.2009. Unit 2
11. Amount of electricity supplied Zuevskaya TPP Vostokenergo in Energy Market for August 2009
12. Analysis of fuel samples. 11-15.05.2010
13. Analysis of fuel samples. 11-15.08.2010
14. Analysis of fuel samples. 16-20.05.2010
15. Analysis of fuel samples. 16-20.08.2010
16. Analysis of fuel samples. 21-25.08.2010
17. Analysis of fuel samples. 21-26.05.2010
18. Analysis of fuel samples. 26-31.08.2010
19. Appendix 1 to certificate on certification #VL-416/2010 dated 25/05/2010. Certification scope.
20. Appendix to permission on the emission of contaminants in atmospheric air by stationary sources №1415070500-12 dated 16.12.08
21. Calculation of reporting technical and economic indices of the thermal efficiency of power equipment. Guidance. CTAG 34.09.103-96
22. Certificate on certification chemical laboratory. #VL-622/07 dated 17/12/07
23. Certificate on certification laboratory. #VL-359/07 dated 14/05/2007
24. Certificate on certification laboratory. #VL-416/2010 dated 25/05/2010
25. Decision of the Executive Committee of Zuhres City Council #117 dated 11.06.2008. Unit #1
26. Decision of the Executive Committee of Zuhres City Council #270 dated 11.06.2008. Unit #2
27. General works register JSC “Enerhovysotspetsbud”. 14.04.2008-01.10.2008
28. Journal of determining the quality of fuel on consumption
29. Letter from the Ministry of Fuel and Energy of Ukraine. From 06.30.2009 № 07/32-4163
30. List of technical specifications of electricity commercial recording

points ZuTES

31. Log analysis of fuel on consumption
32. Passport of electricity meter Energy-9, serial #36102
33. Passport of electricity meter Energy-9, serial #83226
34. Passport of electricity meter EvroALFA, serial #01147039
35. Passport of electricity meter EvroALFA, serial #01147041
36. Passport of electricity meter EvroALFA, serial #01147051
37. Passport of electricity meter EvroALFA, serial #01147064
38. Passport of electricity meter EvroALFA, serial #01147070
39. Passport of electricity meter EvroALFA, serial #01147080
40. Passport of electricity meter EvroALFA, serial #01147094
41. Passport of electricity meter EvroALFA, serial #01147095
42. Passport of electricity meter EvroALFA, serial #01147096
43. Passport of electricity meter EvroALFA, serial #01147097
44. Passport of electricity meter EvroALFA, serial #01147103
45. Passport of electricity meter EvroALFA, serial #01147104
46. Passport of electricity meter EvroALFA, serial #01147105
47. Passport of electricity meter EvroALFA, serial #01147106
48. Passport of electricity meter EvroALFA, serial #01147108
49. Passport of railroad scales #31
50. Passport. Conveyor scales "Ermak VL 2-2», № 1757
51. Photo of electricity meter Energy-9, serial #34225
52. Photo of electricity meter Energy-9, serial #36104
53. Photo of electricity meter Energy-9, serial #36105
54. Photo of electricity meter Energy-9, serial #36106
55. Photo of electricity meter Energy-9, serial #83226
56. Photo of electricity meter Enerhomira, serial #02595500083
57. Photo of electricity meter Enerhomira, serial #02825501533
58. Photo of electricity meter Enerhomira, serial #02825501534
59. Photo of electricity meter Enerhomira, serial #02825501538
60. Photo of electricity meter Enerhomira, serial #45012903

61. Photo of electricity meter Enerhomira, serial #45066514
62. Photo of electricity meter Enerhomira, serial #45069325

63. Photo of electricity meter EvroALFA, serial #01146200

64. Photo of electricity meter EvroALFA, serial #01146204

65. Photo of electricity meter EvroALFA, serial #01147039
66. Photo of electricity meter EvroALFA, serial #01147041

67. Photo of electricity meter EvroALFA, serial #01147051

68. Photo of electricity meter EvroALFA, serial #01147064

69. Photo of electricity meter EvroALFA, serial #01147070

70. Photo of electricity meter EvroALFA, serial #01147080

71. Photo of electricity meter EvroALFA, serial #01147094

72. Photo of electricity meter EvroALFA, serial #01147095

73. Photo of electricity meter EvroALFA, serial #01147096

74. Photo of electricity meter EvroALFA, serial #01147097

75. Photo of electricity meter EvroALFA, serial #01147103

76. Photo of electricity meter EvroALFA, serial #01147104

77. Photo of electricity meter EvroALFA, serial #01147105

78. Photo of electricity meter EvroALFA, serial #01147106

79. Photo of electricity meter EvroALFA, serial #01147108

80. Photo of power lines

81. Photo of reconstructed cooling tower

82. Photo of verification team

83. Register #365 of liquid fuel that used in production for 31 December 2009

84. Register #365 of solid fuel that used in production for 31 December 2009
85. Register #83 of solid fuel that used in production for 24 March 2009
86. Report on atmospheric air protection 2009

87. Schedule on calibration of Zuevskaya HPP measuring equipment, dated 12/01/2009

88. Schedule on calibration of Zuevskaya HPP measuring equipment, dated 23/12/2009
89. Scheme of fuel supply and location of workplaces TTC

90. Single-line scheme of rated recording equipment of Zuiv HPP

91. Statement of work performance for November 2008

92. Statement on commissioning of conveyor scales "Ermak VL 2-2», № 1757
93. Statement on size of turbine installation #2 average repair, 03.06.08-29.12.08
94. Statement on the verification of compliance with environmental legislation 12.04.2010-30.04.2010

95. Statement on the verification of compliance with environmental legislation 24.03.2009-14.04.2009

96. Statementf of commission for acceptance in a test operation of equipment. Unit № 1. 31.12.2009
97. Technical certificate #1 relabeling stationary steam boiler Pp-1000/255Zh (such as CCI-312A) station #2
98. Technical certificate #2 relabeling stationary steam turbine K-300-240-2 HTHZ station #2
99. Technical certificate #3 remarking TGW-300 turbo station #2

100. Technical certificate #4 relabeling TDTS-400000/330 block transformer station #2
101. Technical description and instruction manual of railroad scales 1959 TS-200V
102. Techno-economic performance equipment for TPP Zuevskaya 01.2009-01.2009. Form 3-tekh

103. Techno-economic performance equipment for TPP Zuevskaya 01.2009-12.2009. Form 3-tekh
104. Techno-economic performance equipment for TPP Zuevskaya 02.2009-02.2009. Form 3-tekh
105. Techno-economic performance equipment for TPP Zuevskaya 03.2009-03.2009. Form 3-tekh
106. Techno-economic performance equipment for TPP Zuevskaya 04.2009-04.2009. Form 3-tekh
107. Techno-economic performance equipment for TPP Zuevskaya 05.2009-05.2009. Form 3-tekh
108. Techno-economic performance equipment for TPP Zuevskaya 06.2009-06.2009. Form 3-tekh
109. Techno-economic performance equipment for TPP Zuevskaya 07.2009-07.2009. Form 3-tekh
110. Techno-economic performance equipment for TPP Zuevskaya 08.2009-08.2009. Form 3-tekh
111. Techno-economic performance equipment for TPP Zuevskaya 09.2009-09.2009. Form 3-tekh

112. Techno-economic performance equipment for TPP Zuevskaya 10.2009-10.2009. Form 3-tekh
113. Techno-economic performance equipment for TPP Zuevskaya 11.2009-11.2009. Form 3-tekh
114. Techno-economic performance equipment for TPP Zuevskaya 12.2009-12.2009. Form 3-tekh

115. Telephoned number 15 of 12/26/2009. Composition of gas from 11/24/2009

116. Certificate on a statment of electric measuring equipment calibration. Olga Hodich
117. Certificate on a statment of electric measuring equipment calibration. Tetyana Savina

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/ Denis Jyvykh – deputy Chief of PTO;

/2/ Valentyna Zozulya – Chief of ecology department

/3/ Genadiy Usachov – Chief of tests and measurements laboratory;

/4/ Vladimir Kostoglotov – Chief of OPPR area

/5/ Natalia Yurchyk – engineer II category fuel and oil laboratory

/6/ Oleksiy Levitskiy – lead specialist of OEZS and KS department

/7/ Oleksandr Oleinik – Chief of OEZS and KS department

/8/ Vitaliy Pitko – Lead engineer

/9/ Andrey Klimenko – Chief of OSPR

/10/ Alexey Doumik - Senior JI Consultant

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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 Units 1, 2, 3 and 4 at Zuyevska Thermal Power Plant" No.1231/23/7 dated 19/08/2010 issued by National Environmental Investment Agency of Ukraine. A Letter of Approval for Joint	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		Implementation Project "Reconstruction of Units 1, 2, 3 and 4 at Zuyevska Thermal Power Plant" No.2009JI22 dated 07/01/2010 issued by the Ministry of Economic Affairs, the Netherlands.			
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	N/a	N/a	OK
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?	CL1: In MR provided references on PDD version 2.6. Please provide references on last version of PDD. CAR1: In section A.7 of MR mentioned that no deviations or revisions to the	**CL1:** corrected in MR ver2.0. **CAR1:** Amount of emissions reduction in year 2009 in PDD (105 359 tons CO_2) differs from the one in MR (97 297 tons CO_2). This	The issue is closed. The issue is closed.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		registered PDD are made or intended. But amount of emission reduction in registered PDD and provided MR is different. Please explain and correct it.	difference occurred due to the fact that in PDD emissions reduction for the year 2009 was calculated based on forecasted amount of power supplied by TPP to the grid (6 210 000 MWh). Actual amount of power supplied to the grid in 2009 was lower: (4 846 530 MWh). Despite better than expected in PDD fuel efficiency in 2009 (351.89 g.c.e./kWh instead of PDD estimate 353.0 g.c.e./kWh) it resulted in decrease of emissions reduction in the MR as to compare with the registered PDD. It is not a deviation from registered PDD. Description is added in MR ver2.0.		
		CAR2: Unit #1 is not commission yet. It operated only in testing regime. Please specify this in MR.	**CAR 2**: Information on unit #1 has been added in MRver2.0 section A.6.	The issue is closed.	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		CAR3: Calculations that provided in MR don't separate effect from units reconstruction and effect from other reconstructions (lake as reconstruction of water cooling tower). If other reconstructions are project activity it must be mentioned in PDD, if no please this reconstructions from calculations.	**CAR3**: As stated in PDD A.4.3 *"The main objective of the proposed project is to increase the fuel efficiency of the existing Zuyevska TPP through its reconstruction. The reconstruction involves scheduled modernisation of main and auxiliary equipment of all four TPP units over 2008-2011."* During the sequential reconstruction off all four units of TPP within the period 2008 to 2011 the reconstruction of main as well as auxiliary equipment takes place. Cooling tower (one common for all four units) is regarded as auxiliary equipment as it is a part of cooling system for each of the units. To ensure that emission reduction units are not claimed for the activities realized prior to the	The issue is closed.	

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			beginning of the proposed project the baseline was set using historical data on plant's efficiency for 7 years before the project start date. Thus, if any reconstruction of auxiliary equipment had been executed prior to the project start, the baseline would be 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 01.01.2009 – 31.12.2009. FAR1: Please photograph every stages of unit reconstruction.	**FAR1:** Will be implemented in next periodic MR.	N/a	OK
Compliance with monitoring plan					
94	Did the monitoring occur 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?	FAR2: Please make sure that all journals and logbooks of fuel consumption and power generation will archiving and	**FAR2:** Will be taken into account. For ensuring data storage a plant order on data keeping will be issued by the end of 2010. Next periodic MR will have a reference to this document.	N/a	OK

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		saving during Project period.			
		CAR4: Please provide in MR data concerning environmental impacts that collected by ecology department of Zuevskaya TPP (like as 2-TP form).	**CAR 4:** Included in B.2.6. in MR ver2.0	The issue is closed.	
		CL3: Please clarify in MR section B.3 responsible persons of collection and archiving parameters.	**CL3:** Responsible person is identified in section B.3. of MR ver2.0.	The issue is closed.	
		CAR5: PTO department but not by process department collected and	**CAR5**: corrected in MR version 2.0.	The issue is closed.	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		archived necessary data. CL4: Please clarify in MR (Figure 2: Data collection and processing for monitoring at Zuyevska TPP) what is mean MP. CAR6: Global Carbon but not DTEK or station staff collected IPCC data. Please explain and correct this.	**CL4:** Misprint MP has been corrected to Monitoring Report in MR ver2.0. More detailed chart is provided. **CAR 6:** Corrected in Figure 2 in MR ver2.0. Role of Global Carbon is described.	The issue is closed. The issue is closed.	
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 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?	CL5: Please mentioned and described 3 TECH form in MR.	**CL5:** Purpose and brief content of 3-TEH reporting form is provided in MR ver2.0 Section B.	The issue is closed.	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of	Yes, data sources used for	N/a	N/a	OK

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	net removals clearly identified, reliable and transparent?	calculating emission reductions or enhancements of net removals are clearly identified, reliable and transparent			
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 justified of the choice	N/a	N/a	OK
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	N/a	N/a	N/a	N/a

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	maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?				
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
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	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
	regulations for the establishment of monitoring plans?				
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
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

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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 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?	N/a	N/a	N/a	N/a

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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 submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/a	N/a	N/a	N/a
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