VERIFICATION REPORT

CTF CONSULTING LLC (SUBSIDIARY OF CARBON TRADE & FINANCE SICAR S.A.)

VERIFICATION OF THE "IMPLEMENTATION OF ARC-FURNACE STEELMAKING AT MAGNITOGORSK IRON AND STEEL WORKS"

BUREAU VERITAS CERTIFICATION

REPORT NO. RUSSIA-VER /0048/2010

REVISION NO. 02

VERIFICATION REPORT

Date of first issue:	Organizational unit:
13/10/2010	Bureau Veritas Certification
Client:	Client ref.:
CTF Consulting, LLC	Mr. K. Myachin

Summary:
Bureau Veritas Certification has been commissioned by CTF Consulting, LLC (subsidiary of Carbon Trade & Finance SICAR S.A.) to carry out the initial and 1st periodic verification of GHG emission reduction by the JI project "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works" (sectoral scope 09), based on UNFCCC criteria for the JI, as well as criteria given to ensure 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 proposed Joint Implementation project envisages a complex resource-saving effect from the transition to the technology of production of profiled steel in the electric arc furnaces (EAF) and its teeming in the continuous casting machines (CCM) instead of production of the same steel and profiled billet in the open-hearth plant and blooming mill plant. Electric steelmaking process in EAFP and further teeming in CCM is a resource-saving technology, which allows at the same output rate to save the carbon-containing materials and fuels – coking coal, coke, pig iron, natural gas compared to the conventional OHFP process with ingots teeming.

The verification covers the period from January 1st 2008 to December 31st 2009.The verification is carried out as a combined Initial and 1st Periodic Verification. A risk-based approach has been followed to perform the verification. In the course of verification, 6 Corrective Action Requests (CAR),1 CL (Clarification Request) were raised and successfully closed during the 1st Periodic Verification. 6 Forward Action Request (FAR) were left open till the next Periodic Verification.

The verification is based on the Monitoring Report (covers January 1st 2008 – December 31st 2009), the Monitoring Plan as set out in the determined PDD, Version 1.4 dated 15 January 2010, with insignificant deviations, justified by the project owners, and supporting documents made available to Bureau Veritas Certification by the project participant.

As a result of the Initial Verification, the Bureau Veritas Certification confirms that the project is implemented as planned and described in the PDD, the installed equipment runs reliably and is calibrated appropriately, the monitoring system is in place and functional. The project is ready to continuously generate emission reductions.

As a result of the 1st Periodic Verification, the Bureau Veritas Certification confirms that the GHG emission reductions are calculated without material misstatement in conservative and appropriate manner. Bureau Veritas Certification herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as of 2,120,856 tones CO2-eq.

Report No.:	Subject Group:
RUSSIA/0048-2/2010	JI

Project title:
"Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works"

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Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification
BFP	Blast-Furnace Plant
BOFP	Basic Oxygen Furnace Plant
C	Carbon
CAR	Corrective Action Request
CCM	Continuous Casting Machine
CL	Clarification Request
CO_2	Carbon Dioxide
CTF	CTF Consulting, LLC (subsidiary of Carbon Trade & Finance SICAR S.A.)
DR	Document Review
DBSU	Double-Bath Steelmaking Units
EAF	Electric Arc Furnace
EIA	Environmental Impact Assessment
EMS	Environmental Management System
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Green House Gas(es)
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
I	Interview
IETA	International Emissions Trading Association
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
OJSC	Open Joint Stock Company
OHFP	Open-hearth furnace plant
PCF	Prototype Carbon Fund (World Bank Carbon Finance Unit)
PDD	Project Design Document
PP	Project Participant
tCO_2-e	tonnes CO_2 equivalent
UNFCCC	United Nations Framework Convention for Climate Change
VR	Verification Report

1 INTRODUCTION

CTF Consulting, LLC has commissioned Bureau Veritas Certification to carry out the initial and 1st periodic verification of GHG emission reduction by the JI project "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works" (hereafter referred 'the project'). CTF Consulting, LLC (hereafter referred 'CTF') being Monitoring Report co-developer (together with OJSC "Magnitogorsk Iron and Steel Works", hereafter referred 'MMK') coordinated the monitoring and verification processes on behalf of the OJSC "Magnitogorsk Iron and Steel Works" (legal name of 'Magnitogorsk Iron and Steel Works').

This report summarizes the findings of the verification of the project, performed based on UNFCCC criteria, as well as criteria given to ensure 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 verifier has reviewed the GHG data collected for the period from January 1st 2008 to December 31st 2009.

1.1 Objective

The purpose of this verification is a combined Initial and 1st Periodic verification.

The objective of the Initial verification is to verify that the project is implemented as planned and described in the PDD, to confirm that the monitoring system is in place and fully functional, and to assure that the project will generate verifiable emission reductions.

The objective of the 1st Periodic verification is the review and ex post determination by the AIE of the GHG emission reductions. It includes the verification of the data given in the monitoring report by checking the monitoring records and the emissions reduction calculation.

1.2 Scope

The verification of this project is based on the Project Design Document Version 1.4 dated 15 January 2010, the Monitoring Report (covers the period of January 1st 2008 – December 31st 2009), the monitoring plan set out in the PDD Section D and Annex 2, supporting documents made available to Bureau Veritas Certification, and information obtained through the on-site interviews and on-site assessment during the determination stage and an interview with the OJSC "Magnitogorsk Iron and Steel Works'' management and personnel involved in the monitoring and the CTF Consulting LLC consultant by means of teleconference on 18/08/2010. The documents and information are reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

Bureau Veritas Certification, based on the recommendations in the Validation and Verification Manual (IETA/PCF), has employed a risk-based approach in the verification, focusing on the

identification and reporting of significant risks and on reliability of project monitoring and generation of Emission Reductions Units (ERU).

The verification is not meant to provide any consulting towards the Client. However, stated requests for forward actions and corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 GHG Project Description

The Project Activity has been implemented in the city of Magnitogorsk, Chelyabinsk region, Russian Federation and involved construction of the Electric Arc-Furnace Plant (further referred to also as EAFP) at MMK to provide OJSC "Magnitogorsk iron and steel works" (hereafter called "MMK") with a complex resource-saving effect from the transition to production of profiled steel in the electric arc furnaces and its teeming in the continuous casting machines (further referred to also as CCM) instead of production of the same steel and profiled billet in the open-hearth plant (further referred to also as OHP) and blooming mill plant (further referred to also as BMP).

According to the project scenario MMK commissioned a new electric arc-furnace plant in 2006, which replaced the open-hearth furnace plant after the required reconstruction. The arc-furnace production cycle includes the following units: two high-capacity electric arc furnaces (EAF-180) manufactured by Austrian company "Voest-Alpine AG" with output capacity of 2 million tons of liquid steel per year each, out-of-furnace steel processing aggregates, one slabbing mill and two continuous casting machines manufactured by Austrian company "VAI" for production profiled billet. One DBSU was left to operate under partial load. Since the implementation of the proposed project MMK has not been using ingots teeming anymore because all liquid steel now comes through continuous casting.

The project boundary includes only production of the profiled steel billet which had been produced in the OHFP before the project implementation. Therefore the augmentation of liquid steel production due to higher capacity of EAFs (4 mln. tones of liquid steel totally) and presence of one DBSU in hot reserve is not accounted in the ERUs calculation because the baseline technology had no technical capability to produce slab steel billet.

Electric arc process requires high-voltage electricity and that is why electric arc furnaces are connected to the external grid only. External electricity is supplied by "Chelyabinsk Energy" – an affiliate of OJSC "Interregional distribution grid company of Urals", which is integrated into Unified Energy Systems of Urals. Electric arc furnaces are directly hooked up to the external power grid through a 220/35 kV electric power substation. All other industrial facilities (except LFA-3) are supplied with electricity from the closed-loop energy system of MMK, which has its own generating capacities (CHPP, CPP, SABPP, turbine section and heat recovery system of steam plant), and also receive energy from external power grid through several step-down substations.

Electric steelmaking process in EAFP and further teeming in CCM is a resource-saving technology, which allows at the same output rate to save the carbon-containing materials and

fuels – coking coal, coke, pig iron, natural gas compared to the conventional OHFP process with ingots teeming. It is assumed that production of profiled steel billet in the project and the baseline is equivalent and corresponds to the actual steel production according to the monitoring data.

The implementing company MMK is the largest full cycle metallurgy steelmaking enterprise in the Russian Federation. Its share in the sales of metal production on domestic market is about 20%. MMK begins with preparation of iron ore raw materials and ends up with advanced processing of ferrous metals. The company currently produces the largest mix of metal products among all ironworks of the Russian Federation and CIS countries. Considerable part of its products is exported to different countries. In 2008 MMK smelted 11,957,000 tons of steel and produced 11,522,000 tons of hot rolled metal. The output of commercial production of metals was 10,911,000 tons, which was 11% less than the record output, reached in 2007 (12,200,000 tons). The reduction in output was caused by overall recession in Russian metallurgy sector in the result of economic crisis.

For period from 1st of January 2008 to 31st of December 2009 there have been generated 2,120,856 tCO2-e, including:
- 1,699,581 tCO2-e in the period 01/01/2008 – 31/12/2008;
- 421,275 tCO2-e in the period 01/01/2009 – 31/12/2009.

.
The decision to proceed with the project was made taking into account the possibility of deriving revenues from selling the achieved reductions of GHG emissions.

2 METHODOLOGY

The verification of the project consisted of the following activities:

- On-site assessment and interviews held on 16/12-18/12/2009 at OJSC "Magnitogorsk iron and steel works" in the frame of determination stage and an interview with the OJSC "Magnitogorsk Iron and Steel Works'' management and personnel involved in monitoring and the CTF Consulting LLC consultant by means of teleconference on 18/08/2010;
- Publication of the 1st Monitoring Report on the BV site;
- Desk review of the 1st Monitoring Report and supporting documents;
- Preparation of the draft Initial Verification Protocol v.01 (Appendix A, Table 1);
- Preparation of the draft First Periodic Verification Protocol v.01 (Appendix A, Tables 2-5);
- Following communications with the project participant by phone and mails;
- Resolution of requests for corrective and forward actions;
- Preparation of the Verification Report v.01; issued on 08/10/2010;
- Internal Technical Review of the Verification Report v.01.
- Preparation of the Verification Report v.02; issued on 19/10/2010..

2.1 Verification Protocol

According to the Validation and Verification Manual (IETA/PCF) a verification protocol is used as part of the verification. 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 the study is expected to meet; and
- 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 verification protocol (IETA/PCF) consists of five tables. Table 1 relates to Initial Verification, Tables 2-5 to Periodic Verification. Different columns in these tables are described in Figure 1.

The completed verification protocol is enclosed in Appendix A to this report. Tables 3 and 4 are combined in one Table 3/4. Table 5 summarizes the verification findings.

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

Initial Verification Protocol Table 1			
Objective	**Reference**	**Comments**	**Conclusion (CARs/FARs)**
The requirements the project must meet.	Gives reference to where the requirement is found.	Description of circumstances and further comments on the conclusion.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance of the stated requirements. Forward Action Request (FAR) indicates essential risks for further periodic verifications.

Periodic Verification Protocol Table 2: Data Management System/Controls		
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**
The project operator's data management system/controls are assessed to identify reporting risks and to assess the data management system's/control's ability to mitigate reporting risks. The GHG data management system/controls are assessed against the expectations detailed in the table.	A score is assigned as follows: • Full - all best-practice expectations are implemented. • Partial - a proportion of the best practice expectations is implemented • Limited - this should be given if little or none of the system component is in place.	Description of circumstances and further commendation to the conclusion. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non compliance with stated requirements. The corrective action requests are numbered and presented to the client in the verification report. The Initial Verification has additional Forward Action Requests (FAR). FAR indicates essential risks for further periodic verifications.

Periodic Verification Protocol Table 3: GHG calculation procedures and management control testing		
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**
Identify and list potential reporting risks based on an assessment of the emission factor calculation procedures, i.e. • the calculation methods; • raw data collection and sources of	Identify the key controls for each area with potential reporting risks. Assess the adequacy of the key controls and eventually test that the key controls are actually in operation. Internal controls include (not exhaustive):	Identify areas of residual risks, i.e. areas of potential reporting risks where there are no adequate management controls to mitigate potential reporting risks Areas where data accuracy,

supporting documentation; • reports/databases/information systems from which data is obtained. Identify key source data. Examples of source data include metering records, process monitors, operational logs, laboratory/analytical data, accounting records, utility data and vendor data. Check appropriate calibration and maintenance of equipment, and assess the likely accuracy of data supplied. Focus on those risks that impact the accuracy, completeness and consistency of the reported data. Risks are weakness in the GHG calculation systems and may include: • manual transfer of data/manual calculations; • unclear origins of data; • accuracy due to technological limitations; • lack of appropriate data protection measures? For example, protected calculation cells in spreadsheets and/or password restrictions.	• Understanding of responsibilities and roles • Reporting, reviewing and formal management approval of data; • Procedures for ensuring data completeness, conformance with reporting guidelines, maintenance of data trails etc; • Controls to ensure the arithmetical accuracy of the GHG data generated and accounting records e.g. internal audits, and checking/ review procedures; • Controls over the computer information systems; • Review processes for identification and understanding of key process parameters and implementation of calibration maintenance regimes; • Comparing and analysing the GHG data with previous periods, targets and benchmarks. When testing the specific internal controls, the following questions are considered: 1. Is the control designed properly to ensure that it would either prevent or detect and correct any significant misstatements? 2. To what extent have the internal controls been implemented according to their design; 3. To what extent have the internal controls (if existing) functioned properly (policies and procedures have been followed) throughout the period? 4. How does management assess the internal control as reliable?	completeness and consistency could be improved are highlighted.

Periodic Verification Protocol Table 4: Detailed audit testing of residual risk areas and random testing		
Areas of residual risks	**Additional verification testing performed**	**Conclusions and Areas Requiring Improvement (including Forward Action Requests)**
List the residual areas of risks (Table 2 where detailed audit testing is necessary. In addition, other material areas may be selected for detailed audit testing.	The additional verification testing performed is described. Testing may include: 1. Sample cross checking of manual transfers of data 2. Recalculation 3. Spreadsheet 'walk throughs' to check links and equations 4. Inspection of calibration and maintenance records for key equipment	Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties should be highlighted. Errors and uncertainty can be due to a number of reasons: • Calculation errors. These may be due to inaccurate manual transposition, use of inappropriate emission factors or assumptions etc. • Lack of clarity in the monitoring plan. This could lead to inconsistent approaches to calculations or scope of reported data.

	• Check sampling analysis results • Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.	• Technological limitations. There may be inherent uncertainties (error bands) associated with the methods used to measure emissions e.g. use of particular equipment such as meters. • Lack of source data. Data for some sources may not be cost effective or practical to collect. This may result in the use of default data which has been derived based on certain assumptions/conditions and which will therefore have varying applicability in different situations. The second two categories are explored with the site personnel, based on their knowledge and experience of the processes. High risk process parameters or source data (i.e. those with a significant influence on the reported data, such as meters) are reviewed for these uncertainties.

Periodic Verification Protocol Table 5: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	**Ref. to checklist question in tables 2/3**	**Summary of project owner response**	**Verification conclusion**
If the conclusions from the Verification are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Tables 2, 3 and 4 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the verification team should be summarized in this section.	This section should summarize the verification team's responses and final conclusions. The conclusions should also be included in Tables 2, 3 and 4, under "Final Conclusion".

Figure 1 IETA/PCF Verification Protocol tables

2.2 Review of Documents

The preliminary and final Monitoring Reports and supporting documentation submitted by the project participants as well as additional background documents related to the project design and baseline, i.e. country Law, Kyoto Protocol, JI implementation guidelines, Project Design Document were reviewed.

The verification findings presented in this Verification Report v.1 relate to the project as described in the PDD Version 1.4 dated 15 January 2010, and the Monitoring Report for the period of January 1st 2008 - December 31st 2009, Version 1.0 dated 08 June 2010 as well as Version 1.1 dated 04 October 2010, Version 1.2 dated 13 October 2010, and Version 1.3 dated 18/10/2010 as the responses to CARs issued.

2.3 Follow-up Interviews

In the frame of Initial Verification, Bureau Veritas Certification verifiers conducted visits to the project site on 16/12-18/12/2009 (combined with determination) and on 21/06/2010 and an interview with the OJSC "Magnitogorsk Iron and Steel Works" management and personnel involved in monitoring as well as the with CTF Consulting LLC consultant by means of teleconference on 18/08/2010. On-site interviews with the project participant and inspection of the project and monitoring equipment were conducted to collect information needed for the

verification of emission reduction. Representatives of "MMK" and CTF Consulting, LLC were interviewed (see the list of interviewees in Section 6). The main topics of the interviews are summarized in Table 1.

Table 6. Interview topics

Interviewed organization	Date	Interview and/or inspected topics
OJSC "Magnitogorsk Iron and Steel Works", CTF Consulting, LLC	16/12-18/12/2009; 21/06/2010; 18/08/2010	➢ Status of project equipment ➢ Monitoring plan ➢ Deviations from the monitoring plan ➢ Requirements to competence ➢ Roles and responsibilities for data collection ➢ Training to monitoring procedures ➢ Data to be collected ➢ Measurement equipment (inspection, characteristics, status) ➢ Data logging ➢ Data archiving ➢ Data reporting ➢ Use of calculation tool ➢ Emission calculations ➢ Baseline emission factor ➢ Monitoring report verification and validation ➢ QC and QA procedures ➢ IT management ➢ EMS

2.4 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 calculation.

Findings established during the verification can either be seen as a non-fulfillment of criteria ensuring the proper implementation of the project or where a risk to deliver high quality ERUs is identified.

Corrective Action Requests (CAR) are issued, where:

i) there is a clear deviation concerning the implementation of the project as defined in the PDD;
ii) requirements set by the Methodological Procedure or qualifications in a verification opinion have not been met; or
iii) there is a risk that the project would not be able to deliver high quality ERUs.

Forward Action Requests (FAR) are issued, where:
iv) the actual status requires a special focus on this item for the next consecutive verification, or
v) an adjustment of the Methodological Procedure is recommended.

Clarification Request (CL) are issued, where:
vi) additional information is needed to fully clarify an issue. Not issued in this report.

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

3 VERIFICATION FINDINGS

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

1) Where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Corrective Action Request or Forward Action Request, respectively, have been issued. Corrective Action Requests and Forward Action Requests are referred, where applicable, in the following sections and are further documented in the Initial Verification Protocol (Appendix A, Table 1) and the First Periodic Verification Protocol (Appendix A, Table 2-5).

The verification of the project resulted in 6 Corrective Action Requests (CAR), 1 Clarification Request (CL), and 6 Forward Action Requests.

2) In the context of Forward Action Requests, risks have been identified, which may endanger the delivery of high quality ERUs in the future, i.e. by deviations from standard procedures as defined by the Monitoring Methodology. As a consequence, such aspects should receive a special focus during the next consecutive verification. A FAR may originate from lack of data sustaining claimed emission reductions. Forward Action Requests are understood as recommendation for future project monitoring; they are stated, where applicable, in the following sections and are further documented in the Initial Verification Protocol, Appendix A (Table 1).

6 Forward Action Request (FAR 01-06) are left open till the next Periodic Verification.

3) The final verification team conclusions for verification subject are presented.

Requests for actions and clarifications from the Initial and 1st Periodic verification are summarized in Appendix A Table 5. Verification trials during the Periodic Verification are listed in Appendix A Table 3/4 Column "Additional verification testing performed".

The verification findings relate to the project operation as documented and described in the Monitoring Report.

3.1 Initial Verification Findings

3.1.1 Remaining issues, CAR's, FAR's, CL's from previous verification

CAR 01 (pending approval by Host Party) from Determination Report remained open.

Please also refer to the verifier's Note:

"JISC Glossary of JI terms/Version 01 defines the following:
(b) At least one written project approval by a Party involved in the JI project, other than the host Party(ies), should be provided to the AIE and made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines, at the latest.

So far there is no clarity as to how the above JISC requirement will be fulfilled under Track 1.

3.1.2 Project Implementation

The project intends to undergo a multi-stage reconstruction of the existing Open-Hearth Furnace Plant (OHFP) followed by transition to production of profiled steel in the electric arc furnaces (EAF) and its teeming in the continuous casting machines (CCM) instead of production of the same steel and profiled billet in the open-hearth plant (OHP) and blooming mill plant with some temporary steel output reduction.

On the day of the verification visit, all the equipments, i.e., two high-capacity electric arc furnaces (EAF-180) manufactured by Austrian company "Voest-Alpine AG" with output capacity of 2 million tons of liquid steel per year each, out-of-furnace steel processing aggregates, one slabbing mill and two continuous casting machines manufactured by Austrian company "VAI" for production profiled billet were installed and one Double-Bath Steelmaking Units (DBSU) was left to operate under partial load.

During the monitoring period, no changes were made to the operational equipment.

The starting date of the crediting period did not change and remained the 1st January 2008.

The Monitoring System is in place and operational. Monitoring of GHG emission reductions was carried out as per the Monitoring Plan with insignificant deviations in MR Section B.3 and Section C being in line Guidance on criteria for baseline setting and monitoring Version 02 para 40. To improve transparency of the monitoring plan a management structure of monitoring process parameters as per PDD Section D.3 was amended in the monitoring report due to the installed corporate procedures for the monitoring process, which are planned to install in 2010. Some adjustments and deviations were made in the monitoring

plan presented in section D of PDD, version 1.4 dated January 15, 2010 (refer to Section C of the monitoring report). The changes have been made for the adaptation of the monitoring plan to the actually existing situation. The other monitoring parameters and calculation formulae are in compliance with PDD.

The verifier positively determined these deviations as appropriate to the project conditions.

Outstanding issues related to the Project Implementation, PP's responses and BV Certification's conclusions are summarized in Appendix A Table 5 (refer to CAR 01 - CAR 04).

3.1.3 Internal and External Data

The measured internal data included mass and volume content flow rates of raw materials, products, and fuels, chemical composition, and electric energy.

The collected data (measured, estimated, and calculated) are presented in MR Sections D.1 – D.7, where deviations from PDD Monitoring Plan are introduced, and Excel files with calculations.

These data and relevant monitoring points are defined as per PDD Sections D.1 – D.1.4 as follows:

- CO2 emission from metallurgical conversions within the project boundaries (using carbon balance method);
- specific CO2 emission per ton of coke, pig iron and steel billet (profiled and slab all together);
- consumption of pig iron and scrap metal for production of one ton of steel billet and consumption of metallurgical coke per one ton of pig iron;
- project CO2 emission from metallurgical conversions during production of profiled steel billet using defined specific values and coefficients;
- CO2 emission coefficients during generation of electricity and air blast at MMK, and project emissions during consumption of electricity in EAFP and consumption of air blast in BFP required for production of the profiled steel billet.
- total project CO2 emissions associated with production of profiled steel billet are summarized.

During the monitoring period, there were no changes in the measurement equipment, except carbon analyzer LECO SC144DR in BPCP laboratory. The values of carbon mass content in coal charge (dry weight), values of carbon content in metallurgical coke (dry weight) were calculated as monthly average value of February 2009-December 2009 due to replacing of the old measuring device on a new one (carbon analyzer LECO SC144DR), which entailed the development and approval of new measurements methodologies and staffed training.

The verifier positively determined these deviations as appropriate to the project conditions (refer to Section 3.1.2 above, response to CAR 02).

The consumption of production inputs, raw materials, energy resources, and the output of commercial products are routinely monitored by 'MMK' applying the system of factory monitoring and reporting. These parameters are measured in accordance with applicable standards and rules in the iron and steel industry of Russia as well as international standards (OJSC "MMK" is certified to ISO 9001 and ISO 14001 standards).

All required parameters are available within the production monitoring and reporting system of Magnitogorsk Metallurgical Works and thus associated procedure for monitoring of CO2 emissions does not require any additional changes or improvements in the existing system.

Default data used have been described and determined in PDD Section D.1 Table D.1-1, page 33 and Annex 2. They are also explained in PDD Section D.1.2.2 and in MR Section B.2, Tables B.2.1 and B.2.2.

The project uses a JI specific approach for determining baseline and project GHG emissions in accordance with paragraph 9 (a) of the "Guidance on criteria for baseline setting and monitoring" (Version 02).

Methodological approach applied for calculation of the CO2 emissions by carbon balance method is in line with Tier 3 approach described in Section 4.2.2 of Chapter 4 of "2006 IPCC Guidelines for National Greenhouse Gas Inventories" (IPCC Guidelines 2006). This approach was complemented with monitoring of CO2 emission factor for generation of electricity at MMK own power plants, CO2 emissions due to consumption of electricity in EAFP, CO2 emissions from generation and consumption of air blast in blast furnace plant.

The verifier checked the appropriateness of default and measured internal data, the state of monitoring equipment, the calibration procedures, data control, and assessed the qualification of personnel.

Outstanding issues related to Internal and External Data are summarized in Appendix A Table 5 (refer to CL 01 and responses to CAR 01-04 in Section 3.1.2 above).

3.1.4 Environmental Indicators

Information on the collection and archiving of information on the environmental impacts of the project of OJSC "MMK" is carried out in accordance with environmental legislation requirements, as envisaged in the PDD Monitoring Plan and MR Section B.1. The existing environmental management system is certified to ISO 14001 and ensures monitoring of air, soil and body of water pollution.

Project implementation is associated with changes in the volumes of generation of the following types of waste: scrubber sludge from purification of technological gas, bulk steel

scrap, mercury lamps, abrasive dust, calcines and remnants of steel electrodes, waste abrasive disks, waste circuit-breaker oil, aspiration dust, mixed fiber waste, waste industrial oils and rags.

Laboratory for Control of Air Quality of OJSC "MMK" performs environmental monitoring according to the monitoring schedule.

The technical solutions under the project reduce its environmental impacts and have the following effects:

- Compliance with environmental requirements, reduction of emissions of air pollutants;
- Prevention of pollution of water basins above the applicable environmental standards;
- Compliance with noise and vibration standards;
- Prevention of pollution of territory, surface and ground waters provided that the requirements for industrial waste storage, disposal and utilization are met.

Outstanding issue related to the Project environmental indicators, PP's response and BV Certification's conclusion are summarized in Appendix A Table 5 (refer to CAR 05).

3.1.5 Management and Operational System

OJSC 'MMK' maintains the certified Quality and Environmental Management Systems to ISO 9001 and ISO 14001. Corresponding standard operating procedures are in place and followed. The personnel responsible for the monitoring is trained in an appropriate manner.

The equipment of OJSC "MMK" used for emission monitoring is calibrated in accordance to technical requirements for measurement equipment maintenance.

Laboratory for Control of Air Quality of OJSC "MMK" performs environmental monitoring according to the monitoring schedule.

Outstanding issues related to Management and Operation System, PP's responses and BV Certification's conclusions are summarized in Appendix A Table 5 (refer to FAR 01- FAR 06).

FARs 01-06 are left open till the next Monitoring Report.

3.2 Periodic Verification Findings

The project envisaged, under the modernization program, the construction of a new electric arc-furnace plant in 2006 to replace the existed open-hearth furnace plant and, thus, the transition to production of profiled steel in the electric arc furnaces and its teeming in the continuous casting machines (CCM) instead of production of the same steel and profiled billet in the open-hearth plant and blooming mill plant.

Under the project two high-capacity electric arc furnaces (EAF-180) manufactured by Austrian company "Voest-Alpine AG" with output capacity of 2 million tons of liquid steel per year each, out-of-furnace steel processing aggregates, one slabbing mill and two continuous

casting machines manufactured by Austrian company "VAI" for production profiled billet were installed and one Double-Bath Steelmaking Units (DBSU) was left to operate under partial load.

The project has been realized within the project boundaries which include (refer to MR, Section BB.2, Diagram B.2.1, and B.2.2):

- Metallurgical conversion production works: by-product coke plant, blast-furnace plant, EAFP (or OHFP and BMP in the baseline scenario);
- Own power generation capacities of MMK: Combined heat power plant (CHPP), Central power plant (CPP), Steam-air blowing power plant (SABPP), turbine section in the steam plant, gas recovery section in the steam plant;
- Unified energy system of Urals.

Project implementation is associated with changes in the volumes of generation of the following types of waste: scrubber sludge from purification of technological gas, bulk steel scrap, mercury lamps, abrasive dust, calcines and remnants of steel electrodes, waste abrasive disks, waste circuit-breaker oil, aspiration dust, mixed fiber waste, waste industrial oils and rags.

The monitoring plan does not specify any specific environmental or social indicators to be monitored for the success of the project activity. All routine environmental measures taken at OJSC "MMK" ensure fulfillment of local legal requirements. Social impact of the project is not identified. This is beyond JI mechanism.

3.2.1 Completeness of Monitoring

The realized monitoring of the project is complete, effective and reliable and overall in accordance with monitoring plan contained in the determined PDD. The deviations from the monitoring plan are duly addressed in the Monitoring Report Section B.3 and Section C (refer to the Initial Verification in Section 3.1.2 above).

To improve transparency of the monitoring plan a management structure of monitoring process parameters as per PDD Section D.3 was revised in the monitoring report. Some adjustments and deviations were made to the monitoring plan presented in section D of PDD, version 1.4 dated January 15, 2010 (refer to Section C of the monitoring report). The changes have been made for the adaptation of the monitoring plan to the actually existing situation. The other monitoring parameters and calculation formulae are in compliance with PDD.

The verifier positively determined the proposed revisions (refer to Section 3.1.2 above) as such improving the accuracy and 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 (refer to Guidance on criteria for baseline setting and monitoring, Version 02, para 40).

The relevant emission sources are duly covered by the monitoring plan. The boundaries of the project are defined correctly and transparently.

All pertinent parameters were monitored and determined as prescribed. The collected data were stored during the whole monitoring period (till 01.01.2015 in fact)

The monitoring methodologies and sustaining records were sufficient to enable verification of emission reductions. During the verification process, no significant lacks of evidence were detected. The data gathering and reporting procedures, which were described in the MR and examined during the on-site visit, were found appropriate to reflect the ones defined by the original monitoring plan.

Outstanding issues related to Completeness of Monitoring, PP's responses and BV Certification's conclusions are summarized in Appendix A Table 5 (refer to FAR 01 - 06 from the Initial Monitoring Report).

FARs 01 - 06 are left open till the next Monitoring Report.

3.2.2 Accuracy of Emission Reductions Calculation

The method used for emission reduction calculation is the derivative of the applied JI specific approach in accordance with paragraph 9 (a) of the "Guidance on criteria for baseline setting and monitoring" (Version 02).

Methodological approach applied for calculation of the CO2 emissions by carbon balance method is in line with Tier 3 described in Section 4.2.2 of Chapter 4 of "2006 IPCC Guidelines for National Greenhouse Gas Inventories" (IPCC Guidelines 2006). This approach was complemented by monitoring of CO2 emission factor for generation of electricity at MMK own power plants, CO2 emissions due to consumption of electricity in EAFP, CO2 emissions from generation and consumption of air blast in blast furnace plant.

All used data was of a high quality to assure accurate calculation. It is evidenced that the whole monitoring system was fully operational during the entire monitoring period. The calibration results ensure the correct functionality of all the relevant measuring equipment. The verifier received access to all relevant documentation needed to verify the emission reduction calculation. All used information was traceable and appropriately archived.

The verifier confirms that emission reduction calculations have been performed according to the determined monitoring plan and to the own calculation method reported in the MR in accordance with the PDD. The verifier checked the transfer of monitored data sets to spreadsheets used by PP, correctness of the formulae versus the PDD, programming of formulae and connections, as well as calculations of emission reductions. No inaccuracies in calculations were detected by the verifier. The calculation excel tool was checked by the verifier and no flaws were found.

Outstanding issue related to the accuracy of emission reduction calculation, PP's response and BV Certification's conclusion are summarized in Appendix A Table 5 (refer a response to CAR 05 in IVR).

3.2.3 Quality of Evidence to Determine Emission Reductions

The evidences that were obtained by the verification team in order to provide confidence in the provided emission reduction calculation, such as:

- The company management and operational system for GHG emission monitoring and reporting is based on certified integrated management system in accordance to ISO 9001 and ISO 14001
- Maintained and calibrated measuring equipment
- The present-day metrological control
- Automatic data acquisition system
- Reliable IT
- Procedures for protection and back up of electronic and paper data
- QC and QA procedures
- Clear allocation of responsibilities and authorities
- Competence and commitments of personnel
- Use of excel spreadsheets
- Implementation of data traceability
- Checking of transfer of formulas and algorithms into excel
- Review for adequacy of any excel spreadsheet
- Verification of data handling by Senior Managers
- Checks for consistency and adequacy of calculations and data in the final MR
- Validation of the MR by the OJSC "MMK" top manager Y.Bodyaev
- Appropriate archiving system
- Reliable OJSC "MMK" production data for reduction of GHG emission process

are observed as consistent and to high quality. All used parameters were of sufficient and appropriate quality to assure an accurate monitoring.

3.2.4 Management System and Quality Assurance

To ensure quality of project operation and monitoring a certified integrated management system in accordance to ISO 9001 and ISO 14001 is used.

To ensure quality of project operation and monitoring an efficient Management and Operation System is developed and maintained as discussed as a part of the Initial Verification in Section 3.1.5 above.

FAR 01 - 06 were issued to ensure more efficient Management and Operation System for GHG emission reduction monitoring. It will be developed and maintained as a new Corporate Standard, as discussed at the site visit, as a part of the Initial Verification in Section 3.1.5 above.

Outstanding issues related to Conformance with monitoring methodology were issued in Appendix A Table 5 (refer a response to FAR 01 - FAR 06 from the Initial Monitoring Report).

FARs 01-06 are left open till the next monitoring.

4 PROJECT SCORECARD

Risk Areas		Conclusions			Summary of findings and comments
		Baseline Emissions	Project Emissions	Calculated Emission Reductions	
Completeness	Source coverage/ boundary definition	✓	✓	✓	All relevant sources are covered by the monitoring plan and the boundaries of the project are defined correctly and transparently.
Accuracy	Physical Measurement and Analysis	✓	✓	✓	State-of-the-art technology is applied in an appropriate manner. Appropriate back-up solutions are provided.
	Data calculations	✓	✓	✓	Emission reductions are calculated correctly.
	Data management & reporting	✓	✓	✓	Data management and reporting were found to be satisfying. Potential for improvement are indicated by open FARs 01 -06.
Consistency	Changes in the project	✓	✓	✓	Results are consistent with underlying raw data.

5 VERIFICATION STATEMENT

Bureau Veritas Certification has been commissioned by CTF Consulting, LLC (subsidiary of Carbon Trade & Finance SICAR S.A.) to carry out the initial and 1st periodic verification of the JI project "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works" (sectoral scope 09), based on UNFCCC criteria for the JI, as well as criteria given to ensue 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 covers the period from January 1st 2008 to December 31st 2009.

The purpose of this project is to envisage a complex resource-saving effect from the transition to the technology of production of profiled steel in the electric arc furnaces (EAF) and its teeming in the continuous casting machines (CCM) instead of production of the same steel and profiled billet in the open-hearth plant and blooming mill plant.

Electric steelmaking process in EAFP and further teeming in CCM is a resource-saving technology, which allows at the same output rate to save the carbon-containing materials and fuels – coking coal, coke, pig iron, natural gas compared to the conventional OHFP process with ingots teeming.

The verification is carried out as a combined Initial and 1st Periodic verification. A risk-based approach has been followed to perform the verification. In the course of verification, 5 Corrective Action Requests (CAR), 1 Clarification Request (CL), and 6 Forward Action Requests (FAR) were raised. The CAR's and CL were successfully closed. Six FAR's are left pending until the next periodic monitoring.

The verification is based on the Monitoring Report (covers January 1st 2008 – December 31st 2009) with supporting documents and the Monitoring Plan as set out in the determined PDD Version 1.4 dated 15 January 2010, with minor deviations related to the monitoring plan which are described and justified by the project participant in the MR and positively determined by Bureau Veritas Determination, in line with Guidance on criteria for baseline setting and monitoring, Version 02, para 40. 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.

As a result of the Initial verification, Bureau Veritas Certification confirms that all operations of the project are implemented as planned and described in the PDD, the installed equipment runs reliably and is calibrated appropriately, the monitoring system is in place and functional. The project is ready to continuously generate GHG emission reductions.

As a result of the 1st Periodic Verification, Bureau Veritas Certification confirms that the GHG emission reductions are calculated without material misstatement in conservative and appropriate manner.

Bureau Veritas Certification herewith confirms that the project has achieved GHG emission reductions in the above mentioned reporting period as of 2,120,856 tCO2-e, including:
- 1,699,581 tCO2-e in the period 01/01/2008 – 31/12/2008;
- 421,275 tCO2-e in the period 01/01/2009 – 31/12/2009.

Bureau Veritas Certification

Vera Skitina - Lead Verifier
13/10/2010

6 REFERENCES

Reviewed documents available before the audit on site

1	Monitoring Report and Excel Spreadsheets for 2008 and 2009 on JI project "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works" for monitoring period 01.01.2008 – 31.12.2009: - Version 1.0 dated 08/06/20010; - Version 1.1 dated 04/10/2010; - Version 1.2 dated 13/10/2010; - Version 1.3 dated 18/10/2010.
2	"Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works", PDD Version 1.1 dated 10/11/2009. Received on 10/11/2009. Published on UNFCCC site 25/11/2009. PDD Version 1.4 dated 15/01/2010. Received on 15/01/2010.
3	Excel spreadsheets for 2008 and 2009 with calculation of emission reduction.
4	Reporting forms with monitoring data from OJSC "MMK"
5	Standard for applying the concept of materiality in verifications. JISC, 22-th Meeting Report, Annex 1.
6	Procedures regarding changes during project implementation. JISC, 22-th Meeting Report, Annex 2.

Documents obtained at the site on 16/12/2009 - 18/12/2009 and 21.06.2010

7	Technical Protocol of the conference concerning energy industry reforming and forthcoming Kyoto Protokol by the State Duma of RF ratification, dated 07/10/04
8	A Register of potential JI Projects available at MMK dated 16/05/05
9	A Register of OHP reconstruction arrangement and EAFP designing at MMK (stage before investment decision)
10	Input financial data for of the OHP reconstruction arrangement and EAFP designing at MMK (stage before investment decision)
11	A pre-assessment calculation financial data for the OHP reconstruction arrangement and EAFP designing with total steel output of 4 mln. t yearly at MMK (stage before investment decision)
12	The baseline assessment data for emission reduction assessment values due to potential JI project available at MMK, dated 25/09/2008
13	A long term invest programme of OAO MMK for 2004-2013
14	Letter of Mr. V. F. Rashnikov, Director General of OJSC «MMK» to State Duma of the Russian Federation, dated 17.11.2004
15	Technical Protocol of the meeting held at First Deputy General Director about forthcoming changes in RF Environmental legislation due to forthcoming Kyoto Protokol by the State Duma of RF ratification
16	Order # 440 "About EAFC in EAFP contraction with total steel output of 4 mln. t yearly at MMK", dated 22/06/04
17	Arrangement #AM-21 dated 23/03/05 "About Working Group creation"

18	The Order and Annex 2 to the Order #635 dated 22.11.02 "About Working Group for OHP reconstruction
19	Conclusion issued by State Regional Committee as the unit tariff administrative tribunal about the fixed tariff data for the electricity consumed by OOO MMK, dared 2003
20	Environmental Action Plan "MMK", actual till 2015
21	Positive State Opinion on the the Working Design Project "OAO "MMK" OHP Complex. Reconstruction. #394 dated 06/07/2004
22	Positive State Opinion on the the Working Design Project "OAO "MMK" OHP Production reconstruction. #130 dated 31/05/2006
23	The Environmental Impact Assessment (OVOS)
24	Environmental permissions and limits issued for "MMK" by Interregional Department of Rostekhnadzor for Ural Federal Okrug for BFP, OHFP, and EAFP. All valid on the date of the site visit.
25	State statistic environmental form 2-tp (air) of "MMK" in 2006, 2008.
26	Schedule for the Electric Furnace Steel-smelting Complex (EAFP) construction & setting into operation at the planned technical capacity.
27	Technical Data of the steel output volumes at EAFP and OHP aggregates in the year 2009
28	Technical Guidance on the planned maintenance of the machinery in the iron and steel industry in Russian Federation.
29	Monthly Technical Reports of OHF, EAFP, BFP of "MMK", 2009.
30	Technical Data for carbon contents in production & technological gases used at MMK
31	Technical Data for electricity generation and consumption at production of MMK for 2005-2007
32	Technical Data for chemical compositions of charging materials, pig and pig iron, steel output, slag, dust, agglomerate and other raw materials, used for the baseline and project calculation (2002 and 2007)
33	A technological flow diagram of EAFP, OHP,
34	Data for emission reduction at OHP (EAFP) calculated based on CNIIChermet Methodology (RF research scientific institute) for 1988-2007
35	Gross and specific polluting substances emission at OHP (EAFP) calculated for 2002-2012
36	Gross main polluting substances emission at OHP (EAFP) calculated for 2002-2012
37	Graphical data of energy intensity of production at MMK for 1996-2008
38	Attachment 1&2 to the Contract (the project design) "MMK/Russia 180toEAF Project 2622. Basic Design Data and Process description. Projectterminplan
39	A production Programme for BOFP. December 2009
40	Technological Instruction TI 101-CN-EAFP – 64 – 2007 with changes ##1-7
41	A heat log 89603 at DBSU #32 dated 17/12/2009
42	A contract between RUP "Belorussian Metallurgical Plant" and OAO "MMK" to train

	technological personnel (26 persons), dated 2005
43	Internal Letter #116/SGO dated 29/09/2009 "About verification of the PDD (the project) with regard to the invest analysis results"
44	Data of production cost in MMK for 1-26/10/2009
45	Data of production cost of the steel (OHP) with two DBSUs for 2003
46	Data of production cost of the steel after DBSU (OHP) in 2004 and estimated data with cost of the steel after DBSU (OHP) and additional treatment in two LFA's (baseline scenario)
47	A timetable for capital maintenance overhaul of the metallurgical aggregates of MMK in 2009
48	Rate of scrap prices time history in 2003-2004. Data produced by MMK Economic Department
49	Measuring appliances records of BFP, OHFP, EAFP
50	A timetables for the obligatory testing of the measuring instrument calibration) under service conditions of BFP, OHFP, EAFP
51	Training personnel records dated 17/12/09 (EAFP)
52	BFP indexes trend for 2002-2009
53	Records of the coke furnace batteries out for the 17th of 2009
54	Accreditation attestation issued by State Federal Agency for Technical Regulation and Metrology (GOST R) # ROSS RU.0001.512269 valid till 25.09.2012
55	Provisions or Environmental protection Laboratory of MMK #425/12-01 dated 27/11/2009
56	Order issued by CTF Consulting LLC "To approve Monitoring Procedure" dated 11/12/09
57	Document & Records Management Procedure applied to the project monitoring report issuing, ver.01 dated 11/12/09
58	Environmental licenses of MMK valid on the date of the site visit.
59	State formal note to follow Russian Environmental state regulations by "MMK" dated 16/01/2009
60	PD MMK 3-SSGO-01-2010 "Regulation on monitoring of GHG emissions reduction, created as a result of the realization of the project: "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works"
61	Control of documents and records procedure for GHG monitoring reports drawing up of the accounts. Carbon Trade &Finance LLC. Ver.01 dated 11.12.09
62	STO SMK 2-6.2-07-2009 «QMS. Personnel. Organization of the training of managers, specialists and clerks of OJSC "MMK" and persons not being the employees of OJSC "MMK"
63	STO SMK 2-6.2-08-2009 «QMS. Personnel. Organization of the training (professional retraining, retraining (getting of the second profession) of the workers of OJSC "MMK")
64	MMK 3-TU-05-2008 "Regulation on metrological service of OJSC MMK"
65	STO MMK 2-7.6-01.2008 "Quality Management System. Management of measurements and monitoring equipment. Main requirements and procedures"

66	Acceptance certificate # 16-07 of construction completion of Electric Arc Furnace Plant complex, April 2007
67	Acceptance certificate of construction completion of section steel billet Continuous Casting Machines #1, #2, one Ladle-Furnace Aggregate and one Steel Refining Aggregate, August 2004

Persons interviewed on 16-18/12/2010 and 16/08/2010:

1	R. Takhautdinov – The Strategy Development & Metallurgy First Vice President
2	Y.Bodayev – Executive Director of MMK
3	A. Mitchin – Manager of Project Monitoring Department
4	O. Mel'nikova – Chief of Department for relations with state authorities and markets protection (JI project implementation coordinator)
5	S. Sidel'nikov – Chief of Centre of Energy Saving Technologies (CEST)
6	L. Koptsev – Chief of Central Laboratory of Control in structure of Scientific and Technological Center
7	I. Kutcherova – Manager of Technological department
8	K. Stroganov – Lead Specialist of Scientific and Technological Center
9	A. Bakhol'skiy – Lead Economist
10	A. Maslennikov – Senior Manager of Metallurgical Economics Group
11	E. Artamonova – Manger of Scientific and Technological Center
12	S. Komarov – Lead Engineer of Technological department
13	V. Borisenko – Lead Engineer of Technological department
14	A. Velikiy – Shop manager of the EAFP
15	Y. Dolgorukiy – Technological Deputy shop manager of the EAFP
16	A. Ovsyannikov – Economist of Metallurgical Economics Group
17	A. Saphin - Electric of the EAFP
18	E. Kravchenko - Metrologist of the EAFP
19	V. Zhuravlev– Lead Specialist of Metallurgical Economics Group of the BFP
20	V. Begilyuk - Technologist of the BFP
21	M. Semenyuk – Acting as Technologist of the BFP
22	M. Kontsov – Lead IT Specialist of the BFP
23	A. Elephirenko – Chief of Loading division of the BFP
24	O. Maevskiy – Lead Automatization Specialist of the BFP
25	I. Ivashkin – Acting as Senior Manager of the BPCP

26	N. Lutokhin – Senior Manager of Managing Production Group of the BPCP
27	O. Drobniy – Head of Environmental Protection Laboratory
28	V. Kozyulin – Deputy of Head of Environmental Protection Laboratory
29	E. Ptitsyn –Head of Air Protection Structure of Head of Environmental Protection Laboratory
30	V. Panin – Chief Metrologist
31	L. Ivanova – Lead Metrologic Engineer
32	V. Chebotov – Acting as CEST
33	T. Olennikova – Head of Electricity Usage Laboratory
34	T. Korolova – Head of Fuel and Power Resources Accounting Devision
35	N. Korolev – Head of Automatization Department
36	A. San'ko – Deputy Manager of Economic Department
37	I. Bondyaev – Deputy Chief of Department for relations with state authorities and markets protection
38	K. Myachin – PDD developer, Carbon Projects Manager, CTF Consulting, LLC
39	S. Gryazeva– PDD developer, Lead specialist, CTF Consulting, LLC

7 DISCLAIMER

This report contains the results of the determination of whether the ensuing reductions of anthropogenic emissions by sources reported by the project participant meet the relevant requirements of Article 6 of the Kyoto Protocol and the JI guidelines. The used procedure complies with paragraphs 23, 36, 37 of JI guidelines with a reservation that the project approval by the host Party involved is pending. Based on this verification, Bureau Veritas Certification Holding SAS issues, under the contractual arrangements with CTF, an expert opinion on the emission reductions as envisaged by the RF Government Decree # 843 of 28/10/2009 "About measures on realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change".

APPENDIX A: COMPANY JI PROJECT INITIAL VERIFICATION PROTOCOL

Table 1 Initial Verification Protocol

Objective	Reference	Comments	Conclusion (CARs/FARs)
1. Opening Session			
1.1. Introduction to audits	N/A	In the frame of Initial Verification, Bureau Veritas Certification verifier conducted a visit to the project site on 16/12-18/12/2009 in the frame of determination stage and an interview with the OJSC "Magnitogorsk Iron and Steel Works" management and personnel involved in monitoring and the CTF Consulting, LLC consultants and as well by means of teleconference on 18/08/2010. On-site interviews with the project participant and inspection of the project and monitoring equipment were conducted to collect information needed for the verification of emission reduction. Prior to the audit, the questionnaire (verification protocols forms) and the audit programme were provided to the client. The opening meeting and interviews were performed in "MMK" 16/12-18/12/2009 followed by interviews with persons concerned and inspection of project implementation on the site. The installed equipment within the project boundary of "MMK", located in the city of Magnitogorsk, Russian Federation was visited, and technological and metering equipment was inspected. Participants of the opening meeting and interviews were: - V.Skitina - Bureau Veritas Certification Lead Verifier; - R. Takhautdinov – The Strategy Development & Metallurgy First Vice President; - A. Mitchin – Manager of Project Monitoring Department;	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		- O. Mel'nikova – Chief of Department for relations with state authorities and markets protection (JI project implementation coordinator); - K. Myachin - CTF Consulting, LLC (CTF), Carbon Projects Manager; - S. Gryazeva, CTF, Lead Specialist - S. Sidel'nikov – Chief of Centre of Energy Saving Technologies (CEST); - L. Koptsev – Chief of Central Laboratory of Control in structure of Scientific and Technological Center; - I. Kutcherova – Manager of Technological department. - K. Stroganov – Lead Specialist of Scientific and Technological Center; - A. Bakhol'skiy – Lead Economist; - A. Maslennikov – Senior Manager of Metallurgical Economics Group; - E. Artamonova – Manger of Scientific and Technological Center; - S. Komarov – Lead Engineer of Technological department; - V. Borisenko – Lead Engineer of Technological department; - A. Velikiy – shop manager of the EAFP; - Y. Dolgorukiy – Technological Deputy shop manager of the EAFP; - A. Ovsyannikov – Economist of Metallurgical Economics Group; - A. Saphin - Electric of the EAFP; - E. Kravchenko - Metrologist of the EAFP; - V. Zhuravlev– Lead Specialist of Metallurgical Economics Group of the BFP; - V. Begilyuk - Technologist of the BFP ; - M. Semenyuk – Acting as Technologist of the BFP; - M. Kontsov – Lead IT Specialist of the BFP; - A. Elephirenko – Chief of Loading division of the BFP; - O. Maevskiy – Lead Automatization Specialist of the BFP; - I. Ivashkin – Acting as Senior Manager of the BPCP	

Objective	Reference	Comments	Conclusion (CARs/FARs)
		- N. Lutokhin – Senior Manager of Managing Production Group of the BPCP; - O. Drobniy – Head of Environmental Protection Laboratory; - V. Kozyulin – Deputy of Head of Environmental Protection Laboratory; - E. Ptitsyn –Head of Air Protection Structure of Head of Environmental Protection Laboratory; - V. Panin – Chief Metrologist; - L. Ivanova – Lead Metrologic Engineer; - V. Chebotov – Acting as CEST; - T. Olennikova – Head of Electricity Usage Laboratory; - T. Korolova – Head of Fuel and Power Resources Accounting Devision; - N. Korolev – Head of Automatization Department; - A. San'ko – Deputy Manager of Economic Department; - I. Bondyaev – Deputy Chief of Department for relations with state authorities and markets protection.	
1.2. Clarification of access to data archives, records, plans, drawings etc.	N/A	The verifier received copies of all requested data, records, plans, procedures, instructions, documentation and reports.	OK
1.3. Contractors for equipment and installation works *Who has installed the equipment? Who was contracted for planning etc.?*		MMK signed a procurement contract with Austrian company "Voest-Alpine AG" on delivery of electric arc furnaces and a contract with Austrian company "VAI" on delivery of two section continuous casting machines №1 and №2 as well as two ladle-furnace aggregates. The arc-furnace production cycle includes the following units: two high-capacity electric arc furnaces (EAF-180) manufactured by Austrian company "Voest-Alpine AG" with output capacity of 2 million tons of liquid steel per year each, out-of-furnace steel processing aggregates, one slabbing continuous-casting machine (CCM #5) with capacity of 2 million tones/year of slab steel	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		billet and two section continuous casting machines manufactured by Austrian company "VAI" with total capacity of 2 mln. tones/year of profiled steel billet. One DBSU was left to operate under partial load. Auxiliary equipment is replaced during planned and preventive maintenance, regular inspections and execution of emergency requests, i.e. troubleshooting.	
1.4. Actual status of installation works *Project installation should be finished at time of initial verification in so far as the project should be ready to generate emission reductions afterwards.*	/66, 67/	The project envisages a complex resource-saving effect from the transition to production of profiled steel in the electric arc furnaces and its teeming in the continuous casting machines (CCM) instead of production of the same steel and profiled billet in the open-hearth plant and blooming mill plant. Project was commissioned in two stages: in 2004 the section Continuous Casting Machines (CCM) #1, 2 together with one Ladle-Furnace Aggregate and Steel Refining Aggregate were commissioned /67/ and in 2006 the EAF #1,2 were commissioned together with slab CCM. Officially the implementation of EAF plant was fully completed in April 2007 /66/. The project involves implementation of electric arc-furnace and continuous casting process instead of open-hearth process of steelmaking. It consists of the following basic stages: - Replacement of double-bath steelmaking units and conventional open-hearth furnaces by electric arc furnaces equipped by additional energy sources (gas-oxygen burners, oxygen tuyeres, tuyere injection of carbon-containing materials) - Out-of-furnace steel processing in "ladle-furnace" aggregates (LFA) and steel refining aggregate (SRA), further reconstructed to LFA - Casting of steel of profiled grades in section continuous casting	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		machines №1, 2, and casting of slab steel grades in the slabbing CCM (it is beyond the project boundaries). Continuous casting replaces ingots teeming and processing in the blooming mill plant. On the day of audit, all the equipments, i.e., two high-capacity electric arc furnaces (EAF-180) manufactured by Austrian company "Voest-Alpine AG" with output capacity of 2 million tons of liquid steel per year each, out-of-furnace steel processing aggregates, one slabbing mill and two continuous casting machines manufactured by Austrian company "VAI" for production profiled billet were installed and one Double-Bath Steelmaking Units (DBSU) was left to operate under partial load. During the monitoring period, no changes were made to the operational equipment.	
2. Open issues indicated in validation report			
2.1. Missing steps to final approval *Especially in projects which are not yet registered at JISC, there might be some outstanding issues which should have been indicated by the validation report*	/2/	The project did not receive the host Party's approval. By now, the project owner has not obtained the Letter of Approval in Russia.	CAR 01 in [2]
3. Implementation of the project *This part is covering the essential checks during the on-*			

Objective	Reference	Comments	Conclusion (CARs/FARs)
site inspection at the project's site, which is indispensably for an initial verification			
3.1. Physical components *Check the installation of all required facilities and equipment as described by the PDD.*	/1,2/	Please see also the comments in Section 1.4 above.	OK
3.2. Project boundaries *Check whether the project boundaries are still in compliance with the ones indicated by the PDD.*	/1,2/	The project boundaries comprise GHG emissions produced as a result of of two-stage project implementation process: - Construction of two section CCMs №1, 2 with total output up to 2 million tons of steel billet per year, installation of two LFAs and dismounting of the three classic open-hearth furnaces and phase-out of teeming. - Construction of two electric arc furnaces with capacity 175 tons, and decommissioning of two DBSUs. The project boundaries include: - Metallurgical conversion stages: coking coal production in the by-product coke plant, blast-furnace plant, EAFP (or OHFP and BMP in the baseline scenario) - Own power generation capacities of MMK: CHPP, CPP, SABPP, turbine section in the steam plant, gas recovery section in the steam plant - Unified energy system of Urals. This is in line with PDD Sections B.3 and B.1	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
3.3. Emission reduction achieved *Compare the value of emission reduction achieved with that estimated in PDD and explain the difference if any*	/1,2/	Estimated amount of emission reductions in the period from 1 January 2008 – 31 December 2009 is 2,354,305 tCO2e whereas the amount achieved is 2,120,856 tCO2e. The causes for the deviation are reasonably explained in MR Section A.3.	OK
3.4. Monitoring and metering systems *Check whether the required metering systems have been installed. The meters have to comply with appropriate quality standards applicable for the used technology.*	/1,2, 60/	The monitoring and metering systems are installed and were inspected on site. They are in compliance with national law and power industry regulations. OJSC "MMK" had monitored all parameters used in the monitoring plan. Monitoring report is subject for verification. Information about each parameter is presented in the approved form by certified QMS of OJSC "MMK". The data relating to the monitoring of the project is posted on a dedicated server of OJSC "MMK". Departments responsible for monitoring of each parameter in the JI project carry a responsibility for the treatment of primary reporting documents, processing, preparation, verification and transfer to the Department for relations with state authorities and markets protection (JI project implementation coordinator) of the reporting documents containing the information about monitored parameters. In each department of OJSC "MMK" involved in monitoring under the JI project the head of the department assigns a person responsible for provision of the reporting documents and tracking of the parameters change (refer to MR, Section B.3, Fig.B.3.1 and Table B.3.1.) All measuring equipment complies with national law and regulations. However a request has to be responded. **CAR 01.** Please provide a reference to the specialized procedures for the monitoring organization for the Joint Implementation project, developed by the	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		"MMK" management in yearly 2010, to manage the monitoring process as stated in the MR, Section B.3. Please clarify whether the procedures in question were applied for the monitoring data 2008-2009 in the MR.	
3.5. Data uncertainty *How will data uncertainty be determined for later calculations of emission reductions? Is this in compliance with monitoring and metering equipment?*	/1, 2/	**CAR 02.** Please provide in MR main sources of uncertainty of the proposed monitoring system used for later calculations of GHG emission reductions. A special requirement for data uncertainty was not defined in the PDD. **CAR 03.** Please provide in MR references to sources for "Carbon content of materials and fuels" and "Historical averages of parameters, which characterize OHFP-BMP process" listed Tables B.2.1 Table 2.2 accordingly (refer to MR Section B.2).	OK
3.6. Calibration and quality assurance *Check how monitoring and metering systems are subject to calibration and quality assurance routines* *a) with installation* *b) during future operation*	/1,2,60,61/	The measurements are carried out by metering equipment calibrated in accordance with the Federal Law №102 "About Unity of Measurements". During the audit, the status of calibration of all used measuring devices was checked and found proper. Responsibility for maintenance of metering equipment is established, documented in the MR in Section B.3 and communicated /60/.	OK
3.7. Data acquisition and data processing systems *Check the eligibility of used systems.*	/1,2,60,61/	Please refer to 3.4 above.	OK
3.8. Reporting procedures *Check how reports with relevance for the later*	/60,61/	Data reporting procedures and responsibilities of the managers concerned are described in MR Section B.3. The departments are directly involved in monitoring described in Fig. B.3.1	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
determination of emission reductions will be generated		and Table B.3.1 accordingly. Monitoring report is subject for verification. Department for relations with state authorities and markets protection controls the completeness of the data and the term of data transfer. Departments responsible for monitoring of each parameter in the JI project carry a responsibility for the treatment of primary reporting documents, processing, preparation, verification and transfer to the Department for relations with state authorities and markets protection (JI project implementation coordinator) of the reporting documents containing the information about monitored parameters. In each department of OJSC "MMK" involved in monitoring under the JI project the head of the department assigns a person responsible for provision of the reporting documents and tracking of the parameters change. Every quarter all the relevant data are transferred to CTF Consulting LLC (consultant of the project) by e-mail. Similarly the information matrix of parameters, which were changed and other important information is sent to CTF Consulting LLC in order that relevant definitions are made during a preparation of the monitoring report. Within 10 working days after receipt of the complete set of reporting forms the specialists of CTF Consulting LLC calculate CO2 emission reduction achieved by JI project for each quarter. The results of calculation are reported to the Department for relations with state authorities and markets protection. CTF Consulting LLC develops for OJSC "MMK" the annual monitoring report under the quarterly reporting on CO2 emission reduction, which is sent then to Department for relations with state authorities and markets protection and	

Objective	Reference	Comments	Conclusion (CARs/FARs)
		Department of Economics of MMK upon receipt of the report on 4th quarter and year. The Department of Economics has to compare the figures contained in the monitoring report of the consumption of raw materials and manufacture of products with Calculation of prime costs and confirm their compliance. Annual monitoring report is approved by Executive Director of MMK. Conclusion is pending a response to CAR 01.	
3.8. Documented instructions *Check whether the personnel performing tasks with sensitivity for the monitoring of emission reductions have access and knowledge of documented instructions, forming a part of the project's management system.*	/60,61/	Instructions for the responsible managers which are documented in the Responsibility Structure (MR, Section B.3) are well mastered and closely followed, as was observed during interviews. (Refer to list of persons interviewed).	OK
3.9. Qualification and training *Check whether the personnel performing tasks with sensitivity for the monitoring of emission reductions has the appropriate competences, capabilities and qualifications to ensure the required data quality.*	/62,63,/	"MMK" has the Department of Personnel and Public Relations responsible for training and knowledge examinations in the form of testing. In each department of OJSC "MMK" involved in monitoring under the JI project the head of the department assigns a person responsible for provision of the reporting documents and tracking of the parameters change. All they have appropriate competences, capabilities and qualifications to ensure the required data quality. (Refer to list of persons interviewed). Periodic training is a part of production operations at the plant and maintenance routine in framework of production duties.	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		There are annual knowledge examinations and learning of operational standards of the personnel concerned.	
3.10. Responsibilities *Check whether all tasks required to gather data and prepare a monitoring report with the necessary quality have been allocated to responsible employees.*	/62,63/	Responsibilities of the involved managers are generally well defined and documented in MR (refer to MR, Section B.3, Fig.B.3.1 and Table B.3.1, refer to Section 3.4 above). Conclusion is pending a response to CAR 01.	OK
3.11. Troubleshooting procedures *Check whether there are possibilities of redundant data monitoring in case of having problems with the used monitoring equipment. Such procedures may reduce risks for the buyers of emission reductions (e.g. the Client)*	/64,65/	The troubleshooting procedures for monitoring at MMK has the following specific: - The metallurgical plant is continuously working object that as a rule have has doubling of points/levels of measurements (e.g. several railroad scales points, several electricity meters, etc.) and besides in case of necessity is able to apply the reserve methods of monitoring through indirect parameters, calculation of mass or electricity balances, etc. - It has an own Metrological service regulated by main procedures PD MMK 3-TU-05-2008 "Regulation on metrological service of OJSC MMK" and STO MMK 2-7.6-01.2008 "Quality Management System. Management of measurements and monitoring equipment. Main requirements and procedures" which is responsible for proper maintenance of monitoring equipment and its quick replacement is	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		case of the identified fault - It has a long and well documented history of measurements and stable production, therefore in case of absence of important monitoring data for a while the method of analogs may be applied based on the historical data for the same parameter. **CAR 04.** BPCP lab of OJSC "MMK" did not perform systematic measurements of carbon content in coal charge and carbon content in dry metallurgical coke in 2008 and in January 2009 as prescribed in PDD Section D.1.1.1, p.42-43 due to replace of the old measuring devices on a new one (carbon analyzer LECO SC144DR), which entailed the development and approval of new measurements methodologies and staffed training. Therefore in the calculations as monthly data on the parameters for the period January 2008-January 2009 were taken as monthly average value of February 2009-December 2009 (80,35 % by mass and 83,51 % by mass accordingly). The conservatism of the applying approach with using the data as monthly average value of February 2009-December 2009 is not assessed. The IPCC adequate data are not used.	
4. Internal Data *Identifying the internal GHG data sources and ways in which the data have been collected, calculated, processed, aggregated and stored should*			

Objective	Reference	Comments	Conclusion (CARs/FARs)
be part of initial verification to assess accuracy and reliability of the internal GHG data.			
4.1. Type and sources of internal data *Acquire information on type and source of internal GHG data, which is used in calculations of emission reductions. E.g.." continuous direct measurements", "site-specific correlations", "periodic direct measurements", "use of models" and/or "use of default emissions factors".*	/60/	The measured internal data included mass and volume content flow rates of raw materials, products, and fuels; chemical composition; electric energy. The collected data (measured, estimated, and calculated) are presented in MR Sections D.1 – D.7, where deviations from PDD Monitoring Plan are introduced, and Excel files with calculations. These data and relevant monitoring points are defined as per PDD Sections D.1 – D.1.4 as follows: - CO2 emission from metallurgical conversions within the project boundaries (using carbon balance method); - specific CO2 emission per ton of coke, pig iron and steel billet (profiled and slab all together); - consumption of pig iron and scrap metal for production of one ton of steel billet and consumption of metallurgical coke per one ton of pig iron; - project CO2 emission from metallurgical conversions during production of profiled steel billet using defined specific values and coefficients; - CO2 emission coefficients during generation of electricity and air blast at MMK, and project emissions during consumption of electricity in EAFP and consumption of air blast in BFP required for production of the profiled steel billet. - total project CO2 emissions associated with production of profiled	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		steel billet are summarized. Default data used have been described and determined in PDD Section D.1 Table D.1-1, page 33 and Annex 2. They are also explained in PDD Section D.1.2.2 and in MR Section B.2, Tables B.2.1 and B.2.2. Conclusion is pending a response to CAR 01, CAR 02, CAR 03, and CAR 04.	
4.2. Data collection *How is data collected and processed? What are the means of quantifying emissions from the different data sources?*	/60/	Please see also the comments in Section 3.4 above. The processing of the data collection is performed according to the Monitoring Plan and described in the MR, Section B.3. Conclusion is pending a response to CAR 01 and CAR 04.	OK
4.3. Quality assurance *Does internal data collection underlie sufficient quality assurance routines?*	/60,61/	Please see also the comments in Section 3.4 above. The internal control of data by second independent persons is on sufficient level as specified in the MR, Section B.3. Department for relations with state authorities and markets protection controls the completeness of the data and the term of data transfer. Annual monitoring report is approved by Executive Director of MMK. **CL 01.** Please clarify the status of "the specialized procedures for the monitoring organization for the Joint Implementation project" that "was developed in the early 2010, i.e. after approval of the project by an independent accredited entity". Was they applied in the monitoring emission for 2008-2009? (Refer to MR, Section B.3, and p.11). Conclusion is pending a response to CAR 01and CAR 04.	OK
4.4. Significance and reporting risks *Assess the significance and reporting risks related to the*	/64,65,60/	Risks might be human errors done during manual data recording and transfer of measured data to the excel spread sheet. Owing to control by independent persons, as described above, the risks are minimized.	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
different internal data sources. Potential reporting risks may be related to the calculation methods, accuracy of data sources and data collection and/or the information systems from which data is obtained. The significance of and risks associated with the data source indicate the level of verification effort required at a later stage.		No errors were observed	
5. External Data *Especially for data of baseline emissions there might be the necessity to include external data sources. The access to such data and a proof of data quality should be part of initial verification. If it is deemed to be necessary, an entity delivering such data should be audited.*			
5.1. Type and sources of external data *Acquire information on type and source of external data, which is used in calculations of emission reductions.*	/1,2,60/	There are no external data in the monitoring plan, applied to GHG emission reduction calculationy except the default value from IPCC Guidelines (2006) for carbon content in power station coal because at MMK this parameter is not measured.	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
5.2. Access to external data *How is data transferred? How can reproducibility of data set be ensured?*	N/A	Not applicable.	OK
5.3. Quality assurance *Does external data underlie any quality assurance routines?*	/1,2/	No QA routines are explicitly underlined. Refer to 5.2 above.	OK
5.4. Data uncertainty *Is it possible to assess the data uncertainty of external data? Are such routines included in reporting procedures?*	N/A	Not applicable.	OK
5.5. Emergency procedures *Are there any procedures, which will be applicable if there is no access to relevant external data?*	N/A	Not applicable.	OK
6. Environmental and Social Indicators *A Monitoring Plan may comprise environmental and/or social indicators, which could be necessary to monitor for the success of the project activity.*			
6.1. Implementation of measures	/1,2/	The monitoring plan does not specify any environmental or social indicators to be monitored for the success of the project activity. The values of	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
A project activity may demand for the installation of measures (e.g. filtering systems or compensation areas), which are exceeding the local legal requirements. A check of the implementation or realization of such measures should be part of the initial verification.		environmental impact do not exceed the legal requirements and coordinated with local authorities. Laboratory for Control of Air Quality of OJSC "MMK" performs environmental monitoring according to the monitoring schedule. Social impact of the project is not identified in the monitoring plan. However the following request to be responded. **CAR 05.** PDD Section F.1 states: " Reconstruction of open-hearth furnace plant at MMK will have the following environmental impacts: - Air emissions from technological equipment - Increased consumption of industrial water, additional discharge of polluted waters into existing waste water treatment facilities - Generation of industrial and consumption waste in the course of project implementation. Project implementation will have impacts on surface waters. Project implementation will be associated with changes in the volumes of generation of the following types of waste: scrubber sludge from purification of technological gas, bulk steel scrap, mercury lamps, abrasive dust, calcines and remnants of steel electrodes, waste abrasive disks, waste circuit-breaker oil, aspiration dust, mixed fiber waste, waste industrial oils and rags. Project implementation will also increase noise pollution. The main sources of noise are: - Electric arc at LFA; - Ventilation equipment; - Central conditioners". Please provide in MR the information about the installation of measures as	

Objective	Reference	Comments	Conclusion (CARs/FARs)
		per PDD Section F.1 and their assessment.	
6.2. Monitoring equipment *Check where necessary whether the required metering systems have been installed. The meters have to comply with appropriate quality standards applicable for the used technology.*	N/A	Laboratory for Control of Air Quality of OJSC "MMK" performs environmental monitoring according to the monitoring schedule. The measurement devices are envisaged to be calibrated periodically by the specialized organization. This was confirmed at the site visit. Refer also to 6.1 above	OK
6.3. Quality assurance procedures *What quality assurance procedures will be applied for such data?*	N/A	Laboratory for Control of Air Quality of OJSC "MMK" performs environmental monitoring according to the monitoring schedule. Refer to 6.1 above	
6.4. External data *Check the quality, reproducibility and uncertainty of external data.*	N/A	Not applicable.	
7. Management and Operational System *In order to ensure a successful operation of a Client project and the credibility and verifiability of the ERs achieved, the project must have a well-defined management and operational*			

Objective	Reference	Comments	Conclusion (CARs/FARs)
system.			
7.1. Documentation *The system should be documented by manuals and instructions for all procedures and routines with relevance to the quality of emission reductions. The accessibility of such documentations to persons working on the project has to be secured.*	/1,60,61 /	The First Periodic Monitoring was conducted based on and the Responsibility Structure as well as the PDD Monitoring Plan, and numerous instructions for personal as regards control of measured data and calibration of measuring devices as a part of the plant operation routine. However, request has to be responded. **FAR 01.** Based on the first experience of monitoring, OJSC "MMK" may wish to issue a separate Manual of the Monitoring Management System though the present managerial set up is observed by the verifier as appropriate enough. Conclusion is pending a response to CAR 01.	Pending
7.2. Qualification and training *The system should describe the requirements on qualification and the need of training programs for all persons working on the emission reduction project. Performed training programs and certificates should be archived by the system.*	/19,23-26,62,63/	OJSC «MMK" has a well-developed system for identification of requirements and training of all personnel. It was implemented long ago and covers of the period of generation of ERUs. The President of "Managing Company MMK" mr V.F. Rashnikov has signed the Order # VR-282 of 07.09.2009 that enacted following corporate standards as past of Quality Management System (QMS): - STO SMK 2-6.2-07-2009 «QMS. Personnel. Organization of the training of managers, specialists and clerks of OJSC "MMK" and persons not being the employees of OJSC "MMK", - STO SMK 2-6.2-08-2009 «QMS. Personnel. Organization of the training (professional retraining, retraining (getting of the second profession) of the workers of OJSC "MMK"). State as expired:	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		Order # 349 of 26.05.2005 on enacting the standard STP MMK 2-6.2-02-2005 «QMS. Personnel. Organization of the process of training, retraining and improving of qualification of employees. Please also refer to 3. 9 and 7.1 above.	
7.3. Allocation of responsibilities *The allocation of responsibilities should be documented in written manner.*	/19,23-26,62,63/	Please refer to 3.10 and 7.1 above. However, request has to be responded. **FAR 02.** Based on the first experience of monitoring, OJSC "MMK" may wish to issue a formal order to formalize the status of a JI working group responsible for the JI Project Monitoring Management System, in particular to appoint a JI coordinator to ensure the alignment with the existed managerial set up.	Pending
7.4. Emergency procedures *The system should contain procedures, which provide emergency concepts in case of unexpected problems with data access and/or data quality.*	N/A	The troubleshooting procedures on monitoring has been described in 3.11. The following measures should mitigate the consequences of unexpected problems with data access and/or data quality at OJSC "MMK": 1. According to specialized corporate procedure for the monitoring organization for the Joint Implementation project PD MMK 3-SSGO-01-2010: 7.1 for ensuring of the secure storage and protection of electronic documents with data used for monitoring purposes the special folder is established on the server space of OJSC "MMK". Each responsible person from department that submit monitoring data has the own folder without editing rights from other persons. 7.2 For prevention of unintended erasure of correct version of electronic document the reserve coping is ensured.	Pending

Objective	Reference	Comments	Conclusion (CARs/FARs)
		2. Electronic documents that are submitted to the server of MMK is accordance with PD MMK 3-SSGO-01-2010 are printed out and signed in the departments following the existing reporting procedures within certified QMS. Therefore in case of issues with electronic format the data may be restored from the official printed copies or local server space/local website of each relevant department. However, request has to be responded. **FAR 03**. Please develop a procedure, which provides emergency concepts in case of unexpected problems with data gathering and/or data quality.	
7.5. Data archiving *The system should provide routines for the archiving of all data, which is required for verifying the project's performance in the context of consecutive verifications.*	/1,60,61/	Requirements for data archiving are defined in 1st MR, the MMK corporate QMS procedures for handling with documents and records, Regulation on corporate informational system (KIS), other relevant QMS procedures including department level and job descriptions. **FAR 04.** Based on the first experience of monitoring, OJSC "MMK" may wish to issue a formal procedure for data archiving as partialy defined in the MR. Besides, FAR 03 should be taken into account.	Pending
7.6. Monitoring report *The system includes procedures for the calculation of emission reductions and the preparation of the monitoring report.*	/1.60,61/	Procedures for the calculation of emission reductions and the preparation of the monitoring report are partly defined in the 1st MR. Preparation a monitoring report and calculations of emission reduction are carried out at the beginning of each next year of the credit period by CTF Consulting LLC based on the OJSC "MMK" data on the basis of the Monthly and Yearly Reports. **FAR 05.** Based on the first experience of monitoring, OJSC "MMK" may wish to issue a formal procedure for the calculation of emission reductions and the	Pending

Objective	Reference	Comments	Conclusion (CARs/FARs)
		preparation of the monitoring report in particular respect to internal verification and validation of data and responsibilities assigned for that. The extended and comprehensive Responsibility Structure of the MR is observed and discussed on the site visit. Conclusion is pending also a response to FAR 01, FAR 02, FAR 03, and FAR 04.	
7.7. Internal audits and management review *The system includes internal control procedures, which allow the identification and solution of problems at an early stage.*		**FAR 06.** Based on the first experience of monitoring, OJSC "MMK" may wish to issue a formal procedure for the internal control procedures (Internal audits and management review), which allow the identification and solution of problems at an early stage of calculation of emission reductions and the preparation of the monitoring report.	Pending

Table 2 GHG calculation procedures and management control testing & Detailed audit and random testing of residual risk areas

Expectations for GHG data management system/controls	Scores	Verifiers Comments (including *Forward Action Requests*)
A. Defined organisational Responsibility Structure, responsibilities and competencies		
A.1. Position and roles Position and role of each person in the GHG data management process is clearly defined and implemented, from raw data generation to submission of the final data. Accountability of senior management must also be demonstrated.	Full	Data reporting procedures and responsibilities of the managers concerned are established by the existed job descriptions and procedures, applied during routine production management at OJSC "MMK". Monitoring report is subject for verification. Information about each parameter is presented in the form of an information matrix of the approved form. The data relating to the monitoring of the project is posted on a dedicated server of OJSC "MMK". Departments responsible for monitoring of each parameter in the JI project carry a responsibility for the treatment of primary reporting documents, processing, preparation, verification and transfer to the Department for relations with state authorities and markets protection (JI project implementation coordinator) of the reporting documents containing the information about monitored parameters. In each department of OJSC "MMK" involved in monitoring under the JI project the head of the department assigns a person responsible for provision of the reporting documents and tracking of the parameters change. Department for relations with state authorities and markets protection controls the completeness of the data and the term of data transfer. Every quarter all the relevant data are transferred to CTF Consulting LLC (consultant of the project) by e-mail. Similarly the information matrix of parameters, which were changed and other important information is sent to CTF Consulting LLC in order that relevant definitions are made during a preparation of the monitoring report. The Department of Economics has to compare the figures contained in the monitoring report of the consumption of raw materials and manufacture of

		products with Calculation of prime costs and confirm their compliance. Annual monitoring report is approved by Executive Director of MMK. All they have appropriate competences, capabilities and qualifications to ensure the required data quality. (Refer to list of persons interviewed). The Responsibility Structure, presented in the 1st Monitoring Report (further MR) Version 2.1 dated 30 June 2010 for the monitoring period from 01/01/2008 to 31/12/2009, clearly defines the scope of application, types of primary data, responsibilities of each person for and requirements to data collection, recording, storage, protection, transfer, consolidation, processing, and reporting (refer to MR, Section B.2). MR reflects most provisions of the Responsibility Structure.
A.2. Responsibilities Specific monitoring and reporting tasks and responsibilities are included in job descriptions or special instructions for employees.	Full	General and specific monitoring and reporting tasks and responsibilities of relevant managers are specified in the existed job descriptions and procedures, applied during routine production management at OJSC "MMK" and in MR, Section B.3, Table B.3.1.
A.3. Competencies needed Competencies needed for each aspect of the GHG determination process are analysed. Personnel competencies are assessed and training programme implemented as required.	Full	The competencies for each step of the GHG monitoring process have been checked. Knowledge of the GHG operational monitoring process is available. The Responsibility Structure was prepared by the plant managers who themselves are in charge of monitoring and reporting tasks. Hence there was no need of special training. Corporate Standards: - STO SMK 2-6.2-07-2009 «QMS. Personnel. Organization of the training of managers, specialists and clerks of OJSC "MMK" and persons not being the employees of OJSC "MMK", - STO SMK 2-6.2-08-2009 «QMS. Personnel. Organization of the training (professional retraining, retraining (getting of the second profession) of the workers of OJSC "MMK"). have covered all the requirements to competencies of the personnel in charge of

		monitoring and reporting of GHG emission reduction and needed for each aspect of the GHG determination process.
B. Conformance with monitoring methodology		
B.1. Reporting procedures Reporting procedures should reflect the monitoring methodology content. Where deviations from the monitoring plan occur, the impact of this on the data is estimated and the reasons justified.	Full	Data reporting procedures and responsibilities of the managers concerned are described in the Responsibility Structure (refer to MR, Section B.3, Fig. B.3.1, and Table B.3.1). The Department for relations with state authorities and markets protection controls the completeness of the data and the term of data transfer. Every quarter all the relevant data are transferred to CTF Consulting LLC (consultant of the project) by e-mail. CTF Consulting LLC develops for OJSC "MMK" the annual monitoring report under the quarterly reporting on CO2 emission reduction, which is sent then to Department for relations with state authorities and markets protection and Department of Economics of MMK upon receipt of the report on 4th quarter and year. The Department of Economics has to compare the figures contained in the monitoring report of the consumption of raw materials and manufacture of products with Calculation of prime costs and confirm their compliance. Annual monitoring report is approved by Executive Director of MMK. Requirements for data reporting are defined in the MMK corporate QMS standard: STO OS 2-09-2009 "General-system. Order of control of "Joint registry of business-processes, application of information system "Business-processes of OJSC "MMK", other relevant QMS procedures including department level and job descriptions.
B.2. Necessary Changes Necessary changes to the monitoring methodology are identified and changes are integrated in local procedures as necessary.	Full	During the monitoring period, there were no changes in the measurement equipment, except carbon analyzer LECO SC144DR in BPCP laboratory. The values of carbon mass content in coal charge (dry weight), values of carbon content in metallurgical coke (dry weight) were calculated as monthly average value of February 2009-December 2009 due to replacing of the old measuring

		device on a new one (carbon analyzer LECO SC144DR), which entailed the development and approval of new measurements methodologies and staffed training. The verifier positively determined these deviations as appropriate to the project conditions (refer to Section 3.1.2 above, response to CAR 02). Conclusion is pending a response to CAR 04 in INV.
C. Application of GHG determination methods		
C.1. Methods used There are documented description of the methods used to determine GHG emissions and justification for the chosen methods. If applicable, procedures for capturing emissions from non-routine or exceptional events are in place and implemented.	Full	The project follows the JI specific approach applied for calculation of the CO2 emissions by carbon balance method is in line with Tier 3 approach described in Section 4.2.2 of Chapter 4 of "2006 IPCC Guidelines for National Greenhouse Gas Inventories" (IPCC Guidelines 2006). This approach was complemented with monitoring of CO2 emission factor for generation of electricity at MMK own power plants, CO2 emissions due to consumption of electricity in EAFP, CO2 emissions from generation and consumption of air blast in blast furnace plant. The equations used to determine GHG emissions are properly documented in MR and formalized in terms of the excel spreadsheet /4/ which is observed the verifier as transparent and correct. The methods specified by the PDD Version 1.4 dated 15 January 2010, are applied for the calculation of GHG emissions at the design and initial conditions. Conclusion is pending a response to CAR 01, CAR 02, and CL 01 in INV.
C.2. Information/process flow An information/process flow diagram, describing the entire process from raw data to reported totals is developed.	Full	MR, Section B.3 contains accounting, registration and storage requirements for the data, which monitored during the monitoring period.
C.3. Data transfer Where data is transferred between or within systems/spreadsheets, the method of transfer (automatic/manual) is highlighted – automatic links/updates are implemented where possible.	Full	Main part of reporting documents with monitoring data is received by "CTF Consulting" LLC from MMK in electronic form in Microsoft Excel spreadsheets. Several parameters have received as scanned paper original document. Data values from electronic spreadsheets are transferred into monitoring report ERUs calculation table via link to input data spreadsheets. Data from scanned

All assumptions and the references to original data sources are documented. Manual transfer has occurred.		documents are transferred manually by "CTF Consulting" staff into excel spreadsheet.
C.4. Data trails Requirements for documented data trails are defined and implemented and all documentation are physically available.	Partial	Requirements for documented data trials are implemented as defined in PDD Section D.3. Additionally CTF Consulting, LLC company consults OJSC "MMK" and supervises the process of verification as interested party (the founder of CTF Consulting – Carbon Trade & Finance SICAR S.A. is a contracted buyer of ERUs from the project according to Emission Reduction Purchase Agreement between OJSC "MMK" and Carbon Trade & Finance SICAR S.A. of 18/12/2009. Requirements for documented data trials are implemented as defined in the MR Section B.3. FAR 04, FAR 05, FAR 06 from Initial Verification Protocol has to be responded.
D. Identification and maintenance of key process parameters		
D.1. Identification of key parameters The key physical process parameters that are critical for the determination of emission factors are identified.	Full	The key physical process parameters are identified in MR in full compliance with PDD Monitoring Plan.
D.2. Calibration/maintenance Appropriate calibration/maintenance requirements are determined.	Full	Records of calibration of all measuring devises were checked and the status of calibration was verified as proper. Refer to 3.6 in the Initial verification Protocol. The person responsible for metrological assurance in the relevant department stores the hard copies of the calibration certificates and manages the schedule of calibration and control which is coordinated with Chief metrologist (Technological department) who plans and observes the allocation of necessary resources at MMK corporate level. Chief metrologist is responsible for ensuring of the proper following of the schedule of calibration and control and successful results of work. The maintenance and repair of the measuring devices are performed as per the schedule by several calibration laboratories (as part of JSC "MMK" or affiliate companies):

		Central electrotechnical laboratory of JSC "MMK" NPO "Avtomatika" LLC JSC «MRK».
E. GHG calculations		
E.1. Use of estimates and default data Where estimates or default data are used, these are validated and periodically evaluated to ensure their ongoing appropriateness and accuracy, particularly following changes to circumstances, equipment etc. The validation and periodic evaluation of this is documented.	Full	Refer to 5.1 and 5.3 in the Initial Verification Protocol. Conclusion is also pending a response to CAR 03 from INV.
E.2. Guidance on checks and reviews Guidance is provided on when, where and how checks and reviews are to be carried out, and what evidence needs to be documented. This includes spot checks by a second person not performing the calculations over manual data transfers, changes in assumptions and the overall reliability of the calculation processes.	Partial	Monitoring report is subject for verification. Information about each parameter is presented in the form of an information matrix of the approved form. The data relating to the monitoring of the project is posted on a dedicated server of OJSC "MMK". In each department of OJSC "MMK" involved in monitoring under the JI project the head of the department assigns a person responsible for provision of the reporting documents and tracking of the parameters change. Department for relations with state authorities and markets protection controls the completeness of the data and the term of data transfer (refer to MR Section B.3). The periodicity of data transfer by structural departments of OJSC "MMK" is monthly within 5 working days after their preparation and approval of paper form. Submission of the reports to Department for relations with state authorities and markets protection is performed by responsible person in electronic form. Conclusion is also pending a response to CAR 01, CL 01, and FAR 01 (INV).
E.3. Internal verification Internal verifications include the GHG data management systems to ensure consistent	Partial	According to the existed overall management Responsibility Structure of the JI monitoring and reporting, departments responsible for monitoring of each parameter in the JI project carry a responsibility for the treatment of primary

application of calculation methods.		reporting documents, processing, preparation, verification and transfer to the Department for relations with state authorities and markets protection (JI project implementation coordinator) of the reporting documents containing the information about monitored parameters. The annual report on an accrual basis is attached to the report of December. **CAR 06.** Monitoring report is not verified by the signatures of OJSC "MMK" top Managers. Conclusion is also pending a response to FAR 01, FAR 05 (INV).
E.4. Internal validation Data reported from internal departments should be validated visibly (by signature or electronically) by an employee who is able to assess the accuracy and completeness of the data. Supporting information on the data limitations, problems should also be included in the data trail.	Partial	Internal validation of data is overall combined with internal verification. Monitoring report is validated by the signature of OJSC "MMK" Managing Director. Conclusion is also pending a response to CAR 06, FAR 01, and FAR 06 (INV).
E.5. Data protection measures Data protection measures for databases/spreadsheets should be in place (access restrictions and editor rights).	Full	According to specialized corporate procedure for the monitoring organization for the Joint Implementation project PD MMK 3-SSGO-01-2010: 7.1 for ensuring of the secure storage and protection of electronic documents with data used for monitoring purposes the special folder is established on the server space of OJSC "MMK". Each responsible person from department that submit monitoring data has the own folder without editing rights from other persons. 7.2 For prevention of unintended erasure of correct version of electronic document the reserve coping is ensured. Besides CTF Consulting LLC store all the monitoring data received from MMK as well as ERUs calculation spreadsheets and monitoring reports at its own protected server space in accordance with internal "Documented Procedure on control of the documents and records for compilation of the monitoring reports",

		version 01 of of 11/12/2009. Data are stored up to 01.01.2015 in fact. Also refer to // and MR Section B.3.
E.6. IT systems IT systems used for GHG monitoring and reporting should be tested and documented.	Full	Data collection and results reporting are based on standard Microsoft Windows tools. The supporting IT systems are maintained on the basis of IT procedures. Department of information technologies of OJSC "MMK" takes the responsibility on server disk space for ensuring of the secure storage and protection of electronic documents used for monitoring purposes (refer to MR Section B.3).

Table 3/4 GHG calculation procedures and management control testing & Detailed audit and random testing of residual risk areas

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvements (including Forward Action Requests)
The following potential risks were identified and divided and Responsibility Structured according to possible areas of occurrence.	*The following measures were implemented in order to minimize the corresponding risks.*	*Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of verification*	*Additional verification testing performed is described. Testing may include: sample cross checking of manual transfers of data; recalculation; spreadsheet 'walk throughs' to check links and equations; inspection of calibration and maintenance records for key equipment; check sampling analysis results; discussions with process*	*Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.*

			engineers who have detailed knowledge of process uncertainty and error bands.	

I Raw data generation				
•Installation of new monitoring equipment •Dysfunction of installed equipment •Maloperation by personnel •Downtimes of equipment •Replacement of equipment	•All installed measuring devices are to high industry standard •Overall responsibility is for maintenance assigned to the plant specialists as per MMK corporate standard STO SMK 2-7.6-03-2003 «Quality management system. Control devices for monitoring and measurement. Calibration, repair and maintenance of measuring equipment», Responsible persons for checking and calibration shall be appointed for each department by order. Responsible person	•None	• N/A	N/A

	reports to the Chief metrologist of MMK • Only skilled and trained personnel is allowed to operate the relevant equipment and take metering records •Regular visual inspections of equipment •Immediate replacement of dysfunctional equipment •Stand-by equipment is available •Internal checks of technological discipline			

II Raw data collection				
•Metering records •Process monitors •Operational logs •Calibration and maintenance data •Passports and other	•Exclusively installation and operation by duly calibrated equipment •Proper maintenance of data and document control procedure •Implementation of data	•Human mistakes in measurements •Incomplete records and documentation •Ex-post corrections of data records •Big amounts of	•On-site interviews with the personnel in charge •Inspection of calibration and maintenance records •Passports for key monitoring equipment were inspected	All interviewed staff showed competence based on training and experience. Human mistakes in measurements seem unlikely.

vendor data •Accounting records •Accuracy of data supplied	traceability checking Responsibilities for the raw data collection are established in MR, Table B.3.1. "Responsibility of departments for monitoring parameters" •General and specific monitoring and reporting tasks and responsibilities of relevant managers are specified the existed job descriptions and procedures, applied during routine production management at OJSC "MMK", certified to ISO 9001:2008 and ISO 14001;2004. •Proper verification of data by an appointed manager from Department for relations with state authorities and markets protection	information •Manual data collection mistakes can only be minimized	•On-site evaluation of the monitoring routines and practices •On-site review of records and documents •Cross-checking of accounting records •Discussions with process engineers who have detailed knowledge of process uncertainty & error ranges	Nonetheless **CAR 02, FAR 01, FAR 02, FAR 03, FAR 04, FAR 05, FAR 06** were issued.

	• Appropriate archiving system defined by the Responsibility Structure • Regular inspections by Internal Auditors under the certified integrated management system of OJSC "MMK"			

III Data aggregation				
• Annual reports • IT systems • Data spreadsheet programming • Manual data transmission • Data protection • Responsibilities	• Verification of reported data by the experienced manager from Department for relations with state authorities and markets protection • Maintenance of IT Systems by Department of information technologies • Clear allocation of responsibilities • Training to MP procedures • Use of internally verified spreadsheet	• Manual data transfer mistakes can only be minimized • Unintended change of spreadsheet at data base entry • Entry of estimated rather then measuring data	• On-site discussions with the personnel in charge • Sample cross checking of the information of the data base • All data which was used in the calculation sheets was explicitly checked for consistency and adequacy	All interviewed staff showed competence based on training and experience. Human mistakes in measurements seem unlikely. No significant uncertainties or errors regarding data aggregation were observed in the course of verification. Nonetheless **CAR 02** was issued. **FAR 03** was issued to mitigate the risks.

	• Corporate procedures for protection and back-up of electronic and paper data under certified integrated management system of OJSC "MMK"			

IV Calculation parameters				
• Data sources • Uncertainties	• All parameters and data to be used are defined in the validated monitoring plan	• Danger of underestimation of project emissions as a result of using improper default values of grid emission factor and grid losses	• Conservative estimations of emission reductions in 2008 and 2009 are ensured	No uncertainties or errors regarding calculation parameters were observed in the course of verification. Human mistakes in misuse of data seem unlikely.

V Calculation methods				
• Inaccurate input data • Calculation equations	• Quality of input data is ensured • Validated methodology	• Input data are checked for adequacy • The use of the	• Conservative estimations of emission reductions are ensured • Off-site check of all	No uncertainties or errors regarding calculation methods were observed in the course of

• Applied formulae • Implemented IT Systems • Data storage • Consistency in following the monitoring plan • Control of electronic data	and electronic tool for calculation of emission reduction • Use of standard software • Implementation of data traceability • Check of transfer of formulas and algorithms into excel • Detail review of excel spreadsheet	electronic calculation tool requires permanent assessment • Manual data transfer mistakes can only be minimized • The danger of miscalculation can only be minimized • Uncontrolled copies of spreadsheets can be mixed with the controlled ones	equation and algorithms used in spreadsheets • Random-wise electronic recalculations • Uncertainties due to measuring equipment can only be minimized • Overlook of inadequate input data can only be minimised	verification. Human mistakes in misuse of electronic tool seem unlikely. Nonetheless **CAR 02, CAR 03** were issued. **FAR 01** was issued to mitigate the risks.

VI Monitoring reporting				
• Data transfer to/by the author of the monitoring report • Issuance of the monitoring report • Verification and validation of the monitoring report	• An experienced specialist is appointed for preparation of the MR. • Report is checked for adequacy • Monitoring report is verified and validated • Signs of combined verification and validation are in	• The danger of the manual data transfer can only be minimized • The danger of insufficient control of adequacy	• Cross checking of the information in the monitoring report and the original data by verifier • Check of the MR adequacy by verifier	Some flaws regarding the monitoring reporting were observed in the course of verification. Please refer to **CAR 06.** **FAR 01, FAR 02, FAR 03, FAR 04, FAR 05, FAR 06** were issued.

	evidence			

VII Management system				
•Inadequacy of management system (MS) •Nonconformities in maintenance of management system	•Responsibility Structure and MR describe main elements of MS •Personnel shows competence and commitments •Internal audit is conducted •Monthly management reviews are planned.	•None	•NA	**FAR 01, FAR 02, FAR 03, FAR 04, FAR 05, FAR 06** were issued.

Table 5: Resolution of Corrective Action and Forward Action Requests

Corrective Action and Forward Action Requests by verification team	Ref. to check list question in INV and FPV	Summary of project owner Response (please describe the action and refer to the page in amended MR)	Verifacation team conclusion
CAR 01 in [8]	Deter		Conclusion is pending.

	minati on Report Table 1 Item 1		The approval should be obtained following the determination of the project.
CAR 01. Please provide a reference to the specialized procedures for the monitoring organization for the Joint Implementation project, developed by the "MMK" management in yearly 2010, to manage the monitoring process as stated in the MR, Section B.3. Please clarify whether the procedures in question were applied for the monitoring data 2008-2009 in the MR.	INV 3.4	The Monitoring report, version 1.1. from 04 October 2010, page 12 was rephrased and supplemented with additional information: It should be noted that OJSC "MMK" had monitored all parameters used in the monitoring plan before development and determination the PDD but the specialized corporate procedure for the monitoring organization for the Joint Implementation project was adopted at MMK in February 2010 (PD MMK 3-SSGO-01-2010 "Regulation on monitoring of GHG emissions reduction, created as a result of the realization of the project: "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works"), i.e. after approval of the project by an independent accredited entity. Therefore the monitoring results for 2008 and 2009 are based on reporting system existed prior to this point in time which is the same as nowadays with only	<u>Conclusion on response.</u> The response is accepted. CAR is closed based on due amendments made in the MR version 1.1. Dated 04 October 2010, page 12.

		exception of the involvement of Department for relations with state authorities and markets protection. Hereby all relevant monitoring information was collected and stored with accordance with MMK corporate rules and regulations but was not qualified as related to JI project boundaries. The mentioned internal Regulation MMK 3-SSGO-01-2010 has been designed to establish a clear and transparent set of authorities and responsibilities for identification of monitoring parameters, timely transfer of relevant reporting forms to MMK JI coordinator and to external consultant (CTF Consulting, LLC) and creation of provisions for secure long-term conservation of monitoring data in accordance with international requirements to JI.	
CAR 02. Please provide in MR main sources of uncertainty of the proposed monitoring system used for later calculations of GHG emission reductions. A special requirement for data uncertainty was not defined in the PDD.	INV 3.5	The section B.4 Technical means of measurements and its accuracy has been added into Monitoring report version 1.1, page 17-19.	Conclusion on response. The response is accepted. CAR is closed based on due amendments made in the MR version.
CAR 03. Please provide in MR references to sources for "Carbon content of materials and fuels" and "Historical averages of parameters, which characterize OHFP-BMP	INV 3.5	The sources for mentioned data have been added into Table B.2.1. and Table B.2.2. in the Monitoring report version 1.1.	Conclusion on response.

process" listed Tables B.2.1 Table 2.2 accordingly (refer to MR Section B.2).		The values and sources of data coincide with the PDD, version 1.4 of 15 January 2010.	The response is accepted. CAR is closed based on due amendments made in the MR version 1.1. dated 04 October 2010. This CAR is closed.
CAR 04. BPCP lab of OJSC "MMK" did not perform systematic measurements of carbon content in coal charge and carbon content in dry metallurgical coke in 2008 and in January 2009 as prescribed in PDD Section D.1.1.1, p.42-43 due to replace of the old measuring devices on a new one (carbon analyzer LECO SC144DR), which entailed the development and approval of new measurements methodologies and staffed training. Therefore in the calculations as monthly data on the parameters for the period January 2008-January 2009 were taken as monthly average value of February 2009-December 2009 (80,35 % by mass and 83,51 % by mass accordingly). The conservatism of the applying approach with using the data as monthly average value of February 2009-December 2009 is not assessed. The IPCC adequate data are not used.	INV 3.11	A monitoring report version 1.1., Section C has been supplemented with the following revised explanation: A deviation in average values of carbon content in coal charge and metallurgical coke (on dry weight) was less than 1% by mass in the period from February 2009 to December 2009, which suggests a stable composition of the coal charge loaded into the coke ovens. It is achieved by pre-mixing of different types of coking coal before it is fed to the ovens. This is a common practice of the enterprise. According to the MMK data based on regular measurements in previous years, the carbon content in coal charge didn't fell below 79% by mass and in	<u>Conclusion on response.</u> The response is accepted. CAR is closed based on due amendments made in the MR version 1.1. dated 04 October 2010.

		metallurgical coke didn't fell below 83% by mass*. Besides the recent monitoring data from MMK shows that the average carbon content in coal charge is 80.47 % by mass for the period January-June 2010 and the average carbon content in metallurgical coke is 83.12 % by mass respectively what confirms that these values are fairly stable in the long-term period. In case of application of default values from 2006 IPCC Guidelines for National Greenhouse Gas Inventories Chapter 4. Table 4.3. (carbon content in coal charge is 73 % by mass and carbon content in metallurgical coke is 83 % by mass) the existing carbon balance for coke and iron production processes developed in the PDD and Monitoring report will be heavily disturbed. Applying the default values of IPCC 2006 for CO_2 emission calculations in year 2008 the total mass of carbon in the input flow for production of metallurgical coke in BPCP would be decreased by 8.4% (446.5 ths. tones C) meanwhile total mass of carbon in the	

* Letter from Head of BPCP production mr. Shashkov to CTF Consulting, LLC by 29 May 2009

		output flow from production of metallurgical coke would be decreased only by 0.5 % (21.8 ths. tones C). Thereby for production of 4269.3 ths. tones of metallurgical coke in BPCP in 2008 the greater quantities of coal charge would need to be used in case of proposed lower carbon content of coal charge (73 % by mass instead of actually applied 80.35 % by mass). As soon as production data are fixed based on actual reporting for 2008 the CO_2 emissions would be estimated with great deviation from the PDD values which seems to be unreasonable as on the stage of development the PDD (April 2009) all available data of raw materials consumption and output in the project were used from actual MMK reports for 2008. Therefore the value of emission reduction in 2008 in the PDD report should coincide with the value of emission reduction in 2008 in the Monitoring report. Take into account statements above it seems to be rather correct and acceptable approach to apply the monthly average value of carbon content in coal charge and metallurgical coke in accordance with instrumental data of	

		February 2009-December 2009 in CO_2 emissions calculation for the period January 2008 – January 2009 instead of using of respective IPCC default values.	
CAR 05. PDD Section F.1 states: " Reconstruction of open-hearth furnace plant at MMK will have the following environmental impacts: - Air emissions from technological equipment - Increased consumption of industrial water, additional discharge of polluted waters into existing waste water treatment facilities - Generation of industrial and consumption waste in the course of project implementation. Project implementation will have impacts on surface waters. Project implementation will be associated with changes in the volumes of generation of the following types of waste: scrubber sludge from purification of technological gas, bulk steel scrap, mercury lamps, abrasive dust, calcines and remnants of steel electrodes, waste abrasive disks, waste circuit-breaker oil, aspiration dust, mixed fiber waste, waste industrial oils and rags. Project implementation will also increase noise pollution. The main sources of noise are: - Electric arc at LFA; - Ventilation equipment; - Central conditioners". Please provide in MR the information about the installation	INV 6.1	Following information has been added to Monitoring report, section B.1., version 1.1.: According to the information from Environmental department of OJSC "MMK" received during visit 16-18.08.2010: The project was fully put into operation is 2006 and environmental protection equipment designed for it (gas purification units at EAFs, etc) operates normally. The total environmental impact for the section steel production has been radically reduced in comparison with the open-hearth/ingots casting technology. Emissions of polluting substances are normalized in the permission to emission of the polluting substances, given out by Rostehnadzor in the Chelyabinsk area. Results of inventory of emissions prepares annually. According to the permission, emissions of pollutant substances don't create maximum concentration limit excess,	<u>Conclusion on response.</u> The response is accepted. CAR is closed based on due amendments made in the MR version 1.1. dated 04 October 2010.

of measures as per PDD Section F.1 and their assessment.		except for a number of substances (nitrogen (IV) a dioxide, sulfur a dioxide, hydrogen sulfide, carbon оксид, phenol) for which temporarily permission is established. Dump of polluting substances occurs on local treatment facilities. After clearing water is dumped in the river Sukhaya (inflow of the river Ural). Placing of a waste occurs in conformity to the project of specifications of formation of a waste and limits on their placing, confirmed by Rostehnadzor in the Chelyabinsk area.	
CAR 06. Monitoring report is not verified by the signatures of OJSC "MMK" top Managers.	FPV E.3	The monitoring report version 1.1 was signed by Managing director of OJSC MMK mr. Bodyaev of 26.06.2010. The scanned page is attached.	Conclusion on response. The response is accepted. CAR is closed based on due amendments made in the MR version 1.1. dated 04 October 2010.
CL 01. Please clarify the status of "the specialized procedures for the monitoring organization for the Joint Implementation project" that "was developed in the early 2010, i.e. after approval of the project by an independent accredited entity". Was they applied in the monitoring emission for 2008-2009? (Refer to MR, Section B.3, and p.11).	INV 4.3	See response to CAR 01.	Conclusion on response. The response is accepted. CAR is closed.

FAR 01. Based on the first experience of monitoring, OJSC "MMK" may wish to issue a separate Manual of the Monitoring Management System though the present managerial set up is observed by the verifier as appropriate enough.	INV 7.1		Conclusion on response: FAR 01 is left open till the next periodic verification. Please issue a separate Manual of the Monitoring Management System or some Annex to the existed Corporate Standards though the present managerial set up is observed by the verifier as appropriate enough.
FAR 02. Based on the first experience of monitoring, OJSC "MMK" may wish to issue a formal order to formalize the status of a JI working group responsible for the JI Project Monitoring Management System, in particular to appoint a JI coordinator to ensure the alignment with the existed managerial set up.	INV 7.3		Conclusion on response: FAR is left open till the next periodic verification. Please issue a formal order to formalize the status of a JI working group responsible for the JI Project Monitoring Management System, in particular a JI coordinator to ensure the alignment with the existed managerial set up.
FAR 03. Please develop a procedure, which provides emergency concepts in case of unexpected problems with	INV 7.4		Conclusion on the response:

data gathering and/or data quality.			FAR is left open till the next periodic verification. Please issue a separate Manual of the Monitoring management System or some Annex to the existed Corporate Standards though the present managerial set up is observed by the verifier as appropriate enough.
FAR 04. Based on the first experience of monitoring, OJSC "MMK" may wish to issue a formal procedure for data archiving as partially defined in the MR.	INV 7.5		Conclusion on the response: FAR is left open till the next periodic verification. Please issue a separate Manual of the Monitoring management System or some Annex to the existed Corporate Standards though the present managerial set up is observed by the verifier as appropriate enough.
FAR 05. Based on the first experience of monitoring, OJSC "MMK" may wish to issue a formal procedure for the calculation of emission reductions and the preparation of the monitoring report in particular respect to internal verification	INV 7.6		Conclusion on the response: FAR is left open till the

and validation of data and responsibilities assigned for that. The extended and comprehensive Responsibility Structure of the MR is observed and discussed on the site visit.			next periodic verification. Please issue a separate Manual of the Monitoring management System or some Annex to the existed Corporate Standards though the present managerial set up is observed by the verifier as appropriate enough.
FAR 06. Based on the first experience of monitoring, OJSC “MMK” may wish to issue a formal procedure for the internal control procedures (Internal audits and management review), which allow the identification and solution of problems at an early stage of calculation of emission reductions and the preparation of the monitoring report.	INV 7.7		<u>Conclusion on the response:</u> FAR is left open till the next periodic verification. Please issue a separate Manual of the Monitoring management System or some Annex to the existed Corporate Standards though the present managerial set up is observed by the verifier as appropriate enough.

Appendix B: Verification Team's CV

Vera Skitina, PhD (chemicals)
Climate change Lead Verifier
Bureau Veritas Certification Russia Technical Director - Lead Auditor, IRCA Lead Tutor, Lead Verifier.

She has over 15 years of experience in powder metallurgy, aluminium metallurgy, plastic metal working, physical-chemistry processes, gas production at power plant, environmental science. She worked in Irkutsk Aluminium Plant, SUAL powder metallurgy plant, Nadvoitzky aluminium plant, Central Scientific Institute of Metals. She is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). She performed over 200 audits since 2004. Also she is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered ISO 9001 Lead Auditor Training Course. She is an Assuror of Social Reports. She has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination of over 17 JI projects and verification of 6 JI projects.

Mr. Leonid Yaskin, PhD (thermal engineering)
Climate change Lead Verifier.
Bureau Veritas Certification Rus General Director, Climate Change Local Manager, Lead Auditor, IRCA Lead Tutor, Lead Verifier

He has over 30 years of experience in heat and power R&D, engineering, and management, environmental science and investment analysis of projects. He worked in Krrzhizhanovsky Power Engineering Institute, All-Russian Teploelectroproject Institute, JSC Energoperspectiva. He worked for 8 years on behalf of European Commission as a monitor of Technical Assistance Projects. He is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). He performed over 250 audits since 2002. Also he is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered OHSAS 18001 Lead Auditor Training Course. He is an Assuror of Social Reports. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination of over 60 JI projects.