

# Continuous Emissions Monitoring System EU Boiler 4A

## Quality Assurance And Quality Control Plan

Company: Packaging Corp. of America  
Site: Filer City, MI  
System: Boiler 4A Full Extractive CEMS  
Revision Date: January 24, 2014

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# Section 1 Introduction

This Quality Assurance/Quality Control (QA/QC) Plan has been prepared to support the operation of the Continuous Emissions Monitoring System (CEMS) at Packaging Corp. of America, Filer City, MI installed for measurement of effluent pollutant concentrations of NO<sub>x</sub> and O<sub>2</sub>.

The EPA has established requirements for monitoring, record keeping, and reporting pollutant levels in flue gases emitted from affected units. The CEMS discussed in this manual are governed by the regulations established under *Title 40 Code of Federal Regulations Part 60* (40 CFR Part 60), Appendix B, Performance Specifications and Appendix F, Quality Assurance Procedures, which include general requirements for the installation, certification, operation, and maintenance of the CEMS.

## A.) Definitions of Quality Assurance and Quality Control

The QA procedures consist of two distinct and equally important functions.

Quality Assurance is the series of activities performed to evaluate the overall effectiveness of the maintenance and QC efforts. QC involves those activities undertaken to determine that the product or service is effective in maintaining an accurate and reliable output of CEMS data.

Quality Control functions are the control and improvement of the quality of the CEMS data by implementing QC policies and corrective actions. QC functions are often comprised of a series of frequent internal checks, such as system inspections, periodic calibrations, and routine maintenance. Quality Assurance involves less frequent external checks on product quality and is used to evaluate the total quality control process.

These two functions form a control loop: When the evaluation function indicates that the data quality is inadequate, the control effort must be increased until the data quality is acceptable. In order to provide uniformity in the assessment and reporting of data quality, this procedure explicitly specifies the assessment methods for response drift and accuracy.

External quality assurance evaluations may include independent system audits, third party sampling and analysis, and/or comparisons to known calibration standards.

## B.) Quality Assurance Policy

Packaging Corp. of America's policy is to efficiently operate and maintain its facilities in accordance with good operating practices (GOP) and applicable environmental regulations.

C.) Objective of Quality Assurance Plan

The objective of this QA plan is to define the necessary activities that guarantee CEMS data quality is maintained at acceptable levels. The plan also provides the framework for implementing QA activities by addressing items such as documentation, training, corrective actions, and preventive maintenance measures.

D.) Scope of Quality Assurance Plan

The QA Plan goal is to obtain and evaluate emissions data of known and acceptable quality in support of the air pollution control equipment operation. The data obtained is used to demonstrate compliance with the following EPA, state and local emission and monitoring regulations:

40 CFR 60, Appendix B, Performance Specification 2 & 3  
40 CFR 60, Appendix F; Quality Assurance Procedures  
Packaging Corp. of America Operating Permit

E.) Document Control

This QA/QC Plan includes procedures that ensure changes and revisions to this plan are communicated to all appropriate individuals. The Plant Manager will be responsible for ensuring that all changes and revisions are incorporated in the basic document. Periodic review of this QA Plan will help to insure that the QA process is working to provide efficient notice of required actions. Whenever inaccuracies occur for two consecutive quarters, Packaging Corp. of America must revise the current procedures or modify or replace the CEMS to correct the deficiency causing the excessive inaccuracies. The procedures must be kept on record and available for inspection by the enforcement agency.

## Section 2 Description of Facility and CEMS

### A.) Facility

EU Boiler 4A is a Natural Gas and Biogas Fired Babcock and Wilcox Model No. FM120-97 boiler. The boilers maximum capacity is 227 MMBtu/hr and is equipped with low NOx burners.

### B.) Organization and Responsible Individuals:

Certain individuals and groups at the facility will have designated responsibilities to ensure that QA/QC activities are performed as required by this QAP program. The following is a typical organizational structure of responsibilities.

Mill Manager

Engineering/Technical Services Manager

Technical Services Manager

Environmental Manager

Electrical Maintenance Superintendent

Environmental Manager:

- Oversees the CEMS QA/QC program.
- Reviews all plans and reports for accuracy.
- Prepares certification/recertification applications and notifications to required regulatory agencies.
- Stays abreast of EPA regulation updates that may affect the CEMS programs and interprets as required.
- Coordinates and schedules CEMS audits, diagnostic tests and certification/recertification tests as required.
- Reviews the quarterly CEMS reports from each plant prior to submittal.
- Submits quarterly reports and certification/recertification test results to the applicable regulatory agencies.
- Support and provides training in the administration and maintenance of the CEMS QAP and generic CEMS Standard Operating Procedures (SOP) documents.
- Reviews CEMS data for validity and makes any necessary corrections so the proper data will be entered in the quarterly reports.
- Ensures records are maintained for out-of-control conditions.
- Notifies the Plant Manager of any abnormal conditions that cannot be resolved within existing CEMS procedures in a reasonable amount of time.
- Maintains files of all plant CEMS data (hardcopy and electronic), reports, calibration gas certificates, etc. for three years as required by the EPA (or as applicable to local regulatory requirements).
- Notifies appropriate plant personnel of scheduled CEMS audits and certification/recertification tests.
- Arranges for support needed by contractor for periodic audits and certification/recertification tests.
- Provides plant resources to assist contractors during audits and certification/recertification testing.

Plant Manager:

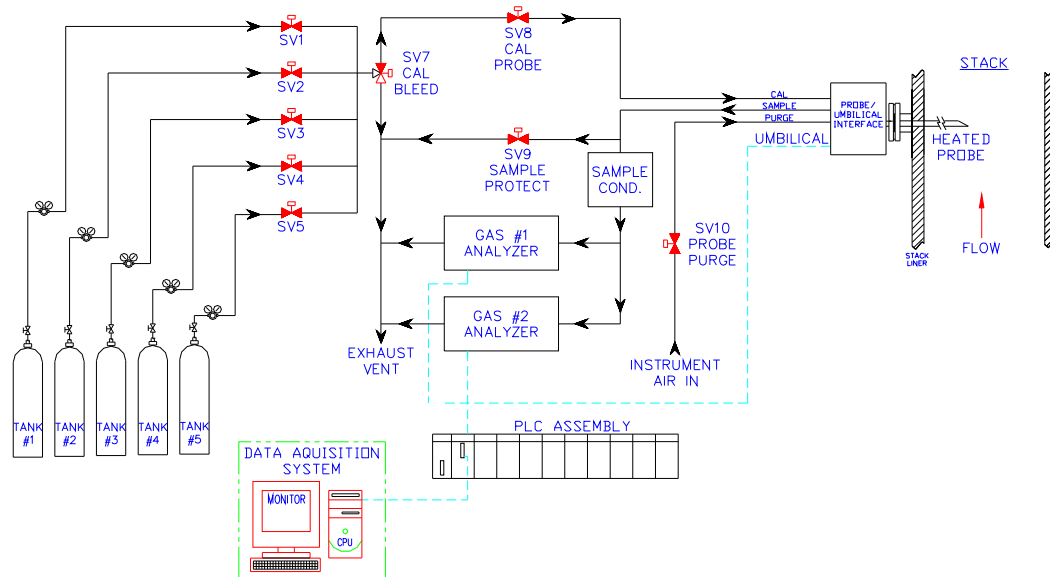
- Designates and manages manpower and other resources needed to properly maintain and operate the CEMS.
- Reviews and approves all plant-specific CEMS plans, procedures, and reports.
- Ultimately responsible for ensuring that all routine preventive maintenance is completed on schedule.

Technician or Operator:

- Perform the daily checks on CEMS systems.
- Perform regular maintenance on equipment as recommended by each manufacturer.
- Address and report any abnormal conditions to the Plant Manager.
- Make appropriate entries into the maintenance log.
- Maintain the spare parts inventory.
- Maintain audit filter certifications, if applicable.

C.) CEMS Overview

The CEMS is an integrated system manufactured by Monitoring Solutions, Inc. whose headquarters are based in Indianapolis, IN. The following figure presents a simplified illustration of CEMS gas flow (reference system drawings for specific component detail).



**Figure 2-1. General CEMS Overview**

CEMS (Continuous Emission Monitoring System) - performs the extractive sampling and measuring of the flue gas. The *Sample probe* is inserted into the gas stream and extracts a continuous sample of concentrated flue gas. The sample pump creates a pressure differential (vacuum) used to extract gas from the stack. The extracted sample is transported via the *umbilical system* through a *gas sample conditioner* and *gas control panel* to specific *gas analyzers*.

CEMCON (Continuous Emission Monitoring CONTroller System) - receives and stores data generated by the CEMS and automatically controls CEMS operations such as system purge, sample air flow, calibration, and detection of alarm conditions. In addition, it provides the communication link between CEMS and CEMDAS. The CEMCON system consists of a PLC controller with power supply and a multifunction keypad for operator interface.

CEMDAS (Continuous Emission Monitoring Data Acquisition System) - retrieves the data stored by the CEMCON and performs the required calculations to determine if the readings are within required limits. The system is designed to provide alarm messages and signals in the event the results do not meet applicable requirements. CEMDAS can also generate the required reports used in EPA audits and in evaluating system operability.

A complete set of operation and maintenance manuals for all components of the system is maintained by the Electrical Maintenance Superintendent. These manuals provide complete descriptions of the system and components including theory, installation, operation, and maintenance.

D.) Brand-Gaus Model 4705 O<sub>2</sub> Analyzer



**Figure 2-2. Brand-Gaus Model 4705 O<sub>2</sub> Analyzer**

1) Specifications

Measurement technology	Zirconium oxide cell
Measurement range	0 to 25 % O <sub>2</sub>
Full scale range	25.0 % O <sub>2</sub>
Zero noise	< 0.02 %O <sub>2</sub>
Zero calibration drift	Better than ± 0.1 %O <sub>2</sub>
Span noise	< 0.02 %O <sub>2</sub>
Span calibration drift	Better than ± 0.1 %O <sub>2</sub>
Linearity error	< 1% of high calibration gas value
Interference (sum of all interferences)	< 1% of measured value for typical applications
Response time	T <sub>95</sub> < 10 seconds
Sample Flow rate	0.2 to 10 SLPM

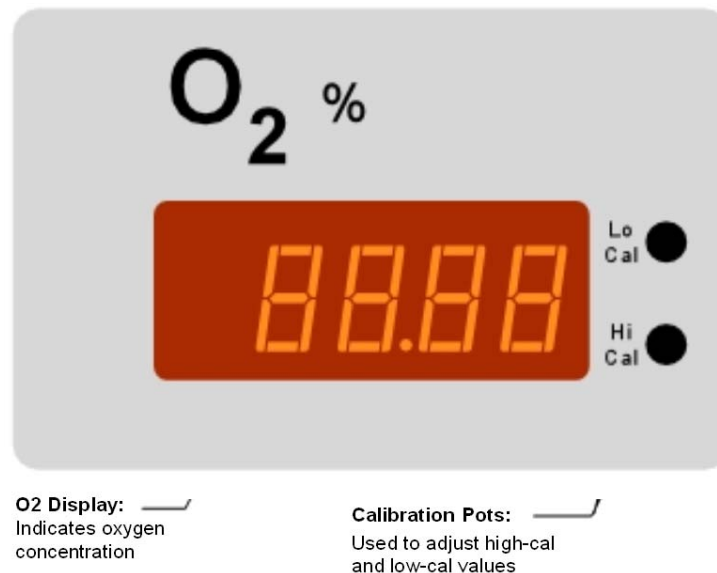


2) Theory of Operation

The oxygen measurement makes use of the fact that zirconium conducts oxygen ions when heated above 600°C. Platinum electrodes on the interior and exterior of a zirconium oxide tube provides a catalytic surface for the exchange of oxygen molecules and are transported through the body of the zirconium oxide. This charge transport ultimately sets up an electric potential across the electrodes that is proportional to the log of the ratio of oxygen concentrations on each side of the oxide. Thus, if a reference gas (usually instrument air at 20.9 %O<sub>2</sub>) flows across the inner electrode, the concentration of sample gas flowing across the outer electrode can be determined. In a conventional zirconium-oxide oxygen analyzer, this voltage is exponentiated to determine the concentration. This is done within the on-board microprocessor.

In the Brand-Gaus Model 4705, a second zirconium-oxide cell is ganged together to pump oxygen into the first cell, which is maintained at a constant voltage. The amount of oxygen needed to maintain the primary cell at the operating point is a more sensitive measurement of sample concentration, and allows for measurement at zero oxygen. This pump signal is carefully measured and related back to the sample concentration

3) Front Panel Controls



**Figure 2-3. Model 4705 Front Panel Controls**

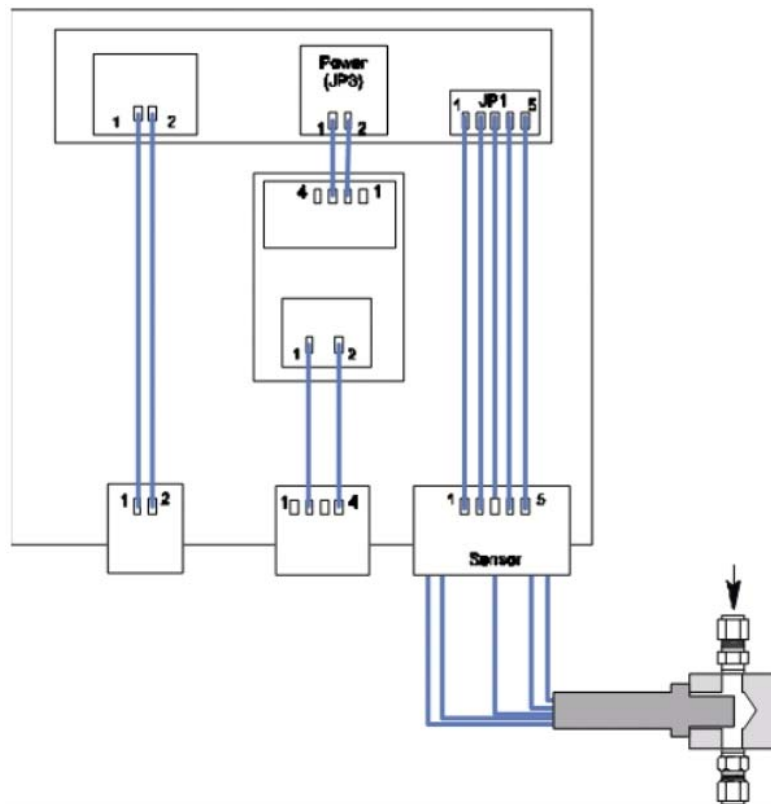


Figure 2-4. Model 4705 Wiring Diagram

4) Analyzer Setup

To ensure the quickest and most reliable startup, please follow the steps below in the order shown.

- a.) Apply power and sample to analyzer
  - (1) Connect sensor (if external), analog signals, and AC wiring to the analyzer as depicted in the accompanying wiring diagram.
  - (2) Supply a metered amount of sample to the analyzer and verify the Sample flow. Meter should read be between 0.2 and 10 SLPM.
  - (3) Apply power to the instrument (85 to 250 VAC, 50-60 Hz).

**Warning: This instrument is designed for use with 85 to 250 AC input power only. Serious equipment damage and/or injury will occur if it is connected to improper power.**

- (4) After a few seconds, the oxygen concentration display will illuminate. The display will move from zero up to the approximate sample value in about one minute. It will fully warm-up in approximately 30 to 60 minutes.
- b.) Calibrate the analyzer.

5) Calibration

After installation and at least a 1-hour warm up period, the instrument can be calibrated via the following procedure.

**Note:** The Brand-Gaus oxygen analyzer calibrations are generally very stable. If the calibration appears to have drifted significantly, or requires frequent adjustment, do not recalibrate the unit. Check for analyzer malfunction and/or check the sample delivery system for leaks or other problems.

c.) High calibration:

- (1) Flow high calibration gas through the sample handling system and analyzer.
- (2) Wait approximately two minutes or until reading settles.
- (3) Adjust the reading with the HIGH CAL adjustment until the display indicates the concentration of the calibration gas. The calibration value is then stored.

d.) Low calibration:

- (1) Flow low calibration gas through the sample handling system and analyzer. See note above, do not attempt to calibrate the analyzer below 1%.
- (2) Wait approximately two minutes or until reading settles.
- (3) Adjust the reading with the LOW CAL adjustment pot until the display indicates the concentration of the calibration gas. The calibration value is then stored.

e.) Check the high calibration point and recalibrate if required. It may be necessary to repeat the first two steps iteratively if the calibration has been changed dramatically for some reason.

E.) Thermo Fisher Scientific Corp. Model 42i-LS NO<sub>x</sub> Analyzer



Figure 2-5. Model 42i Low Source NO-NO<sub>2</sub>-NO<sub>x</sub> Analyzer

1.) Principle of Operation

The analyzer is an analytical instrument capable of measuring oxides of nitrogen at levels from 0 to 500 parts per million. The Model 42i-LS offers fast response time, increased sensitivity, linearity through all ranges, and simplicity of operation. It features a sample pump, independent NO<sub>x</sub> ranges, and a replaceable converter cartridge.

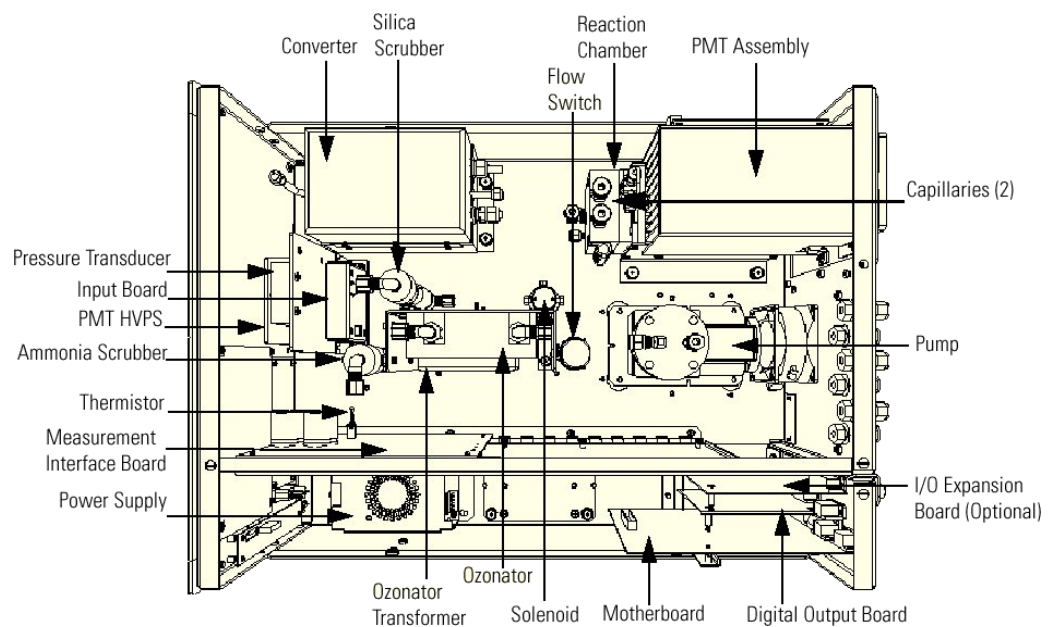


Figure 2-6. Component Layout

The Model 42i-LS operates on the principle that nitric oxide (NO) and ozone (O<sub>3</sub>) react to produce a characteristic luminescence with an intensity linearly proportional to the NO concentration. Infrared light emission results when electronically excited NO<sub>2</sub> molecules decay to lower energy states. Specifically,

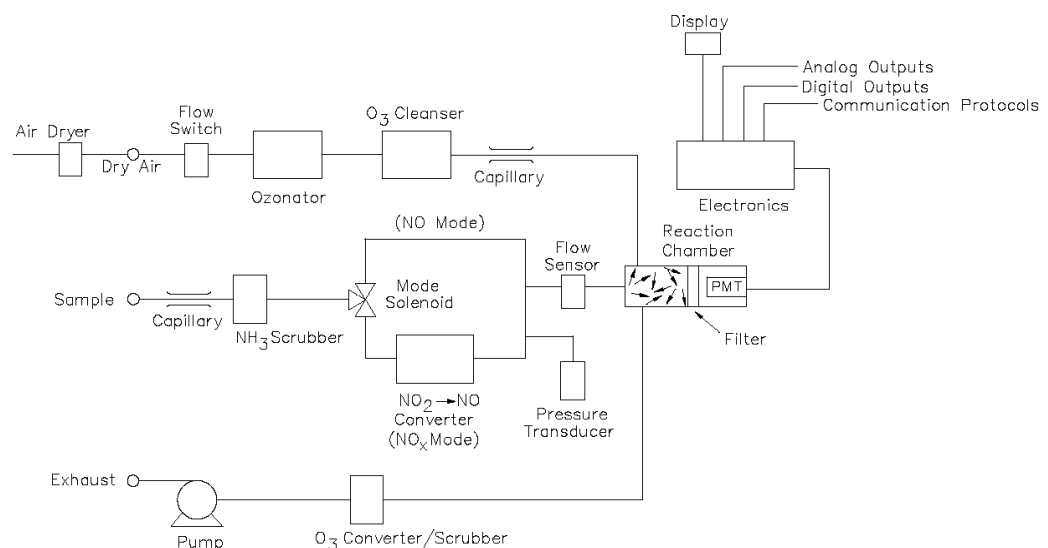


Nitrogen dioxide (NO<sub>2</sub>) must first be transformed into NO before it can be measured using the chemiluminescent reaction. NO<sub>2</sub> is converted to NO by a stainless steel NO<sub>2</sub>-to-NO converter heated to about 625°C (the optional molybdenum converter is heated to 325°C).

The ambient air sample is drawn into the Model 42i-LS through the sample bulkhead. The sample flows through a capillary, and then to the mode solenoid valve. The solenoid valve routes the sample either straight to the reaction chamber (NO mode) or through the NO<sub>2</sub>-to-NO converter and then to the reaction chamber (NO<sub>x</sub> mode). A flow sensor prior to the reaction chamber measures the sample flow.

A permeation dryer provides a continuous stream of dry air to the ozonator (using the selective water permeation characteristics of the dryer.) The ozonator generates the ozone needed for the chemiluminescent reaction. At the reaction chamber, the ozone reacts with the NO in the sample to produce excited NO<sub>2</sub> molecules. A photomultiplier tube (PMT) housed in a thermoelectric cooler detects the luminescence generated during this reaction. From the reaction chamber, the exhaust travels through the ozone (O<sub>3</sub>) converter to the pump, and is released through the vent.

The NO and NO<sub>x</sub> concentrations calculated in the NO and NO<sub>x</sub> modes are stored in memory. The difference between the concentrations is used to calculate the NO<sub>2</sub> concentration. The Model 42i-LS outputs NO, NO<sub>2</sub>, and NO<sub>x</sub> concentrations to the front panel display, the analog outputs, and also makes the data available over the serial or Ethernet connection.



**Figure 2-7. Internal Flow Schematic**

2.) Maintenance Schedule

The typical preventative maintenance required for the analyzer involves changing the teflon filter at the sample inlet, typically on a quarterly basis, but more frequently if necessary. This part should be considered when determining spare parts requirements.

Operation of the Thermo Fisher Scientific Corp. Model 42i-LS NO<sub>x</sub> analyzer is described in greater detail in the *Thermo Fisher Scientific Corporation Model 42i Low Source Instruction Manual, NO-NO<sub>2</sub>-NO<sub>x</sub> Analyzer* which is included with this manual.

F.) CEMDAS 2000™ Data Acquisition System

CEMDAS 2000™ is an automated PC-based data acquisition system custom designed for each client. Its primary functions are the acquisition, processing, storage, and reporting of CEMS data and related information. CEMDAS 2000™ facilitates all of the data reporting requirements necessary to establish compliance with EPA, state, and local operation permit limits. Coupled with a Monitoring Solutions PLC controller, the CEMDAS 2000™ package is a powerful, user-friendly Windows-based system for monitoring, recording, and reporting stack emission information. CEMDAS 2000™ receives analog and status signals from the CEMS components such as monitors and the PLC. CEMDAS 2000™ uses these inputs to prepare reports, summarize the data and information derived from the input signals.

CEMDAS performs two primary reporting functions: providing a picture in real time of the emissions process and generating reports of current and historic data. Current status may be viewed and reports requested at the system console and accessed by phone via modem (external phone line required for modem access). Reports can be generated automatically or manually, and sent to a printer, the screen, or a disk file. Available reports include minute, hourly, daily, monthly and quarterly reports, along with RATA and CGA/Linearity reports.

## Section 3 Quality Assurance Activities

### A.) Overview

The purpose of these procedures is to ensure that the CEMS installed at the Packaging Corp. of America - Filer City, MI facility operates in such a manner as to provide accurate and reliable data.

**Table 3-1. Quality Assurance Checklist**

<i>Activity: Quality Assurance</i>	Quarterly	Annual
Calibration Gas Audit	X*	
RATA		X

\*3 out of 4 quarters

### B.) CEMS Analyzer Summary

**Table 3-2. CEMS Analyzer Summary**

<b>Pollutant or Diluent</b>	<b>Full Scale Range</b>	<b>Full Scale Span</b>	<b>Analyzer Mfg</b>	<b>Model</b>
NO <sub>x</sub>	0-1000ppm	500ppm	TECO	42C
O <sub>2</sub> Analyzer	0-25%	25%	Brand Gaus	4705

### C.) Daily Calibration Drift Check

#### 1.) Calibration Gases

Calibration gases shall be NIST/EPA approved Standard Reference Materials, Certified Reference materials per 40 CFR 60, Appendix F, Section 5.1.2 (3). A separate calibration gas cylinder must be used for each concentration.

#### 2.) Calibration Error Test for Pollutant and Diluent Monitors – Part 60

Perform a two-point calibration error test on each pollutant and diluent gas monitor at least once per unit operating day (24 hours). A separate calibration gas cylinder must be used for each audit point. The following concentrations must be used in accordance with 40 CFR Part 60, Appendix B, Performance Specification 2, Section 6.1.2:

**Table 3-3. Daily Calibration gas allowable ranges**

<b>Audit Level</b>	<b>40 CFR 60</b>
Low-level	0-20% of span
High-level	50-100% of span

If a monitor fails a calibration error test, corrective action must be performed and documented, and a successful daily calibration error test performed before data can be considered valid. The CEMS calibration must, as minimum, be adjusted whenever the daily zero (or low-level) CD or the daily high-level CD exceeds two times the limits of the applicable PS. The Monitoring Solutions CEMS Operations and Maintenance Manual provides detailed calibration procedures.

3.) Out-of-Control Period for Pollutant and Diluent Analyzers – Part 60

An out-of-control period occurs for a pollutant or diluent analyzers when the daily low-level or daily mid-level CD exceeds two times the limit for five consecutive days, or four times the limit for one day.

**Table 3-4. Out of Control Limits for Pollutant and Diluent Analyzers**

Analyzer	Daily Calibration Drift	Out-of Control	
		Five (5) consecutive daily calibrations	Any daily calibration
NO <sub>x</sub>	≤ 2.5 % of Span	≥ 5.0 % of Span	≥ 10.0% of Span
O <sub>2</sub>	≤ 0.5% O <sub>2</sub> (Absolute)	≥ 1% O <sub>2</sub> (Absolute)	≥ 2.5% O <sub>2</sub> (Absolute)

Monitor adjustments, calibration, or repairs must be performed whenever CD limits are exceeded. The CD check must be repeated after any adjustment or repair. Whenever the CD is exceeded, a warning is displayed on the computer screen and a message is logged to a printable alarm file.

The beginning of the out-of-control period is the time corresponding to the completion of the fifth, consecutive daily CD check with a failed CD or the time corresponding to the completion of the daily CD check preceding the daily CD check that results in a failed CD. The end of the out-of-control period is the time corresponding to the completion of appropriate adjustment and subsequent successful CD check.

Any time the CEMS is declared "out of control" or "out of service", it cannot be used to show compliance with permit limits or data capture requirements and shall be considered downtime for reporting purposes. Therefore, corrective action must be performed as soon as possible after determining that the CEMS is not operating to within required specifications.

D.) Cylinder Gas Audit: CEMS – Part 60

A quarterly cylinder gas audit must be performed on each CEMS at least once every calendar quarter, during three quarters of every year. Each CGA shall not be performed during a quarter in which a RATA is being performed.

Calibration Gases – Part 60

Calibration gases shall comply with per 40 CFR 60, Appendix F, Section 5.1.2 (3). Use audit gases that have been certified by comparison to National Bureau of Standards (NBS) gaseous Standard Reference Materials (SRM's) or NBS/EPA approved gas manufacturer's Certified Reference Materials (CRM's) following EPA Traceability Protocol No. 1. As an alternative to Protocol No. 1 audit gases, CRM's may be used directly as audit gases. A separate calibration gas cylinder must be used for each audit point.



1.) Procedure

The known gases are individually injected at the probe to be sampled through the entire sampling train, as the path used in extracting effluent from the process. Gas is injected until a stable reading is obtained.

The procedure is conducted as follows:

- a) Connect all quarterly gas cylinders to the system and turn them on.
- b) Verify/Set the corresponding calibration gas cylinder values in the calibration configuration menu in the DAS.
- c) Then initiate the sequence by selecting the CGA option on the CEMDAS screen or the OIT.
  - i) Each gas is routed through the system until a stable response is achieved.
  - ii) Values are recorded as the system is allowed to operate in a normal sampling and analysis manner without adjustment.
- d) The sequence is repeated through three audit runs.

For each audit cylinder (or audit point), the percent accuracy is determined by using the following equation:

$$A = \frac{(C_m - C_a)}{C_a} \times 100$$

Where:

A = Accuracy of CEMS (%)

C<sub>m</sub> = Average CEMS response during audit in units of applicable standard or concentration

C<sub>a</sub> = Average audit (cylinder gas certified value) in units of applicable standard or concentration

Accuracy (A) value of  $\pm 15\%$  or less is considered acceptable for criteria pollutants gas. If excessive inaccuracies occur for two consecutive quarters, Packaging Corp. of America must revise the QC procedures or modify or replace the CEMS.

Measurements are calculated and recorded by the PLC. The audits serve as verification of the accuracy of the CEMS data. Various reports can be generated to support audits and are kept on file by Packaging Corp. of America. The manufacturer's certification statement (if applicable) for the calibration gases are also included.

E.) Relative Accuracy Test Audit

1.) Relative Accuracy Test Audit

At least once in every four calendar quarters (except during a quarter in which the unit either did not run or in which a CGA is performed), conduct a Relative Accuracy Test Audit (RATA), as described in 40 CFR 60, App. B, PS 2, to assess the accuracy of the CEMS relative to the appropriate EPA reference methods used in determining effluent concentrations. Measured inaccuracy exceeding 20% of the mean value of the reference method results or 10% of the applicable standard, whichever is greater, requires corrective action to be taken. When appropriate, additional audits are conducted to demonstrate the effectiveness of the repair or adjustment.

## Section 4 Quality Control Activities

A complete set of Operation and Maintenance manuals for all components of the CEMS are kept in the Maintenance Department.

### Quality Assurance/Quality Control Plan

Each source owner or operator must develop and implement a QC program. As a minimum, each QC program must include written procedures which should describe in detail, complete, step-by-step procedures and operations for each of the following activities:

1. Calibration of CEMS.
2. CD determination and adjustment of CEMS.
3. Preventive maintenance of CEMS (including spare parts inventory).
4. Data recording, calculations, and reporting.
5. Accuracy audit procedures including sampling and analysis methods.
6. Program of corrective action for malfunctioning CEMS.

#### A.) QC Activities

An activity list summarizing various routine activities is presented in the following table. The Plant Manager is ultimately responsible for scheduling routine maintenance and ensuring that all routine preventive maintenance is completed on schedule.

Table 4-1. Quality Control Checklist

<i>Activity: Quality Control</i>
DAS Alarms Status
Analyzer Alarms Status
Zero Value Cal Check Passed/Record
Span Value Cal Check Passed/Record
Calibration gas cylinder(s)
Clean/Replace Filters - Analyzers
Clean/Inspect Sample Conditioner
Replace/Clean Filters - Probe
Change Air System Filters/Scrubbers
Clean Interior of Enclosure/Rack
Printer Maintenance

#### B.) CEMS Maintenance

All maintenance of the CEMS can be classified into one of these three areas:

1. Routine preventive maintenance. .
2. Non-routine preventive maintenance.
3. Corrective Maintenance.

C.) Spare Parts Inventory

The Mill minimizes monitoring equipment downtime by maintaining spare parts for “routine” repairs or otherwise predictable malfunctions. The spare parts inventory was established based on manufacturers’ recommendations and past operating history. The spare parts inventory is maintained in a common equipment area and is managed by the Maintenance Department. A spare parts list is available upon request from the Maintenance Department.

## Section 5 Data Recording and Reporting

### A.) General Requirements

An effective quality assurance program communicates the results of QA/QC activities to all affected parties. This QA plan makes provisions for the proper recording and communication of QA and QC information and provides the necessary mechanisms for triggering corrective actions based on the contents of QA/QC reports.

Documentation of QA/QC data and information is an integral part of this QA Plan. This section describes reports and other records that provide appropriate documentation of QA/QC activities. *PACKAGING CORP. OF AMERICA* utilizes two primary means of documentation:

1. Data Acquisition System - CEMDAS 2000™
2. Manually prepared QA/QC forms, logs and reports.

All data must be available for review for a minimum of five (5) years from the date of each record and be available to the Division upon request at any time. It can be presented as either a computerized database or printed emission logs.

All reporting is to be on an Eastern Standard Time basis.

The data acquisition system must be capable of reading all values over the full range of each measurement device and must create a permanent record of all required raw and calculated data for storage, review and reporting. In addition a continuous readout in units of each applicable emission standard or operating criteria is required.

### B.) Monitoring/Recordkeeping

Monitoring and recordkeeping requirements are defined in Renewable Operating Permit, MI-ROP-B3692-2009, incorporated here by reference.

### C.) Reporting Requirements

Reporting requirements are defined in Renewable Operating Permit, MI-ROP-B3692-2009, incorporated here by reference.