

**PCA Filer City, Michigan Mill  
Copeland Reactor CAM Plan (EUCOPELAND+DISTANK)  
Particulate Matter (PM) Control**

**I. BACKGROUND**

**A. Emissions Unit**

Description: The Copeland Reactor is a fluidized bed reactor used to recover sodium carbonate from spent pulping liquor (black liquor). The Copeland Reactor is equipped with two cyclones, a venturi scrubber, wet electrostatic precipitators (WESP), and regenerative thermal oxidizer (RTO). The venturi scrubber controls the PM emissions. The WESP serves as protective equipment to prevent fouling of the RTO ceramic saddle bed (where the RTO was installed to comply with VOC destruction requirements).

Identification: EUCOPELAND+DISTANK

Facility: Packaging Corporation of America (PCA) – Filer City, Michigan Mill

**B. Applicable Regulations, Emission Limit, and Monitoring Requirements**

Regulation No.: R 336.1331(1)(a)

Emission Limits: 0.20 lb PM/1000 lbs exhaust corrected to 50% excess air

Monitoring Requirements: Monitor and record the differential pressure across the throat of the venturi scrubber at least once every 15 minutes.

**C. Control Technology (Particulate Matter)**

- Venturi Scrubber

**II. MONITORING APPROACH**

The key elements of the monitoring approach are presented below:

**A. Indicator**

The differential pressure across the venturi scrubber.

**B. Measurement Approach**

The differential pressure across the venturi scrubber is measured via a differential pressure transmitter.

**C. Indicator Range**

An excursion is defined as a one hour average differential pressure across the venturi scrubber less than 38 inches w.c.

**D. Performance Criteria**

Data Representativeness:	The differential pressure transmitter monitors the static pressures upstream and downstream of the scrubber’s venturi throat.
Verification of Operational Status:	A differential pressure transmitter is currently installed, operated and maintained.
QA/QC Practices and Criteria:	Annually and as needed, the instrument is cleaned, zeroed out, and calibration checked.
Monitoring Frequency and Data:	Measured continuously.
Collection Procedure:	Measured continuously.

**III. JUSTIFICATION**

**A. Background**

The Copeland Reactor is equipped with a venturi scrubber in order to control emissions PM.

**B. Rationale for Selection of Performance Indicator**

A differential pressure transmitter continuously monitors the venturi scrubber to indicate proper functioning of the scrubber and to assure compliance with the PM limit.

**C. Rationale for Selection of Indicator Level**

Differential pressure readings within the range specified indicate that the venturi scrubber is properly functioning and effectively controlling emissions of PM.

**PCA Filer City, Michigan Mill  
Soda Ash Silo Baghouse CAM Plan (EUSODA-ASH)  
Particulate Matter (PM) Control**

**I. BACKGROUND**

**A. Emissions Unit**

Description:	The baghouse for the Soda Ash Silo (EUSODA-ASH) is subject to CAM.
Identification:	EUSODA-ASH
Facility:	PCA Filer City, Michigan Mill

**B. Applicable Regulations, Emission Limit, and Current Title V Monitoring Requirements**

Regulation No.:	R 336.1331(1), R 336.1201
Emission Limits:	0.10 lb/1000 lb exhaust gas calculated on a dry basis
Monitoring Requirements:	The differential pressure across the baghouse shall be continuously monitored and recorded once per day.

**C. Control Technology**

Baghouse

**II. MONITORING APPROACH**

The key elements of the monitoring approach are presented below:

**A. Indicator**

Pressure drop across the baghouse and the absence of visible emissions.

**B. Measurement Approach**

Differential pressure gauges.

**C. Indicator Range**

Pressure drop should be greater than or equal to 0.0 inches water column and less than or equal to 15 inches water column.

**D. Performance Criteria**

Data Representativeness:	Pressure drop is measured as the difference in pressure between the inlet and outlet of the baghouse.
--------------------------	-------------------------------------------------------------------------------------------------------

Verification of Operational Status:	Not applicable. Applies only to new or modified monitoring systems. The pressure differential gauges for the soda-ash silo baghouse are existing monitors and do not need to be modified.
QA/QC Practices and Criteria:	Inspections of the baghouse are conducted and any problems are noted and corrected promptly.
Monitoring Frequency and Data Collection Procedure:	Pressure drop across the baghouse is monitored and recorded daily while the unit is operating. Readings are also recorded continuously in the process information system for real-time feedback.

### III. JUSTIFICATION

#### A. Background

The soda-ash silo is used to store ash collected from the boilers. The silo is equipped with a baghouse to control particulate matter (PM) emissions.

#### B. Rationale for Selection of Performance Indicator

Pressure drop across a baghouse is an indicator of the resistance to flow through the control device and the effectiveness of the cleaning system. The baghouse is designed to operate within a certain pressure drop range. Operation outside of that range is an indication that the baghouse is not performing as designed and may not be effectively removing particulate matter from the gas stream. A high pressure drop can indicate that the bags have become blinded, or the bag cleaning system or dust removal system is malfunctioning. A low pressure drop can indicate that the bags are being over-cleaned (the bags must be coated with some dust to clean effectively), there are holes or tears in one or more bags, that one or more bags have come loose, or that the pressure monitoring device is plugged.

#### C. Rationale for Selection of Indicator Level

The pressure drop indicator ranges selected for the baghouse are based on a review of the differential pressure at the baghouse during transfers.

**PCA Filer City, Michigan Mill  
Fly Ash Silo Baghouse CAM Plan (EUFLYASH)  
Particulate Matter (PM) Control**

**I. BACKGROUND**

**A. Emissions Unit**

Description: The baghouse for the Fly Ash Silo (EUFLYASH) is subject to CAM.

Identification: EUFLYASH

Facility: PCA Filer City, Michigan Mill

**B. Applicable Regulations, Emission Limit, and Current Title V Monitoring Requirements**

Regulation No.: R 336.1331(1), R 336.1201

Emission Limits: 0.10 lb/1000 lb exhaust gas calculated on a dry basis

Monitoring Requirements: Monitor and record pressure drop across baghouse once per day when the fly ash silo is operating.

**C. Control Technology**

Baghouse

**II. MONITORING APPROACH**

The key elements of the monitoring approach are presented below:

**A. Indicator**

Pressure drop across the baghouse and the absence of visible emissions.

**B. Measurement Approach**

Differential pressure gauges.

**C. Indicator Range**

Pressure drop should be greater than or equal to 2.0 inches water column and less than or equal to 6.0 inches water column.

**D. Performance Criteria**

Data Representativeness: Pressure drop is measured as the difference in pressure between the inlet and outlet of the baghouse.

Verification of Operational Status: Not applicable. Applies only to new or modified monitoring systems. The pressure differential gauge for the fly ash silo baghouse is an existing monitor and does not need to be modified.

QA/QC Practices and Criteria:	Calibrate, maintain, and operate equipment and instrumentation in accordance with manufacturer’s specifications. Inspections of the baghouse are conducted and any problems are noted and corrected promptly.
Monitoring Frequency and Data Collection Procedure:	Pressure drop across the baghouse is monitored and recorded daily while the unit is operating. Readings are recorded and maintained on a log sheet.

**III. JUSTIFICATION**

**A. Background**

The fly ash silo is used to store fly ash collected from the boilers. The silo is equipped with a baghouse to control particulate matter (PM) emissions.

**B. Rationale for Selection of Performance Indicator**

Pressure drop across a baghouse is an indicator of the resistance to flow through the control device and the effectiveness of the cleaning system. The baghouse is designed to operate within a certain pressure drop range. Operation outside of that range is an indication that the baghouse is not performing as designed and may not be effectively removing particulate matter from the gas stream. A high pressure drop can indicate that the bags have become blinded, or the bag cleaning system or dust removal system is malfunctioning. A low pressure drop can indicate that the bags are being over-cleaned (the bags must be coated with some dust to clean effectively), there are holes or tears in one or more bags, that one or more bags have come loose, or that the pressure monitoring device is plugged.

**C. Rationale for Selection of Indicator Level**

The pressure drop indicator ranges selected for the baghouse are the manufacturer’s recommendations to ensure effective particulate removal based on the design conditions for each filter.