Appendix E

COMPLIANCE ASSURANCE MONITORING PLAN

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COMPLIANCE ASSURANCE MONITORING PLAN
Middletown Coke Company

Background

Emission Unit

Description: Spray Dryer Baghouse Flue Gas Desulfurization (FGD) System
Operation Identification: FGD System
Facility: Middletown Coke Company, Butler County, Ohio

Applicable Regulation and Emission Limit

Regulation Number: None
Pollutant: SO_2 & PM/ PM_{10}
Emission limits:
Annual Average SO_2 Limit – 701 tons/year, excluding FGD maintenance (equivalent to annual average of 160 lb/hour)
24-hour Average SO_2 Limit – 192 lb/hour
Average Filterable PM/PM_{10} Limit – 10.7 lb/hour
Average Filterable PM/PM_{10} Limit – 46.9 tons/year

Applicable Monitoring Requirements

None. Propose to use procedures in 40 CFR 60, Appendix B

Control Technology

Spray Dryer
Pulse Jet Baghouse operated under negative pressure

Monitoring Approach

	Indicator No. 1	**Indicator No. 2**	**Indicator No. 3**
I. Indicator	SO_2 Concentration	Pressure Drop	Broken bag detector
Measurement Approach	SO_2 concentration is measured with a CEMS meeting: 1. 40 CFR 60 Appendix B, Performance Specification (PS): • PS2 – Specification for SO_2 CEMS in Stationary Sources 2. 40 CFR 60, Appendix F: Quality Assurance Procedures. 3. Target >95% availability	Pressure drop across the baghouse is measured continuously by using a magnahelic gage or pressure transducer.	Probe to measure triboelectric signal (or alternate in-situ device) will be installed in the stack or baghouse exhaust duct to monitor for bag failure.

	Indicator No. 1	Indicator No. 2	Indicator No. 3
II. Indicator Range	An excursion is defined as 24-hour average greater than 192 lb SO_2/hour; excursions trigger an inspection, corrective action, and reporting, requirement. Excursions do not include periods where the FGD system is being maintained (e.g., atomizer change-out in the spray dryer). SO_2 range (0-200 ppm) Flow Rate range (0-100 ft/sec)	An excursion is defined as a pressure drop greater than 15 or less than 5 in. H_2O. Excursion triggers an inspection, corrective action, and reporting, requirement.	To be established during setup. Sensitivity and response time will be established that will enable the system to differentiate between spikes after bag cleaning and higher emissions associated with broken bags or similar events. An excursion will be defined as a percent of scale value that persists for a period of time. Excursions trigger an inspection, corrective action, and reporting.
III. Performance Criteria			
A. Data Representativeness	Probes will be located as described in Performance Specification 2. Representativeness validated by RATA testing.	Pressure taps will be located in the baghouse inlet and outlet plenums to measure overall pressure drop. The gage will have a minimum accuracy of 0.5 in H_2O.	An in-situ probe will be used. A device will be selected that produces an electronic signal proportional to particulate concentration (as long as factors such as velocity, humidity, and particle size remain relatively constant).
B. Verification of Operational Status	Daily calibration and observation	Recorded each day	NA
C. QA/QC Practices and Criteria	1. Daily Calibration Drift (CD) evaluation (with instrument being adjusted whenever the daily CD exceeds 10% range) 2. Quarterly Cylinder Gas Audit (CGA) 3. Annual Relative Accuracy Test Audit (RATA) 4. Maintenance according to manufacturer's specifications	Calibrate the pressure gage annually. Maintenance according to manufacturer's specifications.	Probe will be inspected periodically for dust buildup. Monitor will be operated and calibrated according to manufacturer's instructions.
D. Monitoring Frequency	Continuous (target >95% availability)	Continuous	Continuous (target >95% availability)
E. Data Collection Procedures	SO_2 concentration, flow rate, and mass emission rate recorded automatically in a data acquisition system (DAS).	Record pressure drop every day.	Data will be recorded by CEM data logger or DAHS in control room.
F. Averaging Period	24-hour daily average and annual	None	None

I. Rationale for Selection

Procedures in EPA Performance Specifications, as the basis for NSPS monitoring, are generally acceptable for non-NSPS applications.

Pressure drop as measured by a gage or pressure transducer and relative change in particulate concentration as measured by a broken bag detector are appropriate indicators of baghouse performance as described in the EPA CAM Technical Guidance Document.

II. References

1. 40 CFR 60 Appendix B, Performance Specification (PS):
   - PS2- Specification for SO_2 CEMS in Stationary Sources
2. 40 CFR 60, Appendix F: Quality Assurance Procedures
3. EPA Office or Air Quality Planning and Standards Emission Measurements Center, *Technical Guidance Document: Compliance Assurance Monitoring, Revised Draft,* August 1998.

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