ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

Summary Report Relative to Permit Application

Submitted By: Ash Grove Cement Company
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CSN: 410001 **Permit No.:** 75-AR-8 **Date Issued:** 6/15/94

Submittals: August 31, 1992; April 23, 1993

Summary

The Ash Grove Cement Company (AGC) owns and operates a portland cement plant near Foreman, Arkansas. This facility is a "major stationary source" subject to the requirements of the Arkansas Plan of Implementation for Air Pollution Control (State Implementation Plan, or SIP). AGC is also subject to federal air pollution control regulations specific to portland cement plants, control of volatile organic compound (VOC) emissions, and "benzene waste operations".

In addition to traditional fuels such as coal and natural gas, AGC burns liquid and solid hazardous waste derived fuels (HWDF). AGC's use of HWDF is currently regulated by federal hazardous waste management regulations governing the burning of hazardous waste for energy recovery in boilers and industrial furnaces (Ref. 40 CFR 266, the "BIF Rule"). The BIF Rule was promulgated to meet specific requirements of Subtitle C of the federal Resource Conservation and Recovery Act (RCRA).

The raw materials used in the production of cement include chalk, sand, and iron ore. The chalk is received from a near-by quarry and stored in an A-frame structure. The sand and iron ore are stored in open piles. From the storage piles, the raw materials are transferred to bins in the mill building. The raw materials are proportioned, mixed with water, and ground into a slurry.

Installation: N/A **Operation:** N/A
Reviewed By: Mark McCorkle **Approved By:** J. B. Jones
Applicable Regulation: Air Code SIP NSPS NESHAP

The slurry is pumped to one of three rotary kilns, introduced into the upper end of the kiln and travels slowly toward the lower end. Coal, natural gas, and liquid HWDF are fired at the lower end of the kiln. Containerized solid HWDF is fed from a location in the mid-section of the kiln. Cement clinker is produced when the high temperature produced by the burning of the fuel causes the slurry to calcine. At the lower end of the kiln, the calcined material fuses together to form clinker.

The clinker is cooled, then mixed with gypsum, and sometimes chalk, to form cement. The exact proportions depend on whether portland cement or masonry cement is being made. The cement is ground to the desired fineness. After grinding, the cement is stored for later packaging and shipping.

As a result of the BIF Rule requirements, AGC has installed new continuous emissions monitoring systems (CEMS) on each of the three cement kiln exhaust stacks. Since the new monitoring equipment can also be used to obtain information on criteria pollutants regulated by the Air Permit, AGC has requested that Arkansas Air Permit 75-AR-7 be modified so that the Air Permit monitoring requirements for sulfur dioxide (SO_2), nitrogen oxides (NO_x) and carbon monoxide (CO) can be satisfied by the new CEMS. Under the previous Air Permit, a single monitoring system was shared by the three kilns. The monitoring systems described in this Permit provide emissions data for each kiln on a continuous basis.

When burning HWDF, stack concentrations of SO_2, NO_x, CO, total hydrocarbons (THC), and oxygen (O_2) are monitored and recorded on a continuous basis. If HWDF is not being burned, THC, and O_2 do not have to be monitored. Other kiln operating parameters are also continuously monitored and recorded. If, when burning HWDF, CO, THC or other operating parameters required to be monitored by the BIF Rule indicate that the kiln or control equipment is operating outside the range established during RCRA compliance tests, HWDF feed must be stopped. The CEMS and other monitoring devices must be routinely calibrated and maintained. At regular intervals, the CEMS are tested to ensure that the precision and accuracy of the reported values is maintained throughout the operating life of the equipment.

AGC is adding two product storage silos and related materials handling equipment to improve loading and shipping of finished product. Other materials handling equipment, used to store and offload clinker for shipment, is also being permitted. This new equipment is subject to the requirements of 40 CFR 60 Subpart F - Standards of Performance for Portland Cement Plants. This regulation limits the opacity of visible emissions of particulate from loading operations to a maximum of 10%. Opacity is a measurement of the visibility of emissions.

AGC is modifying four existing dust control baghouses (SN-67, SN-68, SN-69 and SN-70) in a manner that results in four new point-source discharge stacks located on the roof of the mill building. Previously, the particulate from these baghouses was vented to the interior of the building and regulated as fugitive emissions. While this modification does not increase potential emissions from the facility, it does increase the total mass emissions of particulate matter that are subject to specific Permit Conditions and tabulated in Table 1.

Two (2) existing liquid hazardous waste derived fuel storage tanks and six (6) proposed tanks are subject to the requirements of two separate federal air regulations [40 CFR 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984; and, 40 CFR 61 Subpart FF - Benzene Waste Operations]. Currently, VOC emissions from the existing tanks are controlled by a closed vent system that routes VOC emissions to a carbon adsorption control device that removes the VOC in the tank vent gas stream before venting to the atmosphere. When the carbon is saturated with VOC, it is removed and replaced. The carbon adsorption device is being replaced by a liquid nitrogen recovery condenser that will remove VOC contained in the vent gas stream and return it to the storage tanks. The replacement of the carbon adsorption device with the condenser will result in a decrease in VOC emissions. The carbon adsorption system will remain in place as a means of controlling emissions when the condenser system is being defrosted. When the proposed tanks are installed, the existing tanks will be removed from service and the nitrogen condenser system will be installed as the control device for the new tanks.

Several conditions contained in Air Permit 75-AR-7, the Permit preceding this revision, were imposed by ADPC&E's Air Division prior to the promulgation of the BIF Rule that AGC must now comply with. As part of this modification, the need to retain Air Permit conditions that have equivalent, or more stringent, requirements administered under the RCRA program has been evaluated. Where appropriate, these conditions have been either revised or removed. These changes have not resulted in any increase to the permitted potential or actual emission rates of pollutants from this facility.

Specific Conditions

1. Hazardous waste derived fuel (HWDF), coal, and natural gas are the only fuels that shall be introduced to the kilns.

2. The Permittee shall comply with all emission limits specified in Tables 1 and 2 herein. Table 3 is a summary of the total permitted emissions of the pollutants in Tables 1 and 2. When demonstrating compliance with these limits, the Permittee shall use the test methods delineated in Table 4, herein. Compliance tests are to be designed such that compliance with each limit is demonstrated either simultaneously, or, at substantially equivalent operating conditions. Stack tests conducted for the purpose of BIF Rule compliance demonstrations may be used to demonstrate compliance with specified limits if such tests are conducted in accordance with all applicable Conditions specified in this Permit.

3. The Permittee shall maintain and operate the continuous emission monitoring systems (CEMS), as described in its Air Permit modification application of August 28, 1992, for each kiln. The CEM for each kiln shall continuously monitor and record the stack gas concentrations of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and carbon monoxide (CO).

4. All continuous emission monitors that are used to demonstrate compliance with the mass emission limits contained in this Permit shall comply with the applicable conditions contained in **Requirements For Continuous Emission Monitors**, Attachment 1 to this Permit. The monitoring data collected by these instruments cannot be used to demonstrate compliance with Air Permit limits unless a reliable stack gas flow rate, determined by continuous monitor or other acceptable test method, is simultaneously determined and used to calculate and report mass emission limits based on the monitored stack concentration of the regulated pollutant. If conducted in accordance with all applicable Conditions of this Permit, Performance Specification Tests conducted for RCRA compliance demonstrations may be used to demonstrate compliance with this Condition.

5. The opacity of visible emissions from each source identified in Table 1 shall not exceed the corresponding percentage contained in Table 1. When demonstrating compliance with these opacity limits, the Permittee shall use EPA Reference Method 9.

6. Sn-62 (Clinker Hopper Loading) and SN-63 (Clinker Discharge to Railcar/Truck) and all material handling operations related to the movement of clinker from storage piles to

railcars or trucks are subject to the federal requirements of 40 CFR 60 Subpart F - Standards of Performance for Portland Cement Plants. Specifically, the opacity of particulate emissions from these sources and operations shall not exceed 10% as measured by Reference Method 9. A performance test designed to demonstrate compliance with this Specific Condition shall be conducted within 60 days after achieving the maximum production rate but not later than 180 days after initial start-up.

7. The eight (8) fuel storage tanks identified in the application submittal dated January 7, 1994, as HWT1, HWT2, LWDF3, LWDF4, LWDF5, LWDF6, LWDF7, and LWDF8, the two (2) closed vent systems serving these tanks, the liquid nitrogen condenser system, and the back-up carbon adsorption system are subject to the federal New Source Performance Standards contained in 40 CFR 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, and the National Emission Standards for Hazardous Air Pollutants contained in 40 CFR 61 Subpart FF - Benzene Waste Operations. In this Permit, SN-08 is the vent stack of the condenser currently serving tanks HWT1 and HWT2 and SN-09 is the vent from the back-up carbon adsorption system.

8. Each fuel storage tank identified in Specific Condition 7 shall be operated with no detectable emissions, as indicated by an instrument reading less than 500 ppmv above background, from the cover and all openings (e.g., access hatches, sampling ports, gauge wells, etc.). Compliance with this Condition shall be determined initially, and thereafter at least once per year, by the methods specified in Section 61.355(h) of 40 CFR 61.

9. For each fuel storage tank identified in Specific Condition 7, each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the tank except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

10. Each closed-vent system, the liquid nitrogen condenser and the carbon adsorption system identified in Specific Condition 7 shall be designed and operated in accordance with the requirements of Section 61.349 of 40 CFR 61. Each of these components shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background. Compliance with this Specific Condition shall be determined initially, and thereafter at least once per year, by the methods specified in 40 CFR 61.355(h).

11. Each closed vent system and the liquid nitrogen condenser described in Specific Condition 7 shall be operated at all times that waste is placed in the tanks served by the closed vent system except when maintenance or repair cannot be completed without a shutdown of the control device.

12. The liquid nitrogen condenser system shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater. The control device efficiency shall be determined by conducting a performance test that meets the requirements of 40 CFR Part 61 Section 61.355.

13. Each gauging and sampling device associated with the closed vent systems, condenser and carbon adsorption device identified in Specific Condition 7 shall be gas-tight except when gauging or sampling is taking place.

14. Storage tank vent gases shall be routed to the carbon adsorption system described in Specific Condition 7 (SN-09) only when the liquid nitrogen condenser system is isolated from service for the purpose of being defrosted.

15. Loading of any fuel storage tank described in Specific Condition 7 shall not be allowed at any time that the associated closed vent system is routed to the carbon adsorption system (SN-09).

16. Each closed-vent system described in Specific Condition 7 shall be visually inspected initially and quarterly thereafter. The visual inspection shall include inspection of ductwork and piping and connections to covers and control devices (i.e. associated liquid nitrogen condenser systems and carbon adsorption systems) for evidence of visible defects such as holes in ductwork or piping and loose connections.

17. If visible defects are observed during an inspection or, if other problems are identified or, if detectable emissions are measured, a first effort to repair the closed-vent system shall be made as soon as practicable but no later than 15 calendar days after the emissions are detected or the visible defect is observed. Delay of repair of the unit will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown. In the event that emissions are detected or a visible defect is observed, the Permittee shall notify the Department, in writing, no later than 15 calendar days after the emissions are detected or the visible defect is observed.

18. For the condenser system described in Specific Condition 7, the Permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications, a temperature monitoring device equipped with a continuous recorder. The temperature monitor shall have sensors located in the exhaust stream from the condenser and in the coolant fluid exiting the condenser. These temperature monitors shall have an accuracy of ± 1 percent of the temperature being monitored or ± 0.5° C., whichever is greater. The Permittee shall inspect, at least once each operating day, the data recorded by these temperature recorders to ensure that the condenser system is working properly.

19. The Permittee shall follow all reporting and recordkeeping requirements of 40 CFR 61 Sections 61.356 and 61.357. Reports shall be directed to the Compliance Section Manager, Air Division.

Table 1 - Allowable Opacity and Particulate Emission Rates				
Source #	Description	Opacity (%)	PM_{10} Limit	
			lb/hr	ton/yr
SN-01	Kiln #1	20	19.5	85.4
SN-02	Kiln #2	20	19.5	85.4
SN-03	Kiln #3	20	27.0	118
SN-04	Chalk Pile	20	1.38	6.0
SN-05	Discharge of Gypsum Belt	20	0.11	0.48
SN-06	Gypsum Pile	10	0.05	0.22
SN-07	Clinker Cooler Dust Collector	20	25.0	110
SN-10	Sand-Iron Ore Storage Pile	10	0.001	0.004
SN-11	Sand Storage Pile	10	0.02	0.09
SN-12	Iron Ore Storage Pile	10	0.001	0.004
SN-13	Truck Dumping to Gypsum Hopper	10	0.03	0.13
SN-14	Discharge of Gypsum Feeder	10	0.01	0.04
SN-15	Discharge of Sand-Iron Ore Feeder	10	0.04	0.18
SN-16	#2 Finish Mill Dust Collector	10	1.71	7.5
SN-17	#2 Finish Mill Discharge Dust Collector	10	1.13	5.0
SN-18	#4 Finish Mill Dust Collector	10	2.13	9.3
SN-19	#4 Finish Mill Discharge Dust Collector	10	2.65	12
SN-20	Dryer Scrubber	10	1.43	6.3
SN-21	Long Term Coal Pile	20	0.77	3.4
SN-22	Long Term Coal Pile	20	0.52	2.3
SN-23	Coal Dump Hoppers (2)	20	0.52	2.3
SN-24	Coal Hopper Feeders	20	0.52	2.3
SN-25	Coal Stacker Belt	20	0.52	2.3
SN-26	Kaiser Silo Dust Collector	10	0.94	4.1

Table 1 - Allowable Opacity and Particulate Emission Rates				
Source #	Description	Opacity (%)	PM_{10} Limit	
			lb/hr	ton/yr
SN-27	Oil Well Dust Collector	10	0.31	1.4
SN-28	Delta Silo Dust Collector	10	0.69	3.0
SN-29	Rail Silo Dust Collector	10	1.37	6.0
SN-30	Type III Dust Collector	10	0.31	1.4
SN-31	Masonry Cement Dust Collector	10	0.31	1.4
SN-32	Rail Loadout Dust Collector	10	0.86	3.8
SN-33	Portland Packer Dust Collector	10	0.94	4.1
SN-34	Masonry Packer Dust Collector	10	0.94	4.1
SN-35	Truck Loadout Dust Collector	10	0.88	3.9
SN-36	Active Coal Pile	20	0.88	3.9
SN-37	Type III Loadout Bin Dust Collector	10	0.51	2.2
SN-38	Type II Loadout Bin Dust Collector	10	0.77	3.4
SN-39	Clinker Dust Handling	10	0.09	0.39
SN-40	#1 CKD Bin Dust Collector	10	0.28	1.2
SN-41	#2 CKD Bin Dust Collector	10	0.28	1.2
SN-42	Clinker Transfer Point Dust Collector	10	0.77	3.4
SN-43	Clinker Transfer Point Dust Collector	10	0.77	3.4
SN-44	Clinker Transfer Point Dust Collector	10	0.77	3.4
SN-45	Clinker Transfer Point Dust Collector	10	0.31	1.4
SN-46	Clinker Transfer Point Dust Collector	10	0.31	1.4
SN-47	Clinker Transfer Point Dust Collector	10	0.31	1.4

Table 1 - Allowable Opacity and Particulate Emission Rates				
Source #	Description	Opacity (%)	PM_{10} Limit	
			lb/hr	ton/yr
SN-48	Clinker Transfer Point Dust Collector	10	0.31	1.4
SN-49	Clinker Transfer Point Dust Collector	10	0.51	2.2
SN-50	Clinker Transfer Point Dust Collector	10	0.17	0.74
SN-51	Clinker Transfer Point Dust Collector	10	0.17	0.74
SN-52	Clinker Transfer Point Dust Collector	10	0.17	0.74
SN-53	Clinker Transfer Point Dust Collector	10	0.17	0.74
SN-54	Clinker Transfer Point Dust Collector	10	0.17	0.74
SN-55	Clinker Transfer Point Dust Collector	10	0.17	0.74
SN-56	#1 Clinker Silo Dust Collector	10	0.77	3.4
SN-57	#2 Clinker Silo Dust Collector	10	0.31	1.4
SN-58	Blister Bin Dust Collector	10	0.41	1.8
SN-59	Outside Clinker Belt Discharge	20	1.0	4.4
SN-60	Clinker Transfer Tower Dust Collector	20	3.42	15
SN-61	Secondary Crusher Discharge	10	0.05	0.22
SN-62	Clinker Hopper Loading	10	0.01	0.04
SN-63	Clinker Discharge to Railcar/Truck	10	0.32	1.4
SN-65	Cement Truck Loading Dust Collector	10	1.37	6.0
SN-66	Outside Clinker Hopper Loading	10	0.56	0.45
SN-67	Bin 36 Dust Collector	10	0.41	1.3

Table 1 - Allowable Opacity and Particulate Emission Rates				
Source #	Description	Opacity (%)	PM_{10} Limit	
			lb/hr	ton/yr
SN-68	Bin 37 Dust Collector	10	0.41	1.3
SN-69	Bin 38-41 Dust Collector	10	0.41	1.3
SN-70	Bin 42-45 Dust Collector	10	0.41	1.3
TOTAL	**ALL SOURCES**	---	**130**	**567**

TABLE 2 - Allowable Emission Rates of SO_2, CO, NO_x, Pb and VOC			
Source Number	**Pollutant**	**Emission Limit**	
		lb/hr	**ton/yr**
SN-01 Kiln 1	SO_2	450	1971
	CO	289	1270
	NO_x	584	2560
	Pb	0.06	0.263
SN-02 Kiln 2	SO_2	450	1,971
	CO	160	700
	NO_x	751	3290
	Pb	0.06	0.263
SN-03 Kiln 3	SO_2	674	2,952
	CO	153	670
	NO_x	885	3880
	Pb	0.10	0.438
SN-08 Nitrogen Condenser System	VOC	0.68	3.0

Table 3 - Emission Rate Summary	
Pollutant	**Potential Emissions (tons per year)**
PM_{10}	567
SO_2	6,894
CO	2640
NO_x	9730
Pb	0.964
VOC	3.0

Table 4 - Test Methods for Compliance Demonstrations	
Pollutant	**Test Method**
PM_{10} as total particulate (alternate method) PM_{10} as PM_{10} (alternate method)	40 CFR 60 App. A - Method 5 40 CFR 266 App. IX - Method 0050 40 CFR 51 App. M - Method 201 40 CFR 51 App. M - Method 201A
sulfur dioxide - SO_2	40 CFR 60 App. A - Method 6C
nitrogen oxides - NO_x	to be determined
carbon monoxide - CO	40 CFR 60 App. A - Method 10 (Continuous Sample)
Lead - Pb (alternate method)	40 CFR 60 App. A - Method 12 40 CFR 266 App. IX - Multiple Metals Train
volatile organics (VOC)	40 CFR 60 App. A - Method 18
opacity	40 CFR 60 App. A - Method 9

ATTACHMENT 1

REQUIREMENTS FOR CONTINUOUS EMISSIONS MONITORS

Sections I-IV of this Attachment pertain specifically to the requirements of this Air Permit and are not intended to serve the purpose of demonstrating compliance with any monitoring requirements imposed by either; the federal regulations applicable to Burning of Hazardous Waste for Energy Recovery in Boilers and Industrial Furnaces (40 CFR 266, "the BIF Rule") or, permits issued by the Hazardous Waste Division of the Arkansas Department of Pollution Control and Ecology. The monitoring systems described in this Permit are not currently designed to quantify mass emissions of regulated pollutants on a continuous basis. If these monitors are used to determine compliance with the standards contained in this Permit, an approved method for determination and reporting of the stack gas flow rate must be conducted simultaneous to the collection of the pollutant concentration data and used to develop the quantified emissions being reported.

The sulfur dioxide (SO_2) and nitrogen oxides (NO_x) monitors are subject to the requirements of the Air Permit only. The carbon monoxide (CO) monitor must be calibrated, operated and maintained in accordance with the requirements of both this Air Permit and the BIF Rule. The total hydrocarbon monitor is not subject to the requirements of the Air Permit.

The BIF Rule requires hazardous waste feeds to be automatically shut down when monitored CO concentrations exceed those demonstrated in compliance tests and to remain shut down until monitored values are back within the acceptable range. The BIF Rule requires the CO concentration to be reported as either an instantaneous or as a continuous rolling hourly average value (dry basis, corrected to 7% O_2) based on the 60 most recent one-minute average readings. Each one-minute average must be calculated from no less than four separate values determined at fixed intervals (i.e. 4 readings per minute with a 15 second interval between readings). Where appropriate, the following conditions have been annotated to describe specific Air Permit requirements for the CO monitor. AGC monitors compliance with the BIF Rule CO limits on an hourly rolling average basis. A Table describing the applicable regulatory minimum performance specifications for the SO_2, NO_x, and CO monitors is contained herein.

SECTION I - DEFINITIONS

Continuous Emission Monitoring System (CEMS) - The total equipment required for the determination of a gas concentration and/or emission rate so as to include sampling, analysis and recording of emission data.

Calibration Drift (CD) - The difference in the CEMS output reading from the established reference value after a stated period of operation during which no unscheduled maintenance, repair, or adjustments took place.

Primary CEMS - The main reporting CEMS with the ability to sample, analyze and record stack pollutant to determine gas concentration and/or emission rate.

Back-up CEM (Secondary CEM) - A CEM with the ability to sample, analyze and record stack pollutant to determine gas concentration and/or emission rate. This CEM is to serve as a back-up to the primary CEMS to minimize monitor downtime.

Standby CEM - An analyzer that has been certified by a cylinder gas audit and placed aside until needed. When the standby CEM is placed in service, the monitoring system shall be certified within seven days of installation to verify data acceptability.

Out-of-Control Period - Begins with the hour corresponding to the completion of a daily calibration error, linearity check, or quality assurance audit that indicates that the instrument is not measuring and recording within the applicable performance specifications. Out-of-control period ends with the hour corresponding to the completion of an additional calibration error, linearity check, or quality assurance audit following corrective action that demonstrates that the instrument is measuring and recording within the applicable performance specifications.

Note - For the CO monitors regulated by this Permit, out-of-control period begins with the minute corresponding to the above described indications that the system is not measuring and recording within applicable performance specifications and ends with the minute corresponding to the completion of the corrective action and demonstration of ability to measure and record within the applicable performance specifications. Hazardous waste derived fuels may not be burned in a kiln when the system serving that kiln is out-of-control.

For the SO_2 and NO_x monitors, the definition of out-of-control may be based on either the above-described hour-by-hour or minute-by-minute basis. The minute-by-minute definition of out-of-control may be used for a monitor only when the monitor is acquiring a minimum of four evenly spaced data points per minute and reporting the one-minute average. When using the minute-by-

minute definition of out-of-control, monitor downtime, as defined below, must be calculated on a minute-by-minute basis.

Monitor Downtime - Any period during which the CEMS is unable to sample, analyze, and record a minimum of four evenly spaced data points over an hour, except during one daily zero-span check during which two data points per hour are sufficient. If out-of-control periods are being determined on a minute-by-minute basis, the definition of monitor downtime is any period during which the CEMS is unable to sample analyze, and record a minimum of sixty evenly spaced data points over an hour, except during one daily zero-span check not to exceed 45 minutes duration. If records sufficient to document the duration of an extended kiln outage are maintained, the interval between the time that clinker production stops and is restarted can be excluded from the calculation of downtime. If a monitoring system has been out-of-service for more than 24 hours, a cylinder gas audit must be conducted as part of the startup procedure.

Note - For the CO monitors regulated by this Permit, "monitor downtime" is any period, except during daily zero and span checks, during which the CEM is unable to sample, analyze and record a data point that is used to determine the hourly rolling average concentration. Hazardous waste derived fuels may not be burned in a kiln during CO monitor downtime on the system serving that kiln.

Excess Emissions - Any period in which the emissions exceed the Permit limits.

Note - As stated in the introduction to this attachment, these monitoring systems cannot currently be used to determine excess emissions unless gas flow rate is determined simultaneously. In those cases where excess emissions are detected as part of a compliance stack test conducted to determine compliance with Permit limits, this information is available from the information contained in the stack test report and does not need to be provided in the form of a separate excess emissions report. The Permittee is required to submit the excess emission and monitor system performance report described below and to report any episodes during which its interpretation of monitored data indicates that emissions are estimated to be higher than applicable hourly and annual limits. Automatic waste feed cutoffs caused by an exceedance of the BIF Rule limits on CO and THC are not subject to this definition of excess emissions and do not have to be reported on the quarterly report.

SECTION II - NOTIFICATION AND RECORD KEEPING

A. When requested to do so by an owner or operator, the Compliance Section Manager will review plans for

installation or modification for the purpose of providing technical advice to the owner or operator.

B. Each facility which operates a CEMS shall notify the Compliance Section Manager of the date on which the demonstration of the CEMS performance will commence. Notification shall be received in writing no less than 15 days prior to testing.

C. Each facility which operates a CEMS shall maintain records of the occurrence and duration of any start-up, shut-down, cleaning/soot blowing, process problems, fuel problems, or other malfunction in the operation of the affected facility. This includes any malfunction of the air pollution control equipment or any period during which a continuous monitoring device/system is inoperative.

D. Each facility required to install a CEMS shall submit an excess emission and monitoring system performance report to the Department (Attention: Air Division, Compliance Section Manager) at least quarterly, unless more frequent submittals are warranted, to assess the compliance status of the facility. Quarterly reports shall be postmarked no later than the 30th day of the month following the end of each calendar quarter.

E. All excess emissions shall be reported in terms of the applicable standard. Each report shall be submitted on ADPC&E Quarterly Excess Emission Report Forms. These forms may be obtained from the Air Division of the Little Rock office of ADPC&E. Alternate forms may be used with the prior written approval of the Department.

F. Each facility which operates a CEMS must maintain on-site a file of CEMS data including all raw data, corrected and adjusted, repair logs, calibration checks, adjustments, and test audits. This file must be retained for two years, and is required to be maintained in such a condition that it can easily be audited by an inspector.

G. Quarterly reports shall be used by the Department to determine compliance with the Permit. Violations of the CEMS standards may result in penalties and/or other enforcement action.

SECTION III - MONITORING REQUIREMENTS

A. For new sources, the installation date for the CEMS shall be no later than thirty (30) days from the date of start-up of the source.

B. For existing sources, the installation date for the CEMS shall be no later than sixty (60) days from the issuance of the Permit unless a specific date is required by the Permit.

C. Within sixty (60) days of installation of a CEMS, a performance specification test (PST) must be completed. PST's are defined in 40 CFR, Part 60, Appendix B, PS 1-7. The Department may accept alternate PST's for pollutants not covered by Appendix B on a case-by-case basis. Alternate PST's shall be approved, in writing, by the Compliance Section Manager prior to testing.

D. Each CEMS shall have, as a minimum, a daily zero-span check. The zero-span shall be adjusted whenever the 24-hour zero or 24-hour span drift exceeds two times the limits in the applicable performance specification in 40 CFR, Part 60, Appendix B. Before any adjustments are made to either the zero or span drifts measured at the 24-hour interval, the excess zero and span drifts measured must be quantified and recorded.

Note - For the CO monitors regulated by this Permit, the calibration must be adjusted if the check indicates the instrument's calibration drift exceeds 3 percent of two times the BIF limit.

E. All CEMS shall be in continuous operation and shall meet minimum frequency of operation requirements of 95% up-time for each up-time interval for each pollutant measured. Failure to maintain operation time shall constitute a violation of the CEMS standard.

F. All sources with a CEMS shall meet 95% compliance per each up-time interval for each pollutant. Failure to maintain compliance shall constitute a violation of the CEMS standard.

G. All CEMS measuring emissions shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording for each successive fifteen minute period. For each CEMS, one-hour averages shall be computed from four or more data points equally spaced over each one-hour period.

Note - Each CO monitor shall complete a minimum of one cycle of operation for each successive one-minute period. Hourly rolling averages shall be computed as the arithmetic mean of the last 60 consecutive one-minute averages of four monitored values obtained at a 15-second interval. Rolling hourly averages are to be recalculated and recorded for each minute of operation.

H. When the pollutant from a single affected facility is released through more than one point, a CEMS shall be installed on each point unless installation of fewer systems is approved, in writing, by the Compliance Section Manager. When more than one CEMS is used to monitor emissions from one affected facility (e.g. multiple breaching or multiple exhaust) the owner or operator shall report the results as required from each CEMS.

SECTION IV - QUALITY ASSURANCE/QUALITY CONTROL

A. For each CEMS, a Quality Assurance/Quality Control (QA/QC) Plan shall be submitted to the Department (Attention: Air Division, Compliance Section Manager). Quality assurance procedures are defined in 40 CFR, Part 60, Appendix F. This Plan shall be submitted within 180 days of the CEMS installation. A QA/QC Plan shall consist of procedures and practices which assure acceptable level of monitor data accuracy, precision, representativeness, and availability.

Note - For the CO monitors regulated by this Permit, additional QA/QC procedures are defined by the "BIF Rule". These procedures are incorporated in this Permit.

B. Facilities responsible for one, or more, CEMS used for compliance monitoring shall meet these minimum requirements and are encouraged to develop and implement a more extensive QA/QC program, or to continue such programs where they already exist. Each QA/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

   a. Daily calibrations (including the approximate time(s) that the daily zero and span drifts will be checked and the time required to perform these checks and return to stable operation)

2. Calibration drift determination and adjustment of CEMS

a. Out-of-control period determination

B. Steps of corrective action

3. Preventive maintenance of CEMS

a. CEMS information

1) Manufacture
2) Model number
3) Serial number

b. Scheduled activities (check list)

c. Spare part inventory

4. Data recording, calculations, and reporting

5. Accuracy audit procedures including sampling and analysis methods

6. Program of corrective action for malfunctioning CEMS

C. The submitted QA/QC Plan for each CEMS shall not be considered as accepted until the facility receives a written notification of acceptance for the Department.

D. As part of the QA/QC Plan for each CEMS, a Relative Accuracy Test Audit (RATA), shall be conducted at least once every four calendar quarters. A Relative Accuracy Audit (RAA), or a Cylinder Gas Audit (CGA), may be conducted in the other three quarters but in no more than three quarters in succession. The RATA, RAA, and CGA test procedures shall be included in the QA/QC Plan submitted for approval. Additionally, the justification and methodology for any alternate tests shall be submitted with the QA/QC Plan.

E. If either the zero or span drift results exceed two times the applicable drift specification contained in this Permit, for five consecutive, daily periods, the CEMS is out-of-control. If either the zero or span drift results exceed four times the applicable drift specification in Appendix B during any calibration drift check, the CEMS is out-of-control.

1. Out-of-control begins with the hour or; if reporting downtime on a minute-by-minute basis, the minute, corresponding to the completion of a daily calibration error, linearity check, or

quality assurance audit that indicates that the instrument is not measuring and recording within the applicable performance specifications.

2. Out-of-control ends with the hour or; if reporting downtime on a minute-by-minute basis, the minute, corresponding to the completion of an additional calibration error, linearity check, or quality assurance audit following corrective action that demonstrates that the instrument is measuring and recording within the applicable performance specifications.

3. If a CEMS is out-of-control, the data from that out-of-control period is not counted towards meeting the minimum data availability as required and described in the applicable subpart.

F. A back-up monitor may be placed on an emission source to minimize monitor downtime. This back-up CEM is subject to the same QA/QC procedures and practices as the primary CEMS. The back-up CEM shall be certified by a PST. Daily zero-span checks must be performed and recorded in accordance with standard practices. The back-up system must sample, analyze and record ambient air until such a time that the primary CEMS goes down. When the primary CEMS goes down, the back-up CEM may then be engaged to sample, analyze and record the emission source pollutant until repairs are made and the primary unit is placed back in service. The owner or operator shall notify the Compliance Section Manager of the switch. The owner or operator shall also notify the Compliance Section Manager, in writing, of the suspected problem(s) and the corrective action being taken.

G. A standby CEM is required to be certified by a CGA prior to use and placed aside until needed. Within seven days of installation, a PST (including 7-day drift) must be completed to verify data acceptability. Failure to certify the monitor on the first attempt will void all previous data collected and be counted as monitor downtime until certification can be achieved.

	CO Monitor		SO_2 Monitor	NO_x Monitor
	Low Range	**High Range**		
Designated Monitor (or equivalent)	Mekos 100		Mekos 100	Mekos 100
Type of Monitor	photometer		photometer	photometer
Calibration Drift (24 hour)	≤ 3% of 2X BIF limit	≤ 3% of 2X BIF limit	2.5% of span	2.5% of span
Calibration Error (CE)	≤ 5% of 2X BIF limit	≤ 5% of 2X BIF limit	2.5% of span	2.5% of span
Response Time	≤ 2 minutes	≤ 2 minutes	not applicable	
Relative Accuracy (RA)*	The greater of 10% of the PST or 10 ppm		The greater of 20% of the mean value of the Reference Method or 10% of the standard	
Span Values	2X BIF limit	3000 ppm	to be determined	
Calibration Error Concentration Ranges				
Point 1 - Zero	0-20% of 2X the Permit limit	0-600 ppm	to be determined	
Point 2 - Mid-Range	30-40% of 2X the Permit limit	900-1200 ppm		
Point 3 - Span	70-80% of 2X the Permit limit	2100-2400 ppm		

*Expressed as the sum of the mean absolute value plus the 95% confidence interval of a series of measurements

CERTIFICATE OF SERVICE

I, James B. Jones, Jr., hereby certify that a copy of this permit has been mailed by first class mail to Ash Grove Cement Company, Route 1, Box 73, Foreman, Arkansas 71836-0073, on this 14th day of June, 1994.

James B. Jones Jr

James B. Jones, Jr., Chief, Air Division