

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
ENGINEERING AND COMPLIANCE
APPLICATION PROCESSING AND CALCULATIONS

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CAM PLAN

**EVALUATION FOR
CONTINUOUS ASSURANCE MONITORING (CAM) PLAN**

APPLICANT'S NAME: EXIDE TECHNOLOGIES.

MAILING ADDRESS: 2700 SOUTH INDIANA STREET
LOS ANGELES, CA 90023

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EQUIPMENT LOCATION: 2700 SOUTH INDIANA STREET
LOS ANGELES, CA 90023

FACILITY ID: 124838

EQUIPMENT DESCRIPTION:

APPLICATION NO. 466858

COMPLIANCE ASSURANCE MONITORING (CAM) PLAN FOR THE SOFT LEAD POT FURNACE BAGHOUSE (DEVICE C47), HARD LEAD POT FURNACE BAGHOUSE (DEVICE C46), REVERBERATORY FURNACE BAGHOUSES (DEVICES C40, C41), ROTARY DRYER BAGHOUSE (DEVICE C144), AND THE BLAST FURNACE BAGHOUSE (DEVICE C45).

HISTORY

A/N 466858 was received on 3/27/2007. This application was submitted to comply with the requirements of 40 CFR 64, Compliance Assurance Monitoring, (CAM).

Exide Technologies with Facility ID 124838 is a NOx RECLAIM Cycle I facility that operates a lead acid batteries recycling facility at 2700 South Indiana Street, Los Angeles, California. The facility recycles spent batteries by recovering the lead content to produce lead ingots which are then used in the manufacture of new batteries.

The three major RECLAIM NOx sources operating at this facility include the 30 MMBtu/hr reverberatory furnace, device D119; the 4 MMBtu/hr cupola furnace, device D128 and the

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10 MMBtu/hr afterburner, device C44. The three major NOx sources are combined and are defined as major RECLAIM NOx sources because they are vented to one, common, continuous emissions monitoring system (CEMS).

The CAM rule contains specific federal monitoring requirements for process equipment which is vented by air pollution control systems where the facilities are major sources, as defined in Title V (Reg 30).

This application is required because CAM requirements apply to several dust collectors and/or baghouses at this facility, since PM₁₀ is emitted from this equipment. Emissions of PM₁₀ from the baghouses which contain lead are also subject to control requirements of the lead NESHAP (40 CFR 63 Subpart X).

CAM EXEMPTIONS

The following air pollution control (APC) systems are exempt from CAM requirements for specific air pollutants as indicated below:

Equipment	Devices	Pollutant	Reason For Exemption	40CFR 64 Subpart
Cupola Afterburner	C44	CO	Continuous Emissions Monitor (CEMS)	§ 64.2 (b)(vi)
Cupola Afterburner	C44	TOG (ROG)	Subject to regulation under 40CFR63 Subpart X § 63.543(c)	§ 64.2 (b)(i)
Neptune Scrubber	C43	NOx	(CEMS), Subject to RECLAIM emissions trading program	§ 64.2 (b)(vi) § 64.2 (b)(iv)
Neptune Scrubber	C43	SOx	Concentration Limit with CEMS flowmeter, Subject to RECLAIM emissions trading program	§ 64.2 (b)(vi) § 64.2 (b)(iv)
Pot Furnace Baghouses	C46 C47	NOx SOx	Subject to RECLAIM emissions trading program	§ 64.2 (b)(iv)

CAM REQUIREMENTS

A CAM plan must:

- a. Describe the indicators to be monitored;
- b. Describe the ranges or the process to set indicator ranges;
- c. Describe the performance criteria for the monitoring, including
 - specifications for obtaining representative data
 - verification procedures to confirm the monitoring operational status

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- quality assurance and control procedures
- monitoring frequency which is:
 - 4 times per hour (minimum) if post control emissions are equal to or exceed the major source threshold, or,
 - 1 time per day (minimum) if post control emissions are less than the major source threshold data averaging period;
- d. Provide a justification for the use of parameters, ranges, and monitoring approach;
- e. Provide emissions test data; and, if necessary,
- f. Provide an implementation plan for installing, testing, and operating the monitoring equipment.

Permits are required to have the following items:

- a. The approved monitoring approach, including the indicators - or the means to measure the indicators - to be monitored;
- b. A definition of exceedences or excursions;
- c. The duty to conduct monitoring;
- d. Minimum data availability and averaging period requirements; and
- e. Milestones for testing, installation, or final verification.

MAJOR SOURCE THRESHOLDS

The applicable Major Source Thresholds (MST's) in this case are 70 tons/year uncontrolled PM10 emissions. The emission levels (maximum annual PTE) attributed to the subject sources, and the corresponding minimum monitoring intervals are indicated in the following table:

Evaluation of MST applicability for PM10 control devices

PM10 emissions are estimated based on previous source test data as indicated below:

EXIDE Pb AND PM10 EMISSIONS SUMMARY FOR MAIN SOURCES OF EMISSIONS

APCS Name	A/N	Pb, Inlet lbs/hr	Pb, Outlet lbs/hr	Measured Control Eff. %
APCS #1 Reverb furnace baghouse	328455	126.00	0.0079	99.99
APCS #2 Blast furnace baghouse	374224	8.80	0.029	99.54
APCS #5 Hard lead (pot furnace) baghouse	374194	26.30	0.018	99.93
APCS #6 Soft lead (pot furnace) baghouse	374195	471.00	0.015	99.99
APCS #7 Materials (cupola feed) storage baghouse	496418	1.01	0.019	98.07
APCS # 13 reverb feed room dust collectors	496416	0.27	0.0016	99.40
Rotary dryer baghouse	374221	2283.00	0.37	99.98
North Torit dust collector	483403	0.27	0.0028	98.96

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South Torit dust collector	374227	0.93	0.0042	99.50
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** APCS # 13 and South Torit emission rates from 2010 Almega source tests. Except for APCS #13 and South Torit, lead emission rates from 1994 Carnot source tests

The PM10 emission rates are calculated from the percent of lead typically found in the total particulates controlled by this equipment, as indicated in the following table:

APCS Name	A/N	PM10, Inlet lbs/hr	PM10, Outlet lbs/hr	Estimated Control Eff. %	PM10, Inlet lbs/yr	PM10, Outlet lbs/yr	PM10, Inlet tons/yr	PM10, Outlet tons/yr
APCS #1 Reverb furnace baghouse	328455	252.00	0.0790	99.97	2207520	692	1103.76	0.35
APCS #2 Blast furnace baghouse	374224	17.60	0.2900	98.35	154176	2540	77.09	1.27
APCS #5 Hard lead (pot furnace) baghouse	374194	52.60	0.1800	99.66	460776	1577	230.39	0.79
APCS #6 Soft lead (pot furnace) baghouse	374195	942.00	0.1500	99.98	8251920	1314	4125.96	0.66
APCS #7 Materials (cupola feed) storage baghouse	496418	2.02	0.1900	90.59	17695	1664	8.85	0.83
APCS # 13 reverb feed room dust collectors	496416	0.54	0.0160	97.04	4730	140	2.37	0.07
Rotary dryer baghouse	374221	4566.00	3.7000	99.92	39998160	32412	19999.08	16.21
North Torit dust collector	483403	0.54	0.0280	94.81	4730	245	2.37	0.12
South Torit dust collector	374227	1.86	0.0420	97.74	16294	368	8.15	0.18

estimated percent lead (assumption) 50.00 10.00 **Total = 20.48**

percent lead assumption based on estimate from historical source test data
PM10 emission rates estimated from percent lead assumptions

The CAM rule applies to those APC systems which have inlet PM10 emission rates greater than the MST:

APCS Name	A/N	Device ID	PM10, Inlet tons/yr	PM10, Outlet tons/yr	MST Threshold Inlet, tons/yr	CAM RULE APPLYS
APCS #1 Reverb furnace baghouse	328455	C40, C41	1103.76	0.35	70	YES
APCS #2 Blast furnace baghouse	374224	C45	77.09	1.27	70	YES
APCS #5 Hard lead (pot furnace) baghouse	374194	C46	230.39	0.79	70	YES
APCS #6 Soft lead (pot furnace) baghouse	374195	C47	4125.96	0.66	70	YES
APCS #7 Materials (cupola feed) storage baghouse	496418	C48	8.85	0.83	70	NO
APCS # 13 reverb feed room dust collectors	496416	C156,C157	2.37	0.07	70	NO
Rotary dryer baghouse	374221	C144	19999.08	16.21	70	YES
North Torit dust collector	483403	C38	2.37	0.12	70	NO
South Torit dust collector	374227	C39	8.15	0.18	70	NO

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Evaluation of Monitoring Requirements

Device	ID	PM10, R1, tons/year (max PTE)	PM10, R2, tons/year (max PTE)	MST Inlet tons/year	Minimum Monitoring Requirement
APCS #1 Reverb furnace baghouse	C40, C41	1103.76	0.35	70	1 time per day
APCS #2 Blast furnace baghouse	C45	77.09	1.27	70	1 time per day
APCS #5 Hard lead (pot furnace) baghouse	C46	230.39	0.79	70	1 time per day
APCS #6 Soft lead (pot furnace) baghouse	C47	4125.96	0.66	70	1 time per day
Rotary dryer baghouse	C144	19999.08	16.21	70	1 time per day

Applicable Regulations and Emission Limits

DEVICES	ID	RULES	CONTAMINANT	CONTROLLED EMISSIONS LIMIT
APCS #6 Soft lead (pot furnace) baghouse	C47	401	Visible Emissions	20% opacity
		404	PM concentration	~0.061 gr/dscf (reverb + blast) (common scrubber) ~0.089 gr/dscf (dryer)
APCS #5 Hard lead (pot furnace) baghouse	C46	405	PM emission rate	~13.52 lbs/hr (reverb/dryer) ~10.31 lbs/hr (blast)
		409	PM (from combustion) concentration	0.1 gr/dscf
Rotary dryer baghouse	C144	40CFR60 Subpart L	PM concentration Visible Emissions	0.022 gr/dscf (reverb) 20% opacity (reverb)
APCS #2 Blast furnace baghouse	C45	40CFR63 Subpart X	Visible Emissions Lead concentration	10% opacity (pots) 0.00087 gr/dscf

Notes Rule 409 compliance cannot be physically measured because the products of combustion are co-mingled with process/metallurgical air contaminants. However, compliance with this (409) less stringent requirement is ensured by compliance with the other more stringent requirements.

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MONITORING REQUIREMENTS/APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Exhaust gas particulate concentration will be used as an indicator in the main process baghouses: C47, C46, C40, C41, C144, and C45.

B. Measurement Approach

Triboelectric broken bag detectors equipped with continuous chart recorders and audible/visual alarms will be used as indicators of filter bag failure in the main process baghouses: C47, C46, C40, C41, C144, and C45.

C. Indicator Range

The indicator levels are:

No triggered broken bag alarms with respect to the four process baghouses C47, C46, C40, C41, C144, and C45.

D. QIP Threshold

The QIP threshold is five excursions in a six month reporting period.

E. Performance Criteria

Data Representativeness:

The broken bag detectors will detect excessive changes in the particulate concentration at the outlet of the baghouses.

Verification of Operational Status:

The broken bag detectors are equipped with continuously operational computer interfaces which allow printouts of graphical charts displaying the electronic signal generated by the triboelectric probes installed in the baghouse exhaust outlets.

QA/QC Practice and Criteria:

The triboelectric broken bag detectors will be zero-point calibrated at least once per year, in accordance with permit conditions.

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Monitoring Frequency and Data Collection Procedure:

The broken bag detectors operate continuously and trigger an audible and visual alarm if the particulate concentration in the exhaust gas stream undergoes an excursion. This is a more stringent monitoring frequency than the minimum CAM requirements of once per day.

CAM Monitoring Requirements in Permit Conditions

Device	ID	PM10, R2, tons/year (max PTE)	MST tons/year	Permit Monitoring Requirement
APCS #1 Reverb furnace baghouse	C40, C41	0.35	70	continuous
APCS #2 Blast furnace baghouse	C45	1.27	70	continuous
APCS #5 Hard lead (pot furnace) baghouse	C46	0.79	70	continuous
APCS #6 Soft lead (pot furnace) baghouse	C47	0.66	70	continuous
Rotary dryer baghouse	C144	16.21	70	continuous

JUSTIFICATION

A. Background

Exide Technologies recycles spent lead acid batteries to recover lead metal. Metallic lead is the desired product in this operation. This facility operates a battery wrecker, rotary dryer furnace, reverberatory furnace, cupola furnace, and 14 lead refining pot furnaces. This equipment is vented to air pollution control equipment which includes baghouses and dust collectors.

The building which houses the process equipment described above is kept under negative pressure and is vented to 2 room ventilation dust collectors. The building enclosure controls fugitive particulate emissions released from the process equipment. The exhaust outlet from the battery wrecker scrubber is equipped with a HEPA filter.

It was previously determined that the subject equipment is exempt from applicability of CAM requirements due to the fact that equipment emitting air contaminants which are also subject to regulation by a federal NESHAP rule are exempted from CAM. In essence, the reason for this conclusion is that the particulate matter contains large amounts of lead which is controlled pursuant to monitoring, record keeping, and reporting requirements in the lead NESHAP (40 CFR 63 Subpart X).

The EPA provided the following response with regards to this matter for a similar case:

The District is correct that NESHAPs proposed after November 15, 1990 are exempt from CAM pursuant to

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§ 64.2(b)(1)(i). However, the exemption applies only to the NESHAP itself for purposes of developing the CAM plan; it does not mean that the rotary dryer furnace as a whole is exempt from the CAM program. The preamble to the CAM rule addresses this issue by stating the following:

The Agency notes that if emission limitations or standards other than the exempt emission limits described above apply to the same pollutant-specific emissions unit, the owner or operator would still be subject to part 64 for that pollutant-specific emissions unit and may have to upgrade the existing monitoring or add other types of monitoring. The Agency believes that for many situations in which both exempt and non-exempt emission limits apply to a particular pollutant-specific emissions unit, the monitoring for the exempt limit may be adequate to satisfy part 64 for the other non-exempt emission limit(s). Section 64.4(b)(4) of the rule recognizes this possibility and allows the owner or operator to meet the obligation to explain the appropriateness of its proposed monitoring by stating that it is proposing monitoring for non-exempt limits that is based on the monitoring conducted for certain types of exempt emission limits.

This issue is further clarified by an EPA guidance document which states:

[the proposed] monitoring may be based on the monitoring required for the exempted rule but **the permit submittal must include justification that the selected monitoring will be sufficient to satisfy part 64** and provide a reasonable assurance of compliance with the non-exempt rule or emissions limitation.

In addition to Subpart X, the rotary furnace is also subject to an 8 lb/day* PM10 limit pursuant to the District's BACT and offset requirements. Because the rotary furnace is subject to this emission limit and meets the other applicability criteria under § 64.2, (*the other source**) is still subject to CAM for this emission unit.

(* with regards to another secondary lead smelter)

Therefore, the EPA requires verification that there will be sufficient permit conditions to ensure that monitoring under CAM requirements is adequate. The AQMD believes that these requirements already exist in the final proposed facility permit. The following details will demonstrate this fact.

B. Rationale for Selection of Performance Indicator

All emission sources at this facility emit particulate emissions which contain lead. They are all subject to 40CFR63 Subpart X. This rule limits the lead concentration in the exhaust to only 0.00087 grains/dscf. This limit is much more stringent than all other particulate control rules and performance standards. Therefore, if the subject equipment complies with 40CFR63 Subpart X, compliance is assured with all other applicable rules, since the lead exists in the form of particulates.

All of the baghouses at this facility have previously been tested for compliance with the performance standard in Rule 1420. This standard requires that the control efficiency for emissions of lead is 98 percent or higher.

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The previous testing, and calculations based on these tests, has demonstrated compliance with 40CFR63 Subpart X and all other applicable rules and regulations. The tested level of performance is ensured through the use of broken filter and/or bag detectors and pressure differential gauges, with respect to room ventilation and NESHAP requirements.

The previously tested level of performance will also be ensured with the requirement for periodic testing pursuant to the permit conditions described below.

C. Rationale for Selection of Indicator Level

Process Baghouses: The selected indicator range is no triggering of broken bag detector alarms. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence to determine the action required to correct the situation. All excursions will be documented and reported. An indicator range of no alarm triggers was selected because: (1) the occurrence of an alarm trigger is indicative of an increase in particulate emissions; and (2) the broken bag detectors are continuous monitoring systems which do not require continuous operator intervention.

APPLICABLE PERMIT CONDITIONS

The following permit conditions will ensure compliance with CAM requirements:

The actual details of the normal baghouse operation designed to comply with Rules 1407, 1420, and the lead NESHAP have been implemented in the Rule 1407 and Rule 1420 plan conditions and in the Facility Permit for this facility. Specifically, the following items are noted:

1. Section J of the Facility Permit contains an itemized list of NESHAP requirements that Exide has to comply with, including permit conditions to maintain the SOP's required by sections 63.545 and 63.548 of the lead NESHAP.
2. Sections D and H of the Facility Permit contain specific operating conditions regarding the air pollution control systems (APCS) at this facility. These conditions have the following functions:

CONDITION	REQUIREMENTS
Plan letter	Rule 1420 requirements attached to Facility Permit
Plan letter	Rule 1407 requirements
Section J	Specific requirements for compliance with 40 CFR 63 Subpart X, including testing frequency
A63.1	combined monthly CO emission rate limit for collocated blast furnace and reverb furnace
C6.2	baghouse operating temperature limits
C8.1, C8.8	afterburner operating temperature requirement and continuous temperature recording
D12.6, D12.17	differential pressure gauges
D12.1, D12.5	broken bag detectors

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CONDITION	REQUIREMENTS
D12.11	exhaust gas flow meters
D82.1	requirement for continuous CO CEMS
D323.1	visible emission inspection required if public complaint of visible emissions is made
D381.1	prevention of visible emissions
E102.1	discharge dust enclosed containers
E193.1	CAM requirements (40CFR Part 64)
H116.1	Industrial Ventilation standards for exhaust systems
H116.2	Compliance with the requirements in Rules 1407 and 1420
H116.4	compliance of bag leak detection systems with lead NESHAP requirements
K67.2	records of bag leak detector calibrations and calibration protocol, and records from baghouse inlet temperature gauges
K67.8	afterburner temperature records and thermocouple calibration records
K67.9	recordkeeping requirements for CO CEMS

3. The following APC systems in operation at Exide are subject to CAM requirements. These APC systems have the following conditions associated with them:

APCS	Device ID	REQUIRED CONDITIONS
APCS #1 Reverb furnace baghouse	C40, C41	C6.3, D12.5, D12.6, D12.11, D381.1, E102.1, E193.1, H116.1, H116.2, H116.4, K67.2
APCS #2 Blast furnace baghouse	C45	C6.3, D12.5, D12.6, D12.11, D381.1, E102.1, E193.1, H116.1, H116.2, H116.4, K67.2
APCS #5 Hard lead (pot furnace) baghouse	C46	D12.6, D12.7, D12.10, D12.11, D381.1, E102.1, H116.1, H116.2, H116.4, K67.3, E193.1
APCS #6 Soft lead (pot furnace) baghouse	C47	D12.6, D12.7, D12.10, D12.11, D381.1, E102.1, H116.1, H116.2, H116.4, K67.3, E193.1
Rotary dryer baghouse	C144	C6.2, D12.5, D12.6, D381.1, E102.1, E193.1, H116.1, H116.2, H116.4, K67.2
Blast/Reverb Furnace Common Stack Outlet	S139	A63.1, D82.1, D323.1, K67.9

RECOMMENDATION

Approve CAM Plan under A/N 466858.